



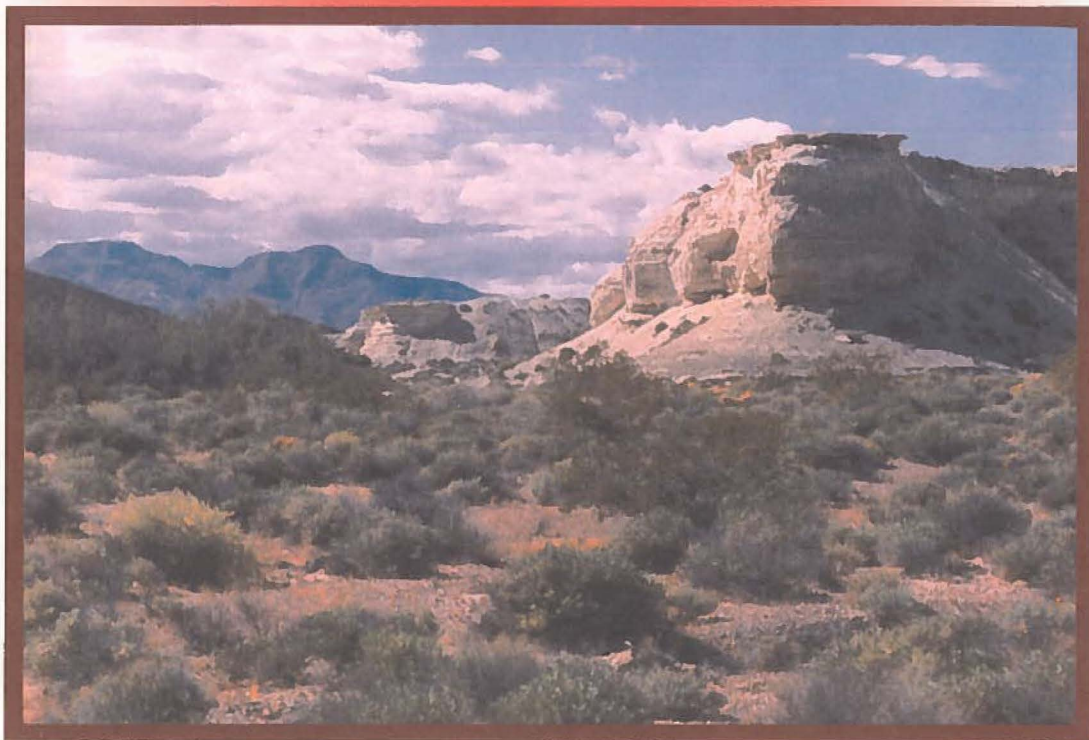
UNITED STATES DEPARTMENT OF INTERIOR
BUREAU OF LAND MANAGEMENT
CALIFORNIA DESERT DISTRICT



FINAL ENVIRONMENTAL IMPACT STATEMENT

PROPOSED NORTHERN AND EASTERN MOJAVE DESERT MANAGEMENT PLAN

VOLUME II - APPENDICES



JULY 2002

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Appendix A

Proposed Desert Tortoise Conservation Strategy

Changes to this chapter in developing the FEIS

1. Public land acreages within proposed DWMAAs have been updated to reflect Catellus Phase II and III acquisitions and exchanges

Appendix A

A.0 Proposed NEMO Desert Tortoise Conservation Strategy

The following Desert Tortoise Conservation Strategy is based on recommendations of a NEMO Desert Tortoise Biological Team.¹ The recommendations were submitted in October 1998. The Team adopted the following goal and objectives as set forth in the recovery plan.

GOAL: To meet the recovery criteria for the Desert Tortoise as specified in the Desert Tortoise Recovery Plan (pp. 43-45). A population of Desert Tortoise within a recovery unit may be considered for delisting when all of the following criteria are met:

Upward or stationary trend in population for at least 25 years;

1. Sufficient habitat² must be managed intensely to ensure long-term tortoise-population viability {at least 1 area of 1000 square miles (640,000 acres) in the recovery unit};
2. Population lambda is at least 1.0³;
3. Land management commitment sufficient to ensure long-term protection of tortoise populations and its habitat, and
4. Management is sufficient without the use of regulatory mechanisms (e.g., formal consultations with U.S. Fish and Wildlife Service) in the Endangered Species Act.

OBJECTIVES: The following objectives are based on the recovery actions specified in the Desert Tortoise Recovery Plan (pp. 45-54):

1. Establish areas where viable Desert Tortoise populations are maintained;
2. Develop and implement management prescriptions for these areas to address threats sufficient to accomplish the goal;
3. Acquire sufficient habitat in these areas to ensure that management strategies are effective;
4. Monitor tortoise populations to assess effectiveness of management prescriptions in meeting recovery goals in these areas;
5. Establish an environmental education program to facilitate understanding of desert tortoise threats and recovery needs, and affect compliance with management strategies in these areas; and
6. Continue research necessary to assess relative importance of threats to the desert tortoise in these areas and to evaluate and improve mechanisms to address these threats.

¹NEMO DT biological team: BLM (team lead) – Larry Foreman; FWS – Ray Bransfield, George Walker, Carol Crosby; BLM-BFO – Mark Depoy, Edy Seehafer, Tom Egan; CDFG – Frank Hoover, Becky Jones; BLM-NFO – Mike McGill, Willow Yumiko; BLM-RFO – Joyce Schlachter.

²Habitat must also be of sufficient quality (Desert Tortoise Recovery Plan, USFWS, June 1994, pp. 48-49).

³Minimum population density potential for adults is believed to be 10/square mile to assure reproductive success (Ibid, in App. C, Section 5, and summarized on p. C53).

A.1 Objective 1 – Establish Areas Where Viable Desert Tortoise Populations are Maintained

An area must meet certain requirements to be considered for management of a viable desert tortoise population. There are basic vegetation, topographical, elevation, climatic, and other habitat requirements that make an area capable of supporting desert tortoises. In addition to these limitations, existing and future habitat fragmentation and sources of mortality must be manageable. An area should meet design requirements for good reserves. A long, linear area, for instance, would be unlikely to maintain a population of desert tortoise due to ease of migration into and out of the area.

In the NEMO Planning Area, four areas generally meet the requirements for viable desert tortoise populations based on the considerations in the previous paragraph. Adjacent areas outside of NEMO that provide viable desert tortoise habitat were also taken into consideration in the analysis of potential tortoise management areas. More specifically, identification of the management areas also considered similar areas in the East Mojave being developed on the Mojave National Preserve and already developed areas in southern Nevada. The management areas under consideration also abut the Northern Colorado Recovery Unit to the south.

A.1.1 Boundaries of Proposed Tortoise Management Units

The U.S. Fish and Wildlife Service (USFWS), California Department of Fish and Game (CDFG) and BLM identified four areas for potential consideration by the BLM for desert tortoise conservation in the NEMO Planning Area. These four areas have had various names, as noted in parentheses, and include the following:

1. **Piute Valley Unit** (a.k.a. Piute-Eldorado Critical Habitat Unit):

This area is bounded on the west and north by the Mojave National Preserve, on the south by I-40, on the east by the Dead Mountains and on the northeast by the Nevada State line. It consists of approximately 173,850 acres, 85 percent⁴ of which (about 148,000 acres) is BLM-managed public lands. This unit together with the tortoise habitat in Fenner and Piute Valleys in the Mojave National Preserve and southern Nevada constitute the Piute-Fenner Desert Wildlife Management Area (DWMA).

2. **Ivanpah Valley Unit** (a.k.a. the northeastern portion of the Ivanpah Critical Habitat Unit):

This area is bounded on the north by a powerline south of I-15, on the west and south by the Mojave National Preserve (and Nipton Road), and on the east by the Nevada State line. It consists of approximately 37,280 acres, of which about 35,200 acres is BLM-managed public lands.

3. **Shadow Valley Unit** (a.k.a. the northwestern portion of the Ivanpah Critical Habitat Unit):

This area is bounded on the north by the Kingston Range, on the west by the Shadow Mountains, on the south by I-15, and on the east by the Clark Mountains. It consists of approximately 114,060 acres, of which approximately 101,355 acres is located east of Turquoise Mountain Road. Of these 101,355 acres, about 95,280 acres are BLM-managed public lands.

⁴ Includes Phase I and II Wildlands/Caltellus acquisitions and exchanges completed in the last two years.

4. **Northern Ivanpah Valley Unit:**

This area is bounded on the west by the eastern extent of the Clark Mountains, on the north by the Nevada State line and on the south and east by I-15. It consists of approximately 29,110 acres, of which about 27,300 acres are BLM-managed public lands.

A.1.2 Evaluation of Proposed Tortoise Management Units

Piute Valley Unit

This area includes examples of the best desert tortoise habitat remaining in the southern portion of the Eastern Mojave Desert. Tortoise densities vary widely, based on local conditions, ranging from about 10 to more than 350 per square mile, with good age-class distribution. There has been some decline over time and recent tortoise die-off from disease in this area. Existing development is patchy and generally low due to the lack of population centers near public lands. Much of the current use is focused further west (within the Mojave National Preserve), north (Lanfair Valley), or south and east of the area along the State line (Needles-Bullhead area). The Piute Valley ACEC is contiguous with lands managed for viable Desert Tortoise populations to the west in Mojave National Preserve and to the east on public lands managed by Las Vegas Field Office of BLM (Las Vegas Resource Management Plan, 1999) and provides critical linkage between these areas. Lands for the adjacent Northern Colorado Recovery Unit are also contiguous on the south of Route 66 and I-40. If the barriers of Route 66 and I-40 can be minimized, the Piute Valley ACEC will also provide an excellent linkage to this desert tortoise habitat to the south. This recommendation is consistent with current and proposed strategies for protection of adjacent National Park Service and BLM habitat of the Eastern Mojave population of the desert tortoise and for adjacent BLM habitat of the Northern Colorado Recovery Unit of the desert tortoise.

Ivanpah Valley Unit

This area provides high-density desert tortoise habitat in the southwestern most portion of the Northern and Eastern Mojave Recovery Unit, proposed for inclusion in the East Mojave Recovery Unit. This boundary would exclude approximately 3,280 acres originally included in BLM Category I habitat; however, this 3,280 acres is adjacent to I-15 and is largely an unoccupied dry lakebed that is not suitable habitat. This area includes all critical habitats in upper Ivanpah Valley. The valley has good quality desert tortoise habitat, but there has been one incidence of tortoise die-off from unknown causes and some signs of shell disease have been observed in the population in recent years.

Development is generally low due to the lack of population centers near public lands, but development pressures are increasing to the north and east from Stateline and to the west from Molycorp activities. The area is contiguous with lands managed for viable desert tortoise populations to the south and west in Mojave National Preserve and by a corridor to public lands managed by BLM's Las Vegas District and provides critical linkage between these latter areas. This recommendation is therefore consistent with the strategy for protection of adjacent National Park Service and BLM habitat of the Eastern Mojave Recovery Unit of the desert tortoise.

Shadow Valley Unit

The area includes all critical habitat from Bull Springs Wash eastward (Bull Springs Wash is adjacent to Turquoise Mountain Road), until it meets with Turquoise Mountain Road, then follow the Road as boundary. This boundary corresponds closely to the boundaries of BLM Category I tortoise habitat, but excludes critical habitat and Category I habitat west of Bull Springs Wash near Turquoise Mountain Road (approximately 12,705 acres) because tortoise populations are lower and the area has habitat fragmentation from roads and small inactive mines. The wash itself is included because it provides one of the few migration connectors for desert tortoises to habitat south of I-15 through the wash underpass. The Shadow Valley area is contiguous with lands managed for viable desert tortoise populations to the south across I-15 in Mojave National Preserve. This area, in conjunction with areas of the Preserve to the south on the other side of I-15, includes a unique genetic unit within California. However, it would be isolated from other DWMA's by non-habitat features to the west (towards Baker). There is low desert tortoise travel through this topographical area. It is further fragmented by I-15 to the south and by higher elevations further to the south.

The area is not yet undergoing substantial development pressures, consists of an almost continuous block of public lands, includes areas of wilderness in the northern one-quarter of Shadow Valley, and would incorporate the northernmost extent of suitable habitat for the Eastern Mojave population of desert tortoise. Desert tortoise densities in this area currently range from 5 to 50 per square mile; potential densities are not known. There has been moderate and increasing tortoise die-off from disease in this area in recent years. This area is also attractive because of its diverse vegetation types and topography that allow tortoises to respond to climatic variation. This recommendation is consistent with the strategy for protection of desert tortoise in the adjacent Mojave National Preserve.

Northern Ivanpah Valley Unit

The area located immediately north and west of Stateline (or Primm) is designated BLM Category I desert tortoise habitat but was not designated as critical habitat by USFWS. The area would not be included in a DWMA because it is relatively small (29,110 acres), is separated from other desert tortoise populations in the NEMO Planning Area by I-15 and Ivanpah Dry Lake, and is undergoing substantial development pressures particularly adjacent to I-15. This recommendation is also consistent with the strategy for desert tortoise adopted by Federal agencies in Nevada. The Nevada strategy did not identify the northern Ivanpah Valley, as an area to be managed for desert tortoise recovery.

A.1.3 Regional Overview of Proposed Approach

With the above proposed ACECS, overall design of tortoise management areas for the Eastern Recovery Unit would include two DWMA's - the Ivanpah-Shadow DWMA and the Piute Eldorado DWMA.

The Ivanpah-Shadow DWMA would include lands within the Mojave National Preserve and two BLM ACECs. Although virtually all tortoise habitat within the Preserve receives a high degree of protection, desert tortoise critical habitat within the Preserve is about 481,290 acres. Contiguous with the Preserve to the northeast, but separated by Nipton Road, is the proposed Ivanpah Valley ACEC; it is 37,280 acres. Contiguous with the Preserve to the northwest, but separated by I-15, is the proposed Shadow Valley ACEC. It is 101,355 acres. Together these three areas (Ivanpah Critical Habitat Unit on the Preserve and proposed Ivanpah Valley and Shadow Valley ACECS) total 619,925 acres. This is about the minimum size set forth in the Recovery plan.

The Piute-Eldorado DWMA would include lands within the Mojave National Preserve and two BLM ACECs. Desert tortoise critical habitat within the Preserve is about 279,460 acres. Contiguous with the Preserve to the southeast is the proposed Piute Valley ACEC; it is 173,850 acres. The Piute-Eldorado ACEC in Nevada in the Eastern Mojave Recovery Unit is 277,000 acres. Together these three areas (Piute-Eldorado Critical Habitat Unit on the Preserve and proposed Piute Valley ACEC and designated Piute-Eldorado ACEC in Nevada) total 730,310 acres. This is above the minimum size set forth in the Recovery plan.

The Ivanpah-Shadow DWMA has two connecting corridors with the Piute-Eldorado DWMA between Ivanpah Valley and Piute and one south of Kelso Valley on the Preserve. The two DWMA's in the Eastern Mojave Recovery Unit (Ivanpah-Shadow DWMA and Piute-Eldorado DWMA) total 1,350,235 acres.

A.2 Objective 2 – Develop And Implement Management Prescriptions For The ACECs To Address Threats Sufficient To Accomplish The Goal

The following proposed prescriptions were developed for desert tortoise and its habitat by the issues as described in Appendix D (Description and Strategy for Addressing Major Desert Tortoise Issues) and the Desert Tortoise Current Management Situation for the NEMO Planning Area (Foreman 1998). The Biological Team based on the BLM Statewide Desert Tortoise Policy and recommendations in the Recovery plan developed the prescriptions.

A.2.1 General Prescriptions for Activities Within Tortoise ACECs

Authorized ground-disturbing activities shall normally be authorized only between November 1 and March 1. If ground-disturbing activities must be authorized outside this window, an on-site biological monitoring shall be required throughout activities, as well as other stipulations to prevent take.

New surface disturbing projects shall include specific design features (see mitigation measures in Attachment 1) to minimize potential impacts to desert tortoise and desert tortoise habitat. Using the formal consultation procedures of the Endangered Species Act, the BLM shall seek to obtain from USFWS a programmatic biological opinion covering all projects less than 100 acres in size (any size for utilities in utility corridors) that do not require an EIS or do not require amendment of the CDCA Plan. The mitigation measures set forth in Attachment 1 below are proposed by BLM as terms and conditions for the biological opinion.

Reclamation would be required for activities that result in loss or degradation of desert tortoise habitat within the desert tortoise wildlife management area, to as close to pre-disturbance condition as practicable. Reclamation may include salvage and transplant of cacti or yucca, re-contouring, scarification of soil, soil amendments, seeding, and transplant of shrubs. Seedings will be of native species, from seed collected in the area of the project when feasible. See Appendix G for additional discussion.

Cumulative new surface disturbance on public lands administered by the BLM within any desert tortoise wildlife management area shall be no more than one percent of BLM lands. For the recommended Shadow Valley ACEC, this currently would be approximately 950 acres, for Ivanpah Valley ACEC approximately 350 acres, and for Piute Valley ACEC approximately 1,300⁵ acres. This one percent limitation would not include needed acreage for expansion of freeways and major highways. The only project identified by CalTrans, in the reasonably foreseeable future, is the widening of Interstate -15 from Victorville, California to Las Vegas, Nevada. See Appendix G for a detailed discussion.

⁵ This number does not yet reflect recent Wildlands/Catellus/BLM exchange lands.

Compensation for disturbances of public lands within the desert tortoise ACECs shall be required at the rate of five acres for each acre disturbed.(Refer to Appendix G for additional Information). Compensation may be in the form of habitat acquisition or off-site habitat improvement or protection projects, at the discretion of the BLM. As ACECs have fewer parcels available for acquisition from willing sellers and/or as the benefit/cost analysis favors habitat enhancement, it will be pursued in connection with or in lieu of acquisition.

A.2.2 Mineral Resources

All Mining Including Locatables

The desert tortoise ACECs shall remain open to mineral entry under the mining laws, subject to cumulative surface disturbance limitations and compensation for new disturbances, as outlined above. Unnecessary and undue degradation will be avoided.

BLM shall require a plan of operation and appropriate bonding for any activities involving disturbance of perennial vegetation, vehicle use off of designated open roads and trails, or use of mechanized earthmoving equipment or explosives.

BLM shall require the operator to reclaim any site upon completion of mining activity, according to a SMARA and BLM-approved reclamation plan and consistent with adopted BLM Standards.

Leasables

Additionally for oil and gas and geothermal activities, drill pads shall be located on disturbed areas or areas adjacent to designated open or limited routes, if technically feasible (e.g. slant drilling).

Saleables

Development and production, including expansion of existing and new pits may be permitted. Wherever feasible, existing pits shall be utilized to minimize new surface disturbance.

Non-commercial hand-collection of rock may occur anywhere, subject to motorized access limitations: (43CFR 8365.1-5)

A.2.3 Grazing Management

Utilize Regional Standards and Guidelines for Grazing Management, CDCA Plan, allotment management plans, and terms and conditions from the existing FWS biological opinions. For allotments within the DWMA:

- Allow voluntary relinquishment of grazing lease and related authorizations.
- Temporary nonrenewable grazing use (perennial) shall not be authorized.
- Cattle shall be substantially removed from the ACEC from 3/15 to 6/15 according to an allotment program during years when ephemeral forage production is less than 230 pounds per acre. The allotment program shall be developed within a year and implemented within two years after that. The allotment program shall be a written plan detailing the area of removal, natural cattle movements, existing and potential improvements, and other constraints of cattle management.
- Ephemeral grazing use on ephemeral allotment would be unavailable and ephemeral grazing use would no longer be available for ephemeral/perennial allotments.
- Continue to apply stipulations in the existing USFWS biological opinions for cattle grazing. (See Appendix E)
- Include additional parameters as needed to discourage the use of range improvements by ravens.

A.2.4 Fire Management

Fires occurring in ACECs shall be managed in accordance with non-impairment criteria, as identified below with minimal disturbance to resource values within the ACEC.

Before the beginning of each fire season, firefighters and support personnel will be provided with a briefing on tortoises and their habitat. This education program will focus on minimizing take of any listed species; particularly take due to vehicle use.

Wildfires within the tortoise ACECs will be suppressed using a mix of the following methods to avoid impairment, including:

- Aerial attack
- Crews using hand tools to create fire breaks
- Mobile attack engines limited to public roads, designated open routes, and routes authorized for limited-use
- Use of foam and/or fire retardant
- Earth-moving equipment and other tracked vehicles (such as bulldozers) will not be used except in critical situations to protect life, property, or resources

BLM will assign a Resource Advisor on all wildfires exceeding initial attack.

Use of surface disturbing equipment, such as bulldozers, is restricted due to the sensitive desert environment. Such equipment can be utilized with field manager approval or at the discretion of the Incident Commander, when life and property are threatened. An on-site Resource Advisor, may authorize the limited use of such equipment if, in his or her estimation, the fire is serious enough that direct mortality and loss of habitat to the desert tortoise that would result from the fire is significant and other control means will not effectively prevent spread.

Backfires and burning of unburned fingers and islands would be discouraged and alternatives considered in tortoise ACECs.

On-road travel speeds will be kept low to reduce take of desert tortoise.

Off-road vehicle travel will be restricted to the minimum necessary to suppress wildfires.

Individuals trained to recognize tortoises and their shelter sites will precede any vehicle traveling off-road.

Camps, staging areas, and helispots will be pre-surveyed for tortoises and burrows by the assigned environmental specialist. Camps will be established within previously disturbed areas whenever practicable

Post-suppression mitigation shall include rehabilitation of firebreaks and other ground disturbances and obliteration of vehicle tracks sufficient to discourage future casual use. Hand tools will be used for rehabilitation activities whenever feasible.

A.2.5 Vegetation Resources

BLM shall not issue permits for live vegetation harvest, except in salvage areas where surface disturbance has been authorized.

No mechanical treatment or type conversion shall be allowed unless it benefits or improves tortoise habitat.

Collection of dead and down wood, with the exception of Joshua trees or yucca species, is allowed for personal camp use.

BLM will reduce the frequency and extent of surface disturbing activities to minimize invasion of weedy plants, whenever possible.

A.2.6 Lands and Realty

Lands shall not be available and shall not be classified or otherwise determined suitable for authorization or entry, under the following authorities:

- Agricultural Land Laws (e.g., Desert Land Entry, Carey Act, Indian Allotment)
- Recreation and Public Purposes Act
- FLPMA Lease/Sale; Exceptions may be considered for sales of hazardous material sites to Potentially Responsible Parties
- Airport Lease/Grant
- Non-protective withdrawals

Discussion: Certain types of discretionary land authorizations and entries constitute long-term disturbance and/or loss of habitat, which is inconsistent with tortoise conservation and recovery in ACECs.

All new major linear utilities shall be placed in existing, designated utility corridors consistent with the existing CDCA Plan Energy Production and Utility Element. To the extent feasible, existing routes would be utilized to provide access for maintenance of rights-of-way.

The poles and towers of electrical distribution lines shall be designed to discourage raven nesting.

A.2.7 Habitat Enhancement

In authorizations for projects that will disturb habitat, the BLM shall apply stipulations requiring rehabilitation of the disturbance. The rehabilitation shall be at least to the point where the topography, soils and vegetation conditions have been established for return to pre-disturbance conditions. This includes such actions as closing access to non-designated roads and restoring non-designated roadbeds to a condition suitable for their natural return to a pre-disturbance state. With regard to tortoise needs, the purpose is to return the habitat to meet the following needs:

- Lands are suitable for burrowing, if they would have been suitable prior to disturbance. This is characterized by stabilized, non-compacted soils
- Lands are adequate for foraging as indicated by sustainable replenishment of annual vegetation utilized by the desert tortoise in the area
- Lands provide adequate thermal cover through perennial shrubbery and other natural features utilized by the desert tortoise in the area

More specific criteria are now under development by the Desert Wide Restoration Taskforce. Site-specific rehabilitation standards will be developed for each site, to be supplemented with guidance provided by that Taskforce. (See Appendix G for additional information on this effort).

BLM may use compensation funds for enhancement of tortoise habitat after coordination with CDFG and USFWS. (See A.2.1 Item 5)

A.2.8 Transportation/Access

BLM shall designate roads and trails within the DWMA as "open", "limited use" or "closed". The BLM shall prohibit motorized vehicle activity off of designated open roads and trails, except for official fire suppression, search and rescue, law enforcement, or other similar administrative need (including access to projects such as fences, waters, utilities) or for vehicle-based camping adjacent to open routes. "Limited use" routes are designated for special use (e.g., seasonal closure) or permitted access (e.g., a landowner to private lands). See Chapter 7, Figures 4a, b and c. Biological Parameters to minimize harassment of wildlife or significant disruption of wildlife habitat will be followed during the route designation process, including:

- Washes will be closed unless they provide the major through access in an area and no reasonable alternative exists, or they provide access to a major recreational site and do not result in substantive degradation of habitat
- The route designation process shall consider fragment size
- Closure of routes within ¼ mile of any significant bat roost shall be strongly considered
- Closure of routes within ¼ mile of known prairie falcon or golden eagle eyries (cliff nests) shall be strongly considered
- Closure of routes within ¼ mile of natural or artificial water sources (e.g. springs, seeps, streams, guzzlers) shall be strongly considered
- Closure of "redundant" routes shall be strongly considered

All DWMA lands bordering Interstate freeways and major highways shall be fenced. Priorities for fencing are the following:

- Interstate highways abutting or passing through a desert tortoise DWMA ACEC, including:
 - 34 miles of Interstate 40 in Piute-Fenner Valley (North side includes approximately 19 miles within the Mojave National Preserve that would be coordinated through the National Park Service)⁶
 - 20 miles of Interstate 15 through Shadow Valley (North side includes about 2.75 miles of private lands that would require easement or in Caltrans ROW; south side includes about 2 miles that would be coordinated through the National Park Service, across NPS-managed land), and 1.5 miles of Interstate 15 through Ivanpah Valley.
- Based upon average daily travel exceeding 1,000 vehicles and tortoise density exceeding 50 per square mile, the following highways:
 - 23.9 miles along U.S. 95 through Piute Valley from the California border to the intersection with Burlington Northern/Santa Fe Railroad at Arrowhead Junction (On both north and south side includes about 6 miles private and 1 mile State-managed lands). This highway would be fenced upon widening to 4 lanes and include a couple of wash undercrossings for desert tortoise

⁶ The south side of this fence is covered in the Northern and Eastern Colorado Planning effort and the entire fence would be coordinated between the two planning efforts, along a common proposed DWMA boundary.

- 12 miles along Nipton Road between the California border near Nipton to Interstate 15 in Ivanpah Valley (South side 12 miles would be coordinated through the National Park Service, across NPS-managed and private lands; both sides includes about 3.5 miles of private lands that would require easement or in Caltrans ROW).

Fencing shall meet current specifications concerning mesh size, burial and design standards and shall be placed on both sides of the road. These standards will consider prevention of road kills to discourage ravens and coyotes.

Closed roads/routes shall be rehabilitated whenever necessary to prevent their continued use and to speed restoration.

Physical maintenance and grading shall be the minimum necessary to maintain the use of the road for its prescribed purposes. Grading shall be conducted with specified standards to prevent trapping desert tortoises within the roadbed, including appropriate standards for road berms.

A.2.9 Recreation Resources

Restrict vehicle camping to within 100 feet of centerline of designated open roads in previously disturbed areas. This is consistent with existing CDCA Plan guidance for sensitive areas. BLM shall provide visitor information to encourage visitors to camp in areas that have already been disturbed.

Allow dispersed non-motorized recreational activities in desert tortoise ACECs. Development of new recreational facilities, such as visitor centers, developed campgrounds, new designated non-motorized trails, shall not be allowed in the ACECs if these would create new permanent surface disturbance. Marking of existing non-motorized trails to known visitation sites to encourage use of one identified path is appropriate, if existing use has created an area of disturbance. Installation of interpretive signing and informational kiosks shall be encouraged.

Prohibit competitive speed events in the desert tortoise ACECs. Land sailing permits may be authorized for the Ivanpah lakebed outside of the ACEC, subject to appropriate terms and conditions. Secondary impacts from such events, such as group campsites, shall also be sited outside of the ACEC.

Restrict dual sport events to designated open routes between November 1 and March 1, continuing the existing ceiling on the number of riders per event (i.e., 500 riders) and any route-specific resource limitations.

Allow hunting according to current State legislation and regulations. Motorized access for hunting shall be limited to designated open or seasonally limited routes.

A.2.10 Wild Horse and Burro

Eliminate the Clark Mountain Herd Management Area from the DWMA and continue to reduce herds in associated Clark Mountain herd concentration areas (HCAs) as directed in the CDCA Plan until burros are substantially removed from the three HCAs. (HMA "F" Map 8 of the CDCA Plan)

Discussion: The appropriate management level (AML) for the Clark Mountain HMA would change from 44 burros in the current HMA (all within the Shadow Valley Concentration Area) to 0 burros (See Chapter 8, Figure 8c).

Burros located in the Clark Mountain Herd Management Area and its associated three concentration areas would be removed and any potential drift managed through relocation by direct or indirect means to other Herd Management Areas or rounded up for adoption. Shadow Valley would be the first priority round-up area, followed by the other two concentration areas.

The cumulative effect would be the substantial elimination of burros from the Clark Mountain Herd Area, freeing the forage the burros are consuming for potential use of desert tortoise or other foragers.

A.2.11 Wildlife

Existing wildlife guzzlers shall be modified to minimize mortality to desert tortoises, and new guzzlers shall incorporate appropriate design features to do the same.

The BLM shall identify lands for potential relocation, on a case-by-case basis, in coordination with USFWS, CDFG and private landowners who may wish to relocate desert tortoises from private lands slated for development onto nearby public lands within the tortoise ACECs.

A.2.12 Ravens

Within DWMA's, the BLM shall work with other agencies to implement a raven management strategy to reduce raven predation on tortoises. This raven management plan is based on the work of biologist Bill Boarman, who has identified the key elements of a successful raven management program. Early priorities for implementation of this phased approach in the NEMO planning area includes the following items:

- The BLM will work with other agencies to achieve fencing of major highways to minimize road kills as a food source for raven populations
- The BLM will remove ravens that are known to prey on tortoises through selective shooting or trapping and euthanasia where there is evidence of raven predation in or within one mile of DWMA's
- To the extent possible, the BLM shall eliminate human-caused sources of raven food as identified (e.g., illegal dumps, uncovered trashcans) at specified sources within DWMA's
- BLM will work with other agencies to reduce the availability of solid wastes at operating sanitary landfills outside of DWMA's and on overall programs to reduce the availability of organic wastes (related to facilities and methods for trash service, dump stations, and composting practices) unrelated to sanitary landfills
- BLM will work with other agencies and local jurisdictions to reduce the availability of unnecessary waters (related to facilities and methods for sewage treatment, pool/pond design, and irrigation)
- BLM will pursue raven management research as identified by the Desert Tortoise Management Oversight Group, to identify habitat requirements and control methodologies in the settings that the NEMO DWMA's provide, where populations appear to range over larger, less densely inhabited areas with longer commuter distances between major feeding locations. An unknown factor is the amount of habitat being provided by agricultural lands within the DWMA's.
- Proposed projects on public lands in the planning area which have the potential for increasing raven populations will be reviewed for design and operation features to reduce or eliminate the opportunity for proliferation of ravens.
- This program will be modified as needed to address the changing threat that ravens may pose in the planning area.

A.2.13 Law Enforcement

The law enforcement effort shall be aimed at enforcing wildlife regulations and reducing illegal dumping, littering, arson, cross-country vehicle travel, and vandalism.

A.2.14 Other Issues

The BLM shall participate 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 will encourage San Bernardino County to adopt or enforce ordinances prohibiting uncontrolled dogs in those areas.

The BLM shall participate with CDFG, USFWS, and other groups and agencies to identify areas where vandalism (e.g. shooting, collecting) of desert tortoises is occurring and take measures to prevent future occurrences.

A.3 Objective 3 – Acquire Sufficient Habitat in ACECs to Ensure that Management Strategies Are Effective

Habitat fragmentation is a major contributor to population declines (Berry 1984b, Berry & Burge 1984, Berry & Nicholson 1984b and Berry 1984c). Desert tortoises require a great deal of space to survive. Over its lifetime, each desert tortoise may require more than 1.5 square miles of habitat and may make forays of more than 7 miles at a time. In drought years, desert tortoises forage over larger areas and thus have a greater probability of encountering potential sources of mortality. Roads and urban areas form barriers to movement with higher raven densities, and tend to create small, local desert tortoise populations, which are much more susceptible to extinction than large, connected ones (Wilcox & Murphy 1985). Actions to ensure adequate desert tortoise habitat include:

- The BLM shall seek to acquire State Lands Commission lands and private lands within ACEC's. Exchange for lands of equal value shall be the preferred acquisition tool, when feasible. Acquisitions shall include surface and subsurface mineral rights wherever possible. Any lands acquired within tortoise ACECs will be managed in accordance with recovery area prescriptions.
- The highest priority parcels for acquisition are all lands in Piute Valley ACEC and three sections near Nipton Road in Ivanpah Valley.
- Compensation funds may be utilized for acquisition or enhancement of tortoise habitat.
- BLM shall not dispose of public lands within any tortoise DWMA, unless in the overall interest of desert tortoise conservation and recovery.

A.4 Objective 4 – Monitor Tortoise Populations to Assess Effectiveness of Management Prescriptions in Meeting Recovery Goal in These Areas

A monitoring program is essential to determine whether actions taken in the ACECs are effective and whether desert tortoise recovery goals are being achieved. To accomplish this the following monitoring program is proposed:

- The BLM shall participate with other agencies in a regionwide desert tortoise population trend-monitoring program using the distance sampling procedures approved by the Desert Tortoise Management Oversight Group. The Desert Tortoise Program Coordinator will oversee monitoring surveys, data storage, and data analysis.
- In addition to the rangewide desert tortoise monitoring effort, the BLM shall continue to monitor Shadow Valley desert tortoise permanent study plot on a four-year cycle to collect data on population size and demographics, direct mortality, vegetative trend, and uses for the area.
- The BLM in coordination with CDFG and USFWS shall establish an implementation monitoring strategy. This strategy would include monitoring of burro use and population distribution consistent with public lands health standards, monitoring of guzzlers to assure proper functioning, compliance monitoring for permitted activities and uses, and tracking of cumulative new surface disturbance.
- If population declines become evident in any tortoise ACEC, efforts to determine causes of population emigration and/or mortality should be pursued immediately in order to prevent extirpation. Efforts to recolonize the ACEC with wild desert tortoise from the same recovery unit should be undertaken if feasible. Long-term research and monitoring would be necessary to ensure the success of any such recolonization effort. In addition to these actions, emergency closures of cattle allotments or placements of allotments and licenses into non-use categories may be needed in affected areas to reduce stresses and provide additional forage. Land and mineral withdrawals may also be required to prevent impacts to desert tortoise and their habitat until adequate recovery occurs in the affected area.

A.5 Objective 5 – Establish An Environmental Education Program to Facilitate Understanding of Desert Tortoise Threats and Recovery Needs and Compliance with Management Strategies in These Areas

Visitor centers, interpretive sites, guided tours, and campgrounds are all appropriate in towns near desert tortoise wildlife management area units to educate the public about the status and needs of the desert tortoise and its habitat. In addition, desert tortoise programs should be developed for use in schools, museums, clubs, the media etc. Education efforts should be focused on groups using the desert on a regular basis. In addition, private landowners and other land managers can be encouraged to implement management actions that promote the conservation of other species and biotic communities.

These actions are recommended to increase manageability, establish an enforcement presence, effect an immediate reduction in the threats to desert tortoise populations in desert tortoise ACECs and build local support for the wildlife management area concept. Specific educational programs within the NEMO planning area, in addition to the above, include:

Install informational kiosks at major access points and informational signs at other access points to the desert tortoise wildlife management area units.

- Work with CalTrans to design and install separate, freestanding, interpretive kiosks with desert tortoise protection information at Halloran Springs and Fenner Valley rest areas.
- Update Desert Access Guides to include desert tortoise information.
- Update desert tortoise brochures and informational packets to reflect changes identified for the tortoise ACECs (e.g., camping distance change to 100 feet off routes).
- Develop an update to the existing BLM webpage for the desert tortoise recovery planning efforts.
- Implement other elements of the Statewide Tortoise Policy Public Outreach Program as funding becomes available.

A.6 Objective 6: Continue Research Necessary to Assess Relative Importance of Threats to the Desert Tortoise in These Areas and To Evaluate and Improve Mechanisms to Address These Threats.

Unlike the situation with many threatened or endangered species, considerable data exists on many aspects of the biology of the desert tortoise. Although there is also much information on the effects of human activities, much of the data has limited usefulness for site specific recovery planning. The magnitude and scope of new research data essential for recovery planning requires an unprecedented level of coordination and cooperation within and among agencies. Biologists and research scientists in the Department of Interior (BLM, NPS, Bureau of Reclamation, and USGS Biological Resources Division), Department of Defense, and other Federal and State agencies must work together to achieve this goal. No one agency can handle the entire essential research and monitoring. Employing the talents of academic researchers will be essential.

The Desert Tortoise Technical Advisory Group (TAC), which reports directly to the Management Oversight Group (MOG), has prepared and periodically updated a list of research priorities. With the large number of researchers involved in desert tortoise issues, many topics on the list and their relative priority change rapidly. In 2000, the TAC prepared a list of research priorities for each Recovery Unit. Although it is expected that these priorities will change, following is the list generated for the MOG in 2000 for the Northern and Eastern Recovery Unit:

- Recommended high priority research topics
 - Epidemiology of upper respiratory tract disease in wild desert tortoise populations.
 - Epidemiology of shell diseases in wild desert tortoise populations.
 - Relationship between environmental toxicants and tortoise health.
 - Ecological relationship between fire and alien plant invasion and distribution.
 - The relationship between tortoise distribution and alien plant invasion and distribution.
 - Demography and mortality in desert tortoise populations.
- Recommended medium priority research topics
 - Validation and refinement of distance-sampling techniques for tortoise monitoring.
 - Long-distance movements in and fragmentation of desert tortoise populations.
 - Effectiveness of barrier fences and culverts in recovery of a local desert tortoise population.
 - Impacts of OHV use on approved routes of travel on tortoise populations and habitat.
 - Geographic variation and environmental determinants of reproductive output in the desert tortoise.

- Recommended low priority research topics
 - Ecology of raven predation on desert tortoises and raven behavior, particularly in more natural landscapes where tortoise predation is occurring.
 - Ecology of hatchling and juvenile desert tortoises in Mojave Desert habitats.
 - Effects of cattle grazing on desert tortoise populations.
 - Restoration and rehabilitation of desert tortoise habitat in the Mojave.

A.7 Management Actions in Desert Tortoise Habitat Outside ACECs

Authorized ground-disturbing activities may occur year-round.

Reclamation shall be required for activities that result in loss or degradation of desert tortoise habitat to as close to pre-disturbance condition as practicable. Reclamation may include, but are not limited to, salvage and transplant of cacti or yucca, re-contouring, scarification of soil, soil amendments, seeding, and transplant of shrubs. Seedings shall be of native species, from seed collected in the area of the project when feasible.

There are no cumulative acreage disturbance limitations to desert tortoise habitat outside of the ACECs.

Compensation shall be required by BLM for disturbances of desert tortoise habitat at the rate of 1 acre for each acre disturbed; this is the same as the current requirement in BLM's Desert Tortoise Statewide Management Policy. Funds collected from project proponents shall be directed to habitat enhancement, rehabilitation or acquisition in the Eastern Mojave Recovery Unit. Proponents may also implement enhancement or rehabilitation projects or donate lands directly, at BLM discretion.

New surface disturbing projects shall include specific design features (see mitigation measures section in Attachment 1) to minimize potential impacts to desert tortoise and desert tortoise habitat. Using the formal consultation procedures of the Endangered Species Act, the BLM shall seek to obtain from USFWS a programmatic biological opinion covering all projects less than 100 acres in size (any size for utilities in utility corridors) that do not require an EIS or do not require amendment of the CDCA Plan. The mitigation measures set forth in Attachment 1 below are proposed by BLM as terms and conditions for the biological opinion.

Attachment 1

Desert Tortoise Mitigation Measures

Introduction

These measures are intended to minimize impacts to the tortoise. In various wordings, they have been included in biological opinions issued by USFWS and in land-use decisions rendered BLM and others on Federal lands.

General Mitigation Measures

Designated Persons

In the following measures, a "Qualified Biologist" is defined as a person with appropriate education, training, and experience to conduct tortoise surveys, monitor project activities, provide worker education programs, and supervise or perform other implementing actions. The person must demonstrate an acceptable knowledge of tortoise biology, mitigation techniques, habitat requirements, sign identification techniques, and survey procedures. Evidence of such knowledge may include work as a compliance monitor on a project in desert tortoise habitat, work on desert tortoise trend plot or transect surveys, or other research or field work on desert tortoise. Attendance at a training course endorsed by the agencies (e.g., Desert Tortoise Council tortoise training workshop) is a supporting qualification.

An "Authorized Biologist" is defined as a wildlife biologist who has been authorized to handle desert tortoises by the USFWS and CDFG for this project. Name(s) of proposed authorized biologist(s) must be submitted to the USFWS and CDFG for approval at least 15 days prior to anticipated need.

A "Field Contact Representative" (FCR) is defined as a person designated by the project proponent who is responsible for overseeing compliance with desert tortoise protective measures and for coordination with the agency compliance officer. The FCR must be on-site during all project activities. The FCR shall have the authority to halt all project activities that are in violation of these measures. The FCR shall have a copy of all tortoise protective measures when work is being conducted on the site. The FCR may be an agent for the company, the site manager, any other project employee, a biological monitor, or other contracted biologist."

Worker Training

All workers, including all participating agency employees, construction and maintenance personnel, and others who implement authorized actions shall be given special instruction. This instruction will include training on distribution, general behavior and ecology, protection afforded by State and Federal endangered species acts (including prohibitions and penalties), and procedures for reporting encounters, and the importance of following the protection measures. The education program may consist of a class or video presented by a qualified biologist. It is recommended that workers carry wallet cards with important information while in the field. (See Fig #A-1)

Compliance

The FCR shall oversee compliance and coordination with the authorizing agency. Compliance shall include conducting species surveys, proper removal of species from areas being impacted, and assurance that a sufficient number of qualified biologists are present during surface disturbance, and that proponent, contractors, and workers are meeting all conditions of the authorization. The FCR shall have the authority to halt activities that are in not in compliance with the authorization.

The biological monitor shall document any incident occurring during project activities, which is considered by the biological monitor to be in non-compliance with the mitigation plan, immediately. The FCR shall ensure that appropriate corrective action is taken. The monitor shall document corrective actions. The following incidents shall require immediate cessation of the construction activities causing the incident, including:

- Imminent threat of injury or death to a desert tortoise
- Unauthorized handling of a desert tortoise, regardless of intent
- Operation of construction equipment or vehicles outside a project area cleared of desert tortoise, except on designated roads
- Conducting any construction activity without a biological monitor where one is required (see Term and Condition 2.1). If the monitor and FCR do not agree, the Federal agency's compliance officer shall be contacted for resolution. All parties may refer the resolution to the Federal agency's authorized officer.

After completion of the project, the participating agency that authorized the project shall conduct a review to determine if the project proponent complied with the conditions of authorization. Corrective actions shall be required of the proponent where conditions have not been met.

Compensation

A mitigation fee based on the amount of acreage disturbed shall be required of proponents of new development. Compensation in Category I shall be required at the rate of five acres for each acre disturbed. Compensation in Category III shall be at the rate of one acre for each acre disturbed.

Compensation shall be in the form of habitat acquisition or enhancement or funds to accomplish these.

Tortoise Seasonal Restrictions

To the extent possible, activities shall be scheduled when tortoises are inactive (November 1-March 1). Dual-sport (non-speed, trail-ride) events and non-emergency maintenance of roads are restricted to this season in wildlife management area units.

Pre-Construction Clearance Surveys

Pre-construction surveys shall be conducted to locate and remove desert tortoises prior to grading or actions which might result in harm to a desert tortoise or which remove tortoise habitat. The survey shall be conducted by an authorized biologist within 24 hours of the onset of the surface disturbance unless a tortoise-proof fence has been installed that would prevent re-entry of the animals.

Site Fencing and Hazard Removal

During the tortoise active season, March 1 - November 1, no overnight hazards to desert tortoises (e.g., auger holes, trenches, pits, or other steep-sided depressions) shall left unfenced or uncovered; such hazards shall be eliminated each day prior to the work crew leaving the site.

Large or long-term project areas shall be enclosed with tortoise-proof fencing to keep desert tortoises out of the work area. The fencing shall be wire mesh with a maximum mesh size of 1-inch (horizontal) by 2-inch (vertical) fastened securely to posts. The wire mesh shall extend at least 18 inches above the ground and preferably about 12 inches underground. Where burial is not possible, the lower 12 inches shall be folded outward and fastened to the ground. Any gates or gaps in the fence shall be constructed to prevent entry of tortoises. The fencing shall be removed when restoration of the site is completed.

Temporary fencing shall be required around test sites where trenching or drill holes could trap animals or around other small, short-term projects where tortoises could move into the work area. Occasionally, seasonal restrictions and/or monitoring may be substituted to alleviate the need for fencing. Fenced areas are to be cleared of tortoises by an authorized biologist prior to project activities.

Surface Disturbance

All surface disturbing activity shall be limited to the land area essential for the project. In determining these limits, consideration shall be given to topography, public health and safety, placement of facilities, location of burros and vegetation, avoidance of sensitive resources and other limiting factors. Work area boundaries and special habitat features shall be appropriately marked to minimize disturbance. All workers shall strictly limit their activities and vehicles to the areas marked. All workers shall be trained to recognize work area markers and to understand equipment movement restrictions. Where possible, previously disturbed areas shall be used as worksites and for storage of equipment, supplies, and excavated material.

Blading of work areas shall be minimized to the extent possible. Pre-construction activity, such as removal of vegetation, shall occur in the presence of a qualified biologist and if necessary, a qualified archaeologist or data archaeological technician (DAT). Disturbance of shrubs shall be avoided to the extent possible. Where shrubs must be disturbed, they shall be crushed rather than bladed or excavated, unless excavation of an area is specifically authorized. Topsoil shall be set aside and reapplied as part reclamation activities. Surface disturbance activities in areas that may affect properties on or eligible for the National Register of Historic Properties must have a site-specific evaluation prior to disturbance, and appropriate consultation with the CA-SHPO⁷ and/or affected tribes. All ground disturbing activities will comply with the Native American Graves Protection and Repatriation Act.

Project maintenance and construction, stockpiles of excavated materials, equipment storage, and vehicle parking shall be limited to existing disturbed areas wherever possible. Special habitat features, particularly tortoise burrows and archaeological sites (if present) shall be flagged by the qualified biologist so that they may be avoided by installation equipment and during placement of poles and anchors.

Cultural or tribal features uncovered during surface disturbance activities will result in cessation of activities in the affected area until the evaluation of the find by a qualified archaeologist can occur. In the case of inadvertent finds of Native American human remains the most likely affected tribe or tribes will be notified in addition to the Native American Heritage Commission and the coroner as provided by law.

Biological Monitor

For activities conducted between March 1 and November 1 in desert tortoise habitat, a qualified biologist approved by BLM shall monitor construction and operation activities. The qualified biologist shall be present during all activities in which encounters with tortoises may occur. The qualified biologist shall watch for tortoises wandering into the construction areas, check under vehicles, examine excavations and other potential pitfalls for entrapped animals, examine exclusion fencing, and conduct other activities necessary to ensure that death or injuries of tortoises is minimized.

⁷ California State Preservation Office

Refuse Disposal

All trash and food items generated by construction and maintenance activities shall be promptly contained and regularly removed from the project site to reduce the attractiveness of the area to common ravens and other desert predators. Portable toilets shall be provided on-site if appropriate.

Dogs

For a long-term occupancy, dogs shall be restrained either by enclosure in a kennel or by chaining to a point within the tortoise proof enclosure if one has been constructed for the activity. Dogs must always be under control. Control may be exercised by voice command or by leash.

Ravens

Structures that may function as common raven nesting or perching sites are not authorized except as specifically stated in the appropriate BLM document. The proponent shall provide a graphic description of all structures to be erected on the site. Some actions are required to mitigate actual nesting on authorized structures, such as requiring the proponent to secure necessary permits to remove nests and to remove such nests in a timely fashion. USFWS rarely authorizes nest removal if birds are present in the nest, but does authorize nest removal after birds have left.

Motorized Access

Where possible, motor vehicle access shall be limited to maintained roads and designated routes. Where temporary access off a maintained road or designated route is permitted, a qualified biologist shall travel with each work crew to ensure that all desert tortoises and their burrows are avoided and that impact to the habitat is minimized. All vehicle tracks that might encourage public use shall be obliterated after temporary use.

Where access from a maintained road or designated route to a project's site is part of the approved development plan, length and location of the route shall be designed to minimize impact to the habitat. The amount of disturbed area shall be subject to the mitigation fee, and the route shall be designated "Limited Use" and not open to the public.

Speed Limits: Vehicle speed within a project area, along right-of-way maintenance roads and on routes designated for limited use shall not exceed 20 miles per hour. Speed limits shall be clearly marked by the proponent, and workers shall be made aware of these limits.

Tortoises Under Vehicles: Vehicles parked in desert tortoise habitat shall be inspected immediately prior to being moved. If a tortoise is found beneath a vehicle, the authorized biologist shall be contacted to move the animal from harms-way, or the vehicle shall not be moved until the desert tortoise leaves of its own accord. The authorized biologist shall be responsible for taking appropriate measures to ensure that any desert tortoise moved in this manner is not exposed to temperature extremes, which could be harmful to the animal.

Route Maintenance and Surface Restoration

The following mitigation measures shall be implemented during all route maintenance and surface restoration projects:

Heavy Equipment: Operators of heavy equipment such as road graders shall be accompanied by a biological monitor who is a qualified biologist when working in wildlife management area units during the desert tortoise's active period (March 1 to November 1). The biological monitor shall walk **in front** of the equipment during its operation and shall function as the FCR and have the responsibility and authority to halt all project activity should danger to a desert tortoise arise. Work shall proceed only after hazards to the desert tortoise are removed, the desert tortoise is no longer at risk, or an authorized biologist has moved the desert tortoise from harms way. This measure does not currently apply to County or CalTrans roadwork on BLM land.

During the desert tortoise's inactive period (November 1 to March 1) an on-site monitor is not required, but the equipment operator shall be qualified as described under measure 16d. Otherwise a biological monitor shall accompany the operator. The operator shall watch for desert tortoises while using the equipment and shall have the responsibility for preventing harm to desert tortoises, as described under measure 16a.

Operators of light equipment used for trail maintenance and project leaders for surface reclamation actions shall watch for desert tortoises during all project activities. They shall have the responsibility for preventing harm to desert tortoises, as described under measure 16

Qualification: Operators shall be qualified as described in measure 16d.

Injury: Should any desert tortoise be injured or killed, all activities shall be halted, and the authorized biologist immediately contacted. The biologist shall have the responsibility for determining whether the animal should be transported to a veterinarian for care, which is paid for by the project proponent, if involved. If the animal recovers, USFWS is to be contacted to determine the final disposition of the animal; few desert tortoises are returned to the wild.

Report: The equipment operator, or authorized biologist shall keep a tally of all desert tortoises seen, moved, injured or killed during the project. Other required elements are rating the effectiveness of required mitigation, a breakdown of actual habitat disturbance, and suggestions for improving mitigation

Water Ditches: The equipment operator or qualified biologist shall inspect water ditches for desert tortoise burrows before moving or shoveling any soil. If a desert tortoise burrow is present, the water ditch shall be left undisturbed if possible. If the equipment operator inspects water ditches for desert tortoise burrows, he or she shall be adequately trained as described in 16a.

Burrows: If a burrow is occupied by a desert tortoise and avoidance of the burrow is not possible during road maintenance or reclamation activities, the authorized biologist shall make the final determination. Only an authorized biologist may excavate the desert tortoise, following established protocols.

Grading: To avoid building up tall berms that may inhibit desert tortoise movement, the operator shall minimize lowering of the roadbed while grading. Berms higher than 12 inches or a slope greater than 30 degrees shall be pulled back into the roadbed.

Speed Limits: The equipment operator shall watch for desert tortoises on the road whenever driving, transporting or operating equipment. Driving speeds shall not exceed 20 miles per hour, and operating speeds should not exceed 5 miles per hour to allow for adequate visibility.

Special Mitigation for Specific Uses in Wildlife Management Area Units

Mineral Exploration and Development

In addition to mitigation measures described above for general mitigation, the following special mitigation measures shall apply to small mining operations and minor exploration and test drill holes in which the surface disturbance or area from which desert tortoises are to be removed is less than ten acres. Some of these measures may be applied in desert tortoise habitat outside of wildlife management area units as well.

Compliance: A qualified biologist shall be on-site during the initial construction activities or until the area is fenced and cleared of tortoise.

Explosives: If explosives are authorized in any desert tortoise habitat, the BLM's field office biologist shall verbally consult with the appropriate USFWS office to determine what measures shall be required to reduce the potential to take desert tortoises. These measures may include:

- Seasonal restrictions upon the use of explosives
- Temporary removals of desert tortoises from areas potentially at risk during detonation either directly from the explosion or by thrown materials. All handling and storage of desert tortoises for this purpose shall be conducted as described in measure 3 by an authorized biologist.
- Covering of desert tortoise burrows to reduce impacts of flying materials.

Non-Competitive Recreational Events

The following measures shall apply to all vehicle-oriented, dual-sport, and other non-competitive trail events:

Timing: Events in wildlife management area units shall be held during the inactive season for desert tortoises, generally considered being between November 1 and March 1. Routes selected shall avoid impacting other special status plants and animal species. Any course flagging or markers shall be placed on the course not more than two weeks prior to the event and shall be removed within one week after conclusion of the event.

Limits: The event shall be restricted to designated routes and limited to 500 rider participants per event. Participants shall not exceed 30 miles per hour through Category I and II tortoise habitat. They shall be notified of this requirement at the beginning of the event and before the start of the event on any subsequent days. Racing shall be prohibited.

Maps: A map identifying the course shall be furnished to each entrant. The map shall clearly delineate maximum speed limits, authorized campsites, and desert wildlife management area, and shall include a statement cautioning that motorized travel beyond the edge of the roads into undisturbed habitat is strictly prohibited.

Parking: Vehicles shall be parked at the side of the road or areas devoid of any perennial vegetation. Any entrants who abandon the event must exit the course on designated routes or public roads.

Camping: Overnight camping shall be limited to existing campgrounds or designated campsites capable of accommodating a group. A qualified biologist shall survey selected camping areas prior to the event to determine if desert tortoise burrows or other special status plant or animal species are present. Parking associated with vehicle-based camping must occur within 100' of centerline in wildlife management area units in previously disturbed areas, and within 300' of centerline in other tortoise habitat

Trash: Trash and food items shall be removed from and carried out of the area by the participants. The event proponent shall be responsible for assuring that trash and garbage are not left behind.

Injury: Injured tortoises found on the course shall be transported to an approved veterinarian (list provided to event organizers) at the earliest possible time. The proponent shall be responsible for the cost resulting from treatment of desert tortoises whose injuries resulted from the event.

Clearance: An authorized biologist shall sweep the entire course within the wildlife management area within an hour before the event, and in other desert tortoise habitat within 3 hours before the event. In addition, an Authorized Biologist shall travel at the front of the event to ensure that the route is cleared of all desert tortoises. Desert tortoises found shall be moved approximately 100 feet off the course by authorized personnel.

Utility Pipelines and Underground Cables

For construction and maintenance of all pipelines, fiber-optic lines, and other utilities requiring trenching, the following measures shall apply:

Width: Construction rights-of-way shall be restricted to the narrowest possible width.

Exceptions: All project construction and maintenance shall be restricted to the authorized right-of-way. If unforeseen circumstances require expansion beyond the right-of-way, the potential expanded work areas shall be surveyed for desert tortoises.

Access: Vehicular travel shall be limited to the right-of-way. Access to the right-of-way shall be limited to public roads and designated routes. All temporary disturbances should be reclaimed immediately, as part of the project (see restoration below).

Trenches: Open trenches shall be regularly inspected by the authorized biologist at a minimum of three (3) times per day, and any desert tortoises that are encountered shall be safely removed. For small projects, escape ramps are sometimes required. The length of the trench left open at any given time shall not exceed that distance which will remain open for one week or less in duration. The authorized biologist immediately prior to backfilling shall make a final inspection of the open trench segment. Arrangements shall be made prior to the onset of maintenance or construction to ensure that desert tortoises can be removed from the trench without violating any requirement of the Occupational Safety and Health Administration.

Maintenance: Observations of desert tortoises or their sign during maintenance shall be conveyed to the field supervisor and a biological monitor. Employees shall be notified that they are not authorized to handle or otherwise move tortoises encountered on the project site.

Compliance: Sufficient authorized and qualified biologists shall be present during maintenance or construction activities to assist in the implementation of on-site mitigation measures for the desert tortoise and to monitor compliance. The appropriate number of biologists will depend upon the nature and extent of the work being conducted and shall be stated in the right-of-way grant for each particular action, after consultation with the specific resource area office authorizing the action.

Final Assessment: The authorizing agency shall ensure that maintenance or construction activities are confined to the authorized work areas by means of a post-project assessment. The authorized biologist may conduct the assessment. If maintenance or construction activities have extended beyond the flagged work areas, the BLM shall ensure that the project proponent restores these disturbed areas in an appropriate manner.

Restoration: The proponent shall be required to restore disturbed areas in a manner that would assist re-establishment of biological values within the disturbed rights-of-way. Methods of restoration shall include, but not be limited to; road closure, the reduction of erosion, re-spreading of the top two to six inches of soil, planting with appropriate native shrubs, and scattering any bladed vegetation and rocks, where appropriate, across the right-of-way.

Power Transmission

The following mitigation measures shall be implemented during all construction and maintenance of transmission lines:

Surveys: When access along the utility corridor already exists, pre-construction surveys for transmission lines shall provide 100 percent coverage for any areas to be disturbed and within a 100-foot buffer around the areas of disturbance. When access along the utility corridor does not already exist, pre-construction surveys for transmission lines shall follow standard protocol for linear projects.

Access: To the maximum extent possible, access for transmission line construction and maintenance shall occur from public roads and designated routes.

Disturbed Areas: To the maximum extent possible, transmission pylons and poles, equipment storage areas, and wire-pulling sites shall be sited in a manner that avoids desert tortoise burrows.

Restoration: Whenever possible, spur and access roads and other disturbed sites created during construction shall be re-contoured and restored.

Ravens: All transmission lines shall be designed in a manner that would reduce the likelihood of nesting by common ravens. Each transmission line company shall remove any common raven nests that are found on its structures. Transmission line companies must obtain a permit from the USFWS's Division of Law Enforcement to take common ravens or their nests.

Project Reporting

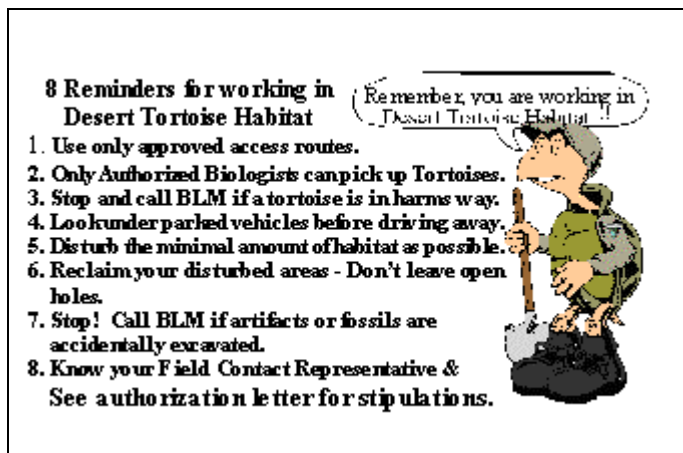
For each project on which the consultation is to be applied, the BLM will transmit a reporting form to the appropriate USFWS field office a minimum of 30 days prior to authorizing the activity. If there is no response after 30 days, the project may be approved.

All existing programmatic consultations for the CDCA are incorporated into this authorization (e.g., small mining, small disturbance, electrical utilities, pipeline maintenance, dualsport, waste site clean-up, etc.).

Each Field Office will report to the California Desert District Office the actual acres disturbed, the number of tortoises moved, and the number of tortoises killed within 30 days of the completion of each project covered under this consultation. The California Desert District Office will report annually on these projects to the Ventura and Carlsbad field Offices of USFWS.

The BLM's California Desert District maintains a tabular and GIS record of all compensation acquisitions.

Figure A.1 – Wallet Card



Report on Proposed Action to be Covered by the Programmatic Consultation on Activities Resulting in Small Disturbances of Desert Tortoise Habitat in the California Desert

Authorization may not be issued until USFWS has 30 days for review and comment. For actions in Inyo, Kern, Los Angeles, and transmontane San Bernardino Counties, send to USFWS, Field Office Supervisor, 2493 Portola Road, Suite B, Ventura, CA 93003. For actions in Riverside, Imperial, and cismontane San Bernardino Counties, send to USFWS, Carlsbad Field Office Supervisor, 2730 Loker Avenue West, Carlsbad, CA 92008. ** Send a copy to BLM California Desert District T&E Coordinator.

Name of Project: _____ BLM Case File No.: _____

Type of Activity: _____

BLM Contact: _____

Date of Preparation: _____

Location of Activity: Base Meridian ___ Township ___ Range ___ Section ___

General locality:

BLM Field Office or Other Jurisdiction:

Tortoise Critical Habitat Unit: _____

Tortoise Recovery Unit: _____

BLM Tortoise Habitat Category (I, II, III): _____

Brief description of project (include site photographs, topographic map of location, and proposed construction dates):

Stipulations to be applied (list specific stipulation numbers from biological opinion):

Appendix B

NEMO Implementation Strategy

Changes to this chapter in developing the FEIS

2. Table B.4 DT DWMA Cattle Leases has been updated based on interim changes in the status of allotments and leases
3. Table B.5 DT DWMA Burro Management has been updated based on changes in the Proposed Plan
4. Table B.6 Route Designation, the implementation schedule for routes of travel in the planning area has been clarified
5. Minor editing

Appendix B

B.0 Implementation Plan

The purpose of this appendix is to define and clarify immediate and long-term commitments and priorities for plan implementation for the primary cooperating agencies. The array of tasks does not include monitoring tasks, which are addressed in specific species recovery strategies and guidance (Appendix A, Appendix F, Appendix I, Appendix J); nor is it necessarily exhaustive at this time. Tasks that are automatically required through regulation, NEPA review, and application processing are not included (e.g., project mitigation, compensation, Section 7 project consultations under state and federal ESAs). Tasks are organized by subjects.

Table B.1 Land Use Planning

		Anticipated Time Frame
Amend land use plans	BLM – Incorporate plan decisions into the CDCA Plan and update/reprint CDCA Plan	3 years
Complete follow-up activity planning	BLM/USFWS, CDFG, local and other interests – Amargosa vole/River ACEC mgt plan Ibid above – Amargosa Wild & Scenic River suitability recommendations; BLM/CNPS, USFWS – Carson Slough ACEC management plan BLM/USFWS, NPS – Clark Mountain Burro Herd Management Area plan	3 years
Change tortoise categories	BLM/USFWS	At the time of the ROD
Change critical habitat boundaries	USFWS/BLM	1 year
Hold implementation progress/action meetings	BLM, USFWS, CDFG – Utilize DAC to gather non-agency input	Annually
Incorporate applicable NEMO maps, coverage's, and decisions into public maps and brochures and provide info to cooperators	BLM/USFWS, CDFG, Counties, CalTrans, NPS, DOD et. al.	1 year

Table B.2 – Standards for Public Land Health¹

		Anticipated Timeframe
Define assessment methods	BLM/ALL	Rangeland health assessment methodologies completed Other methodologies will be adapted as needed from these, based on specific program needs and using the ecological principles of rangeland methodologies.
Complete assessments	BLM, Others with expertise/ALL	5-8 years

¹ Relates to monitoring.

Table B.3 – DT Desert Wildlife Management Areas (DT DWMA): General

		Anticipated Timeframe
Track new surface disturbance using Geographic Info Systems	BLM	Annually by action
Develop Programmatic Rehabilitation Threshold Standards	BLM, USFWS, CDFG/Other interests	1 year
Assess & Track surface disturbance rehabilitation (add progress as GIS attribute: tracks net change)	BLM, USFWS, CDFG/Other interests	Assess by action, Annual tracking by action
Sign/Fence DWMA periphery	BLM	As needed
Amend fire management plan	BLM	2 years (initiate 1 st year)
Implement high priority items of raven control strategy, schedule implementation of other items.	BLM, USFWS, CDFG/Other interests	2 years (initiate 1 st year)
Transportation Access -Construct highway fencing	CalTrans	20 years for 1-15, I-40 (See Appendix A for section priorities). Highway 95 - when upgrade to 4 lanes
Transportation Access - Construct bridges, culverts	CalTrans	Highway 95 - when upgrade to 4 lanes
Retrofit existing large animal guzzlers to protect tortoise	CDFG	Completed, maintenance as needed
Create public education programs	BLM	5 years
Accomplish land tenure	BLM/USFWS, CDFG, Local Communities	As opportunities arise, including in conjunction with compensation actions.

Table B.4 – DT DWMA: Cattle Leases

		Anticipated Timeframe
Grazing decision to remove potential ephemeral grazing use in Piute ephemeral allotment	BLM	Effective immediately pending appeal.
Voluntary relinquishment – remaining allotments with portions within DWMA: Jean, Kessler Springs, Valley Wells, Valley View allotments	Private parties	Standing option
Develop strategy to resolve cattle/tortoise competition – allotments remaining, within DWMA	BLM, USFWS, Lessee	1 year, allotment-specific.
Implement above forage competition strategy	BLM, USFWS, Lessee	2 years
Utilization/Competition Assessments	BLM	Annually
Adherence to Standards/Guidelines Assessment on Valley Wells Allotment	BLM	As prescribed by schedule and priority.
Retrofit cattle guards	BLM	As prescribed by schedule and priority.

Table B.5 – DT DWMA: Burros

		Anticipated Timeframe
Establish census	BLM	Annually in DWMA and other HMA concentration areas until "substantial removal" is accomplished.
Gather remaining burros in the Clark Mountains HMA, including all 3 concentration areas	BLM, USFWS	Focused implementation effort for 5 years. Regular updates thereafter on approved schedule.
Target date to meet final AML, i.e. accomplish substantial removal.	BLM	2006 in DWMA, 2008 in other herd concentration areas.
Hold implementation progress/Action meetings	BLM, USFWS/NPS, Other Interests	Annual

Table B.6 – DT DWMA: Route Designation

		Anticipated Timeframe
Develop route-specific strategies for closed routes (strategies such as signing, barricading, rehabilitation, or combination to exclude access and allow the forces of nature to obliterate them) and limited routes (strategies such as signing, barricading, gating, and level of maintenance) based on specific issues driving closures or limitations.	BLM, USFWS/AII	2 years
Develop local signing strategies: identify areas to be signed "open" and areas to be signed "closed" and determine how best to implement.	BLM, USFWS, CDFG/AII	2 years
Implement routes of travel designations	BLM	Routes of travel shall be designated for all public lands within the planning area by June 2004 or as otherwise agreed to in agreement C-00-0927 WHA. 5 years, based on current ROT designation schedule (closures, limited routes, signing, and rehabilitation, as needed not including ongoing maintenance)
Implement closures first (Those that are based on sensitive resource values such as raptor nests and flowing springs.)	BLM	Initiate 2nd year for highest priority closures.
Increase ranger/warden patrol during high public-use period	BLM	Seasonally as required
Post informational kiosks at major access points to DWMA's depicting access info including area route network, limitations, signing, resource protection info, visitor safety and locations to get more info.	BLM	Major access routes within 1 year, of route designation for an area, secondary access routes in 2nd or 3rd year or as funding permit.
Reprint Desert Access Guides (DAGs) and other printed media (brochures, maps) depicting basic recreational access network and area recreational opportunities.	BLM, Cooperative Mapping Efforts	Initiate 2nd year, Ongoing.
Create additional outreach programs to enhance knowledge of and reasons for designated route network, and to encourage compliance.	BLM/ NPS	5 years
Develop NEMO-specific criteria for route revisions to be evaluated within DWMA's by an interdisciplinary team, consistent with general 43 CFR criteria.	BLM, USFWS, CDFG/ All Interests	2 years

Table B.7 – Amargosa Watershed Issues and Listed Species: Amargosa vole and Multi-species

		Anticipated Timeframe
Implement Recommended Special Management Actions for Recovery of the Amargosa Vole (Appendix H of the NEMO FEIS)	BLM/USFWS, CDFG	Initiate in 1st year. These items will be implemented and/or will provide the foundation for Amargosa vole recovery strategy that will be in Amargosa River ACEC Plan.
Develop Strategy to Track Progress Towards Attaining T&E Recovery Goals	BLM, USFWS, CDFG	1 year for Amargosa vole, Other species as inventories dictate and mechanisms are set up
Display GIS map of the Amargosa River surface watershed and utilize existing and developing information of groundwater aquifers to display on GIS and map a model of area aquifer recharge.	BLM-NARSC/USFWS, NPS, DOE, Other Interested Parties	As part of 2nd year data collection for Amargosa Wild & Scenic River Suitability analysis and ACEC planning effort
Integrate Grimshaw Lake and Amargosa Natural Area ACEC Plans into the Amargosa River ACEC Plan, adding Amargosa vole critical habitat and Upper Amargosa source waters, and adopt or modify existing ACEC strategies to develop a watershed approach for the Amargosa River that responds to T&E species conservation and recovery needs and also recognizes the unique recreational values the Amargosa corridor offers.	BLM Lead/All	1 year to initiate, 2 years to collect any additional data, gather public input, and modify plan. This includes initiating a Plan Amendment for supplemental route designation.
Develop species inventory and monitoring plans, including identifying key travel corridors	BLM/USFWS, CDFG, CNPS, Audubon, Others	2 years for Amargosa vole, federally listed plants and neotropical migratory birds with known/reported nesting locations. As scheduled in Amargosa River ACEC Plan for other species.
Acquire private, SLC lands, as modified or implementing Amargosa River ACEC Plan Land Tenure Strategy and Inyo County policies.	BLM, Local Communities of Inyo County	Continue to pursue existing strategy. Upon adoption of the NEMO Plan, pursue modified strategy to be potentially refined in the Amargosa River ACEC Plan
Initiate Amargosa Wild & Scenic River Suitability Determination Analysis	BLM/Local Inyo County Interests, Friends of the River, NPS, Others	1 year to initiate, 2 years to collect data and develop suitability recommendations report
Accomplish identified Amargosa watershed, riparian restoration, and recreational corridor projects	BLM	10 years - Remove upstream and on-site tamarisk, develop additional habitat enhancements for listed and special status birds and fish, construct and upgrade trailheads and recreational trails, and develop interpretive plan.
Acquire water rights on public lands, consistent with the California Desert Protection Act and other utilizable authorities to maintain and reestablish riparian flow.	BLM	Initiate process immediately upon NEMO approval.

Table B.8 – Other Listed Species: Carson Slough T&E Plants

		Anticipated Timeframe
Implement Recommended Special Management Actions for Recovery of the Ash Meadows Gumplant and Amargosa Niterwort (Ch 2.4.2.2 and App. G of the NEMO Plan)	BLM/USFWS, CDFG	Initiate in 1st year. These items will provide the foundation for T&E plant recovery strategy that will be in Amargosa River ACEC Plan.
Develop species inventory, identify key habitat associations, and develop monitoring plans, including identifying populations at risk.	BLM/USFWS, CNPS	Identify highest priority risks immediately; 2 years to complete.
Construct enclosures or develop other appropriate measures to protect populations identified at risk during surveys. All populations above identified risk thresholds will have monitoring program to follow trends and identify need for more aggressive protection strategies if/when passive strategies are used initially.	BLM/ USFWS, CNPS	Initiate 1st year.
Develop Strategy to Track Progress Towards Attaining T&E Recovery Goals	BLM, USFWS, CDFG	As inventories dictate and mechanisms are set up.
Administratively change the Appropriate Management Level (AML) for wild horses and burros from 28 to 12 horses and 28 to 0 burros.	BLM	With the ROD for NEMO Plan
Acquire water rights on public lands, consistent with the California Desert Protection Act and other utilizable authorities to maintain and reestablish riparian flow.	BLM	Initiate process immediately upon plan approval.
Develop/map wetland habitat and soils inventory for Amargosa River ACEC planning effort, such as key ephemeral wetland patches, mesquite bosques, and undisturbed desert pavement areas.	BLM/USFWS, CDFG, Other Interests	2 years, use information from T&E species inventory to identify key habitat components on which to refocus efforts.
Designate routes of travel in the Carson Slough area	BLM/Inyo County, All	Initiate 1 st year. Complete in 3 years (designations and any closures, signing, rehab in conjunction with Amargosa River ACEC planning)
Develop guidelines for road construction and other surface disturbing activities adjacent to T&E plant populations	BLM, USFWS/Inyo County, Mining Interests, Other Interests	2 years, Adopt in the Amargosa River ACEC: Plan.

Table B.9 – Other BLM-Sensitive Species: Bats

		Anticipated Timeframe
Sensitive bat roosts inventory, including identifying key maternity roosts	BLM	Initiate in 1st year, 3 years
Implement routes of travel designations in the Silurian Hills area utilizing bat roost data collected.	BLM/All	Initiate in 2nd year for at risk maternity roosts. Complete in 5 -8 years (designations and any seasonal or other closures, signing, route rehab).
Construct additional bat gates or other adit access control devices at key bat use sites.	BLM	As Needed
Develop programmatic mitigation strategies for active mining operations and reclamation strategies for active and inactive mining operations to preserve potential for bat use.	BLM/USFWS, Mining Operations	5 years.
Adapt mining programmatic mitigation strategies for other activities that may impact bats or bat habitat, particularly maternity roosts.	BLM/USFWS, Mining Operations	4 years.

Table B.10 – DWMAs, Other T&E, Community Expansion, and Wilderness: Land Tenure Adjustment

		Anticipated Timeframe
Implement Land Tenure Strategy as outlined in Appendix N of the NEMO Plan.	BLM	Overall long-term, as identified in the NEMO Plan for T&E species or as specific land tenure requests are received within the overall framework.
Track land tenure requests and progress by method (add progress as GIS attribute: track net change in land tenure for areas identified for acquisition or disposal)	BLM, coordinated with Counties	Annually, by action

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Appendix C

Description and Strategy For Addressing Major Desert Tortoise Issues

Changes to this chapter in developing the FEIS

6. Updated Section C 4.3 to reflect change in Proposed Plan for WH&B
7. Minor formatting changes from table to text to improve readability

Appendix C

C.0 Description and Strategy for Addressing Major Desert Tortoise Issues

The following tables describe 18 issues (listed below) in desert tortoise conservation. These issues are regarded as significant in the range of the tortoise, but many are relatively unimportant at this time in tortoise management in the Northern and Eastern Mojave planning area. The issues are generally the result of conflicting human uses (e.g. cattle grazing, mineral extraction, vehicle access), natural processes that have strong human influences (e.g., fire, disease, subsidized predation), and management activities (e.g., monitoring, wildlife management).

For each table there is a description of the current situation; this is largely a summary of information in “Current Desert Tortoise Management Situation in BLM-Administered Lands Portion of Northern and Eastern Mojave planning area (Foreman, 1998)”. The description applies to only BLM-administered lands in the NEMO planning area.

The potential effects of the issue on desert tortoise populations are also described. For conflicting activities the effects focus on those that will influence tortoise population density and distribution.

Lastly, the management strategy developed for the NEMO planning area is presented. For brevity, the strategy and rationale reflect only the preferred alternative. Brief summaries of the Desert Tortoise Recovery Plan recommendations are presented for comparison. Following is a list of the 18 issues addressed:

1. Urbanization and Agricultural Development
2. Military Operations
3. Cattle Grazing
4. Wild Horses and Burros
5. Mineral Extraction
6. Utilities and Other Rights-of Ways and Permits
7. General Recreation
8. Recreational Vehicle Riding/Competitive Events
9. Vehicle Access
10. Vandalism and Collecting
11. Vegetation Harvesting
12. Wildlife Management
13. Subsidized Predation
14. Disease
15. Fire
16. Alien Plants
17. Drought
18. Monitoring

C.1 Issue: Urbanization and Agricultural Development

Scope of Issue: This issue includes residential, commercial (e.g., stores and gas stations), industrial (e.g., power plants), and agricultural development.

C.1.1 Current Situation

Current Situation in NEMO Planning Area: Most residential development is focused around the small towns of Needles, Baker, and Kelso; only Kelso is near a current or proposed tortoise DWMA. Commercial development occurs at these towns and at other small service areas such as Essex, Chambliss, Goffs, Ivanpah, Cima, and various Interstate Highway exits; development at these sites is generally limited to a few buildings and a few acres. Housing and services associated with the MolyCorp Mine at Mountain Pass are larger but are above than significant tortoise habitat. Recent development around and near Primm (Stateline), Nevada, has resulted in a golf course and increased recreational use in northern Ivanpah Valley, within BLM Category I tortoise habitat and near critical habitat. There is virtually no agricultural development in or near important tortoise habitat, but interest has been expressed for some development in northern Piute Valley, which is critical habitat.

C.1.2 Effects

Primary Effects: Where it occurs within tortoise habitat, there is a direct loss and alteration of habitat value as plant cover is removed and compaction of soils occurs. Illegal trash dumping (see Issue: Landfills and Waste Sites) around towns and residences as well as agricultural crops and irrigation water also artificially subsidizes raven populations (also see Issue: Subsidized Predation).

Other Effects: Tortoises may be killed directly by vehicles or dogs. Developments may promote introduction and spread of alien plants.

Information Needs: There is a need for additional research on the urban/wildland interface and ecological effects there.

C.1.3 Strategy

Strategy in Preferred Alternative for Addressing Issue: Cumulative new surface disturbing projects on BLM lands in each tortoise DWMA would be limited to 1 percent of BLM lands in that area. The size of each project would be minimized, and other mitigation measures would be applied to limit effects. Compensation would assist in accomplishing other tortoise conservation objectives (e.g., consolidation and rehabilitation of habitat). No vegetation harvesting would be allowed in tortoise DWMA. Lands will not be available for disposal under various land disposal laws (e.g., agricultural land laws, recreation and public purposes, FLPMA leases and sales, and airports).

Rationale for Selected Strategy: Much of the residential, commercial, industrial, and agricultural development will occur on private inholdings. Therefore, land consolidation efforts in key areas and retention of existing lands may help limit the effects of these activities in DWMA. Otherwise, control of these activities by BLM is negligible and is primarily limited to mitigation measures applied to local utilities.

Recovery Plan Recommendations: No agricultural clearing would be allowed in tortoise DWMA. New surface disturbances that diminish tortoise habitat value would be prohibited. Uncontrolled dogs out of vehicles would be prohibited. Fencing would be added around Ivanpah Dry Lake and Stateline to keep vehicles out of the DWMA. DWMA boundaries would be signed around Nipton and other settlements.

C.2 ISSUE: Military Operations

Scope of Issue: This issue includes activities on military bases and temporary operations off of bases. Also included are low-level aircraft flyovers.

C.2.1 Current Situation

Current Situation in NEMO Planning Area: There are currently no military installations or bases in the NEMO Planning area. One alternative for the proposed expansion of Ft. Irwin would be eastward into Silurian Valley. This area is not in critical habitat or in a proposed tortoise DWMA.

C.2.2 Effects

Primary Effects: Tank maneuvers during World War II and in 1964 disturbed significant areas of the desert, including training areas in Piute Valley. The residual effects of crushing of vegetation and the compaction of soil remain after 50 years. However, no new military operations within tortoise DWMA are expected to occur.

Other Effects: Even though toxic substances are suspected as a causative agent for tortoise shell diseases, the effects of fuel and chemical spills associated with military activities, if any, are unknown.

Information Needs: The relationship between shell diseases and various toxic substances, if any, needs to be determined.

C.2.3 Strategy

Strategy in Preferred Alternative for Addressing Issue: No new military activities are expected for the DWMA.

Rationale for Selected Strategy: Military maneuvers would be incompatible with tortoise conservation.

Recovery Plan Recommendations: Military maneuvers that disturb habitat would be prohibited in tortoise DWMA.

C.3 Issue: Cattle Grazing

Scope of Issue: This issue includes only cattle grazing; there is no sheep grazing in the NEMO planning area.

C.3.1 Current Situation

Current Situation in NEMO Planning Area: About 114,500 acres of BLM land in the Piute Valley Allotment are in the Piute-El Dorado Critical Habitat Unit. About 137,100 acres of BLM land in the Valley Wells, Jean Lake, Valley View, and Kessler Springs Allotments are in the Ivanpah Critical Habitat Unit. All allotments except Piute Valley are perennial/ephemeral; Piute Valley is ephemeral only. A programmatic biological opinion on cattle grazing in the CDCA specifies interim terms and conditions for mitigating cattle grazing effects on desert tortoise. These measures specify minimum forage utilization levels, limit grazing seasons for Jean Lake and Valley Wells Allotments, and restrict grazing areas in Valley View, and Piute Valley Allotments.

C.3.2 Effects

Primary Effects: In years of low annual plant production, cattle can compete with tortoises for food. There is forage overlap even in years of abundant forage, but there is probably no competition in these years. It is likely that past cattle grazing has altered the perennial plant composition. Study in the East Mojave has documented that cattle may trample and kill or injure tortoises or trample tortoise burrows, destroying the burrow and possibly entombing a live tortoise. Juveniles are at greater risk because they have soft shells and shallower burrows. The introduction and spread of alien grasses in the Planning area may be partially due to cattle grazing.

Other Effects: Hoof action may also increase compaction and reduce ground cover resulting in increased erosion and decreased water infiltration; effects are most severe around troughs and corrals and less severe in lightly grazed areas further from water. An overall reduction in perennial plant cover from grazing may reduce tortoise cover sites and may alter soil temperature regimes both for plants and tortoises.

Information Needs: The effect of grazing under varying stocking rates needs further analysis. Additional information on the effects of cattle grazing on cryptogamic crusts is needed.

C.3.3 Strategy

Strategy in Preferred Alternative for Addressing Issue: Grazing allotments would be relinquished at the request of the lessees (e.g., a conservation buyer). The terms and conditions of the biological opinion would be adopted as permanent grazing stipulations. Ephemeral grazing use would be unavailable in ephemeral allotments within DWMAs. In years of low ephemeral forage production, cattle would be substantially removed from the tortoise DWMAs. No temporary non-renewable perennial authorizations would be made in tortoise DWMAs.

Rationale for Selected Strategy: The strategy continues the strong mitigation measures currently in place. In addition, it allows the elimination of current grazing operations to promote tortoise conservation if a conservation buyer desires it. It also reduces potential competition between cattle and tortoises in dry years.

Recovery Plan Recommendations: The Recovery Plan recommends the complete elimination of cattle grazing in tortoise DWMAs.

C.4 Issue: Wild Horses and Burros

Scope of Issue: Only burros, and no wild horses, occur in tortoise habitat in the Planning area.

C.4.1 Current Situation

Current Situation in NEMO Planning Area: The Clark Mountain Herd Management Area was designated in the CDCA Plan for retention of burros. The appropriate management level (AML) was set at 44; current populations are at about 150 burros after a recent removal of about 150. The Clark Mountain HMA includes about 85,000 acres (13%) of the Ivanpah Critical Habitat Unit. In addition, two concentration areas are located on the east side of the Clark Mountains, outside of the Clark Mountain Herd Management Area but within the larger Clark Mountain Herd Area. These two concentration areas in Northern Ivanpah Valley currently are designated for no retention of burros. An additional population of approximately 126 burros occupies the two concentration areas. Drift of burros between the concentration areas and the HMA across the Clark Mountains was fairly regular until the National Park Service fenced the higher altitude springs. The Dead Mountains Herd Management Area as designated for no retention of burros. The AML was set at 0, but about 30 burros occur there now. The Dead Mountains HMA includes about 6,600 acres (1%) of the Piute-El Dorado Critical habitat Unit.

C.4.2 Effects

Primary Effects: Impacts are presumably similar to those described for cattle grazing; however, there are no studies describing the impacts on desert tortoise.

Other Effects: Presumably similar to those described for cattle grazing.

Information Needs: Information on the preferred foods of burros and on potential forage competition with desert tortoise at varying burro-stocking rates is needed.

C.4.3 Strategy

Strategy in Preferred Alternative for Addressing Issue: Burros would be substantially removed from the Clark Mountains HMA. Existing strategies to remove burros from the Clark Mountain Herd Area concentration areas and Dead Mountains HMA would be implemented to prevent repopulation of these and adjacent DWMA areas. A monitoring strategy would be developed to assess progress in reducing burro population.

Rationale for Selected Strategy: Impacts of competition, especially in years of low annual production, and trampling would be eliminated.

Recovery Plan Recommendations: The Recovery Plan recommends the complete elimination of burros from tortoise DWMA's.

C.5 Issue: Mineral Extraction

Scope of Issue: This issue includes all mineral resource classifications - metallic, industrial, construction, and energy. It includes all mineral disposal classifications - locatable, leasable, and salable.

C.5.1 Current Situation

Current Situation in NEMO Planning Area: Those portions of the Planning area within wilderness are withdrawn from mineral entry excepting valid existing rights; new leases and sales are not allowed in wilderness. About 44,000 acres of critical habitat in the Planning area are in five wilderness areas. For mineral exploration and small mining operations under 10 acres, the BLM has received from USFWS a programmatic biological opinion. It gives terms and conditions for mitigating and compensating impacts on desert tortoise. For larger operations, project-specific stipulations are developed through consultation with USFWS. There are currently no active mining claims in critical habitat in the NEMO Planning area. There are 118 inactive (mostly small and historic) mining operations in critical habitat (16 in Piute-El Dorado and 102 in Ivanpah Critical Habitat Units). Most large mining operations are in mountains (e.g., Mountain Pass Mine, Coliseum Mine, Morning Star Mine), but access may cross critical tortoise habitat. Although there was once some interest in oil and gas exploration in Ivanpah Valley, interest is now very low. Waste spills from Mountain Pass Mine have resulted in habitat loss for clean-up and monitoring well fields.

C.5.2 Effects

Primary Effects: Exploration activities may disturb or crush small amounts of habitat, commonly less than an acre. Mining development commonly disturbs more habitats and results in removal of vegetation and disturbance of soils. Reclamation of modern mine sites is often better than other disturbances due to growing of nursery plants, replacement of topsoil, and irrigating. Vehicles on access roads to mine sites or off-road in exploration may run over and kill or injure tortoises.

Other Effects: In larger operations, residential development may occur (See Issue: Urbanization and Agricultural Development). Access roads may fragment populations. Toxins emitted through fugitive dust or spills may contaminate large areas; the effects are not well understood but are implicated in shell diseases.

Information Needs: The relationship between shell diseases and various toxic substances, if any, needs to be determined. Restoration techniques need refinement.

C.5.3 Strategy

Strategy in Preferred Alternative for Addressing Issue: Cumulative new surface disturbing projects on BLM lands in each tortoise DWMA would be limited to 1 percent of BLM lands in that area. The size of each project would be minimized, and other standard mitigation measures would be applied. Compensation would assist in accomplishing other tortoise conservation objectives (e.g., land acquisition, habitat rehabilitation). No additional withdrawals are proposed. Changes to Class L would necessitate plans of operation even for small mines. Sale of materials at new or expanded pits would be allowed.

Rationale for Selected Strategy: Large-scale mining operations are not anticipated in the DWMA's in the NEMO Planning area. Small mining operations are small and usually temporary, and existing mitigation techniques are sufficient. Oil and gas development in Ivanpah Valley would be discretionary.

Recovery Plan Recommendations: Ivanpah Valley would be withdrawn from mineral entry and leasing. Mining would be allowed if carefully mitigated. New surface disturbing activities that significantly diminish tortoise habitat value would be prohibited.

C.6 Issue: Utilities and Other Rights-of-Ways and Permits

Scope of Issue: This issue includes Utility Corridors designated in the CDCA Plan and the resulting transmission facilities and service roads. It includes construction of new facilities and maintenance of existing facilities. Also included are various permitted activities such as filming and apiary sites.

C.6.1 Current Situation

Current Situation in NEMO Planning Area: Utility Corridors D and BB cross the Ivanpah Critical Habitat Unit, and Corridors E and R cross the Piute-El Dorado Critical Habitat Unit. Even though about 112,500 acres of critical habitat are in these corridors, the actual acreage occupied by utilities is much smaller. Each corridor includes electric transmission lines, pipelines, and fiber-optic cables. Some utilities occur outside the corridors, but no additional facilities can be constructed alongside them. All utilities have service roads. Mitigation and compensation measures are applied to both construction and maintenance activities. Restoration has been poor, especially for pipelines. The BLM has programmatic biological opinions covering the maintenance of most utility systems. There is increasing demand for communication sites. Most of these are located on high points outside of critical habitat, and acreage disturbed is small but permanent. There are few requests for other special use permits in the Planning area.

C.6.2 Effects

Primary Effects: Habitat loss in construction is often severe. Fiber-optic cables have often been placed in or along service roads. Pipeline construction can denude large strips up to 200 feet wide, and habitat restoration is very slow with current methods. Direct mortality during construction can occur and was very high on at least one pipeline project. Direct mortality can also occur in utility inspection and repair.

Other Effects: Service roads increase human access with impacts associated with various legal and illegal activities. Transmission towers create nesting and perhaps foraging perches for ravens that prey on hatchling and juvenile tortoises.

Information Needs: Site restoration techniques need to be improved. The effects of utilities on raven predation and methods for reducing it are not well known.

C.6.3 Strategy

Strategy in Preferred Alternative for Addressing Issue: Existing utility corridors would be retained, and new utilities would be placed within them. Cumulative new surface disturbing projects on BLM lands in each tortoise DWMA would be limited to 1 percent of BLM lands in that area. The size of each project would be minimized, and other standard mitigation measures would be applied to limit effects. Compensation would assist in accomplishing other tortoise conservation objectives (e.g., land acquisition, habitat rehabilitation).

Rationale for Selected Strategy: The effects of utilities on tortoise conservation and other resources would be restricted to existing, discrete locations.

Recovery Plan Recommendations: New access would not be developed in DWMA's. Disturbed areas would be restored to pre-disturbance condition. New surface disturbing activities that diminish tortoise habitat value would be prohibited. Fencing with underpasses would be constructed along the Union Pacific Railroad.

C.7 Issue: General Recreation

Scope of Issue: This issue includes hunting, shooting, nature study, rock collecting, rock climbing, recreational touring, and other activities. Camping is not included (see Issue: Access), and motorcycle riding and competitive events are not included (see Issue: Riding and Competitive Events).

C.7.1 Current Situation

Current Situation in NEMO Planning Area: Almost all recreation in the desert includes a vehicle as a means of accessing a remote area. BLM lands are generally available for all forms of such destination recreation. Wilderness areas are available only for non-mechanical recreation and activities with low user density and low impacts by foot or horseback. Various public education outreach programs and printed materials have been developed to promote, enhance, and direct recreational opportunities and to gain visitor compliance with conservation of resources. Recreation use in tortoise critical habitat in the Planning area is relatively low and widely dispersed compared with other desert areas. There are no developed campgrounds in or near critical habitat.

C.7.2 Effects

Primary Effects: Legal recreational activities probably have little or no effect on desert tortoise. Illegal activities such as shooting or collecting tortoises may have seriously reduced populations in some areas (see Issue: Vandalism and Collecting). Evidence for shooting and the low level of recreation use indicate that these illegal activities are not significant in the NEMO Planning area.

Other Effects: None.

Information Needs: No significant needs.

C.7.3 Strategy

Strategy in Preferred Alternative for Addressing Issue: General recreational activities would be allowed. Public education programs and ranger contacts would be continued and increased.

Rationale for Selected Strategy: Impacts, if any, are not significant. General recreation is widely dispersed and has low impacts usually associated with access.

Recovery Plan Recommendations: General non-consumptive (e.g., hiking, horseback riding) recreational activities would be allowed. Discharge of firearms except for certain hunting (i.e., from September through February) would be prohibited. New visitor centers, campgrounds, and other visitor facilities would be allowed where appropriate. An environmental education program would be developed.

C.8 ISSUE: Recreational Vehicle Riding and Competitive Events

Scope of Issue: This issue includes motorcycle riding on routes, organized motorcycle trail-riding events, and competitive speed events.

C.8.1 Current Situation

Current Situation in NEMO Planning Area: Competitive speed events may be allowed on approved routes of travel by permit. In multiple-use class L, only short distances and no start, finish, pit, or spectator areas are allowed. Occasionally, motorcycle trail-riding events have been permitted in critical habitat; the BLM has a programmatic biological opinion from USFWS covering such events. These events are few, and they are permitted only in the winter. The CDCA Plan designated one long-distance, point-to-point, competitive event corridor through what is now critical habitat. This “Barstow-to-Vegas” Corridor passes through the Ivanpah Critical Habitat Unit (in Shadow Valley). No race has been authorized in the Corridor for many years due to issues of competitor and spectator compliance and the listing of the desert tortoise. There is one off-highway vehicle free-play area in the NEMO planning area. Dumont Dunes OHV Area is 10,058 acres in size, and was doubled in size when the management plan was adopted in 1990. The area is a dune environment adjacent to the lower Amargosa River. There is no desert tortoise habitat in the immediate area. It is the most popular destination for recreational vehicle riding and large group camping in this part of the desert. Competitive events are limited in size and scope, based on the relatively small size of the OHV area.

C.8.2 Effects

Primary Effects: Vehicles, especially those in speed events, can run over and kill or injure tortoises. Organized trail rides have stipulations to reduce the likelihood of tortoise mortalities. In speed events, vehicles often leave the traveled portion of the course resulting in route-widening, vegetation loss, crushing of tortoises and burrows, increased compaction, loss of soil and nutrients, and destruction of cryptogamic crusts. Compaction of soils reduces water absorption, increases surface temperatures, and increases the difficulties in digging burrows. Destruction of vegetation reduces tortoise protection from predators and weather and reduces annual plant habitat suitability and productivity. When winds are moderate to high, racers leave the marked course entirely to avoid wind-blown dirt.

Other Effects: The spread of alien plants is aided by surface disturbance and, possibly, fugitive dust along route edges. New disturbance may destroy cryptogamic crusts that are important in reducing erosion, controlling water infiltration, regulating soil temperatures, fixing atmospheric nitrogen, pre-adapting soils for plant growth, and accumulating organic matter. Campsite debris associated with large organized or unorganized groups can provide food sources for ravens that forage miles from their home territories, if appropriate measures are not taken.

Information Needs: Additional information is needed on the effects of toxins from vehicle exhaust. The effects of increases in fugitive dust on cryptogamic crust, soil nutrient content, and annual plant production are not known.

C.8.3 Strategy

Strategy in Preferred Alternative for Addressing Issue: No competitive events would be allowed in tortoise DWMA or in other desert tortoise habitat in the planning area. Competitive events would be restricted to OHV Open Areas and courses dedicated for such use in the CDCA Plan. The Barstow-to-Vegas course would be eliminated from the CDCA Plan and would not be one of these courses. Organized trail-riding events would be allowed outside the tortoise season on open and seasonally limited routes with standard mitigation measures applied. No cross-country travel would be allowed.

Rationale for Selected Strategy: The negative effects of competitive events are incompatible with tortoise conservation. Effects of organized trail-riding events, properly stipulated (e.g., only between November 1 and March 1, pre-event sweep and lead rider, 500 riders maximum), are similar to other vehicle use of routes in desert tortoise habitat.

Recovery Plan Recommendations: Competitive and organized events would be prohibited in DWMA's. No cross-country travel would be allowed. Fencing would be added around Ivanpah Dry Lake and Stateline area to keep vehicles out of the DWMA's. DWMA boundaries would be signed around Nipton and other settlements.

C.9 Issue: Vehicle Access

Scope of Issue: This issue includes legal use of authorized routes of travel on the public route network and on State and Federal Highways. It also includes stopping, parking, and camping along these routes. It does not include use of utility service roads or access to permitted activities, such as mining.

C.9.1 Current Situation

Current Situation in NEMO Planning Area: Wilderness areas have no general motorized access by the public. Outside of wilderness, legal routes of travel on public lands include all existing routes and all washes showing signs of use. Route density is low relative to other desert areas. Stopping, parking, and camping on public lands are allowed within 300 feet of any route of travel. No BLM routes in tortoise habitat are paved. Most routes are maintained by repeated use; a few are maintained by blading. A few paved State and Federal highways pass through tortoise critical habitat - Interstate 40, Highway 95, and Goffs Road in the Piute-El Dorado Critical Habitat Unit and Interstate 15, Excelsior Mine Road, and Nipton Road in the Ivanpah Critical Habitat Unit. Some of these carry very heavy traffic.

C.9.2 Effects

Primary Effects: Tortoises can be crushed or injured by vehicles on roads. On paved highways where vehicle speeds and traffic volume are high, virtually no tortoise may pass over the highway. Tortoise populations are severely depressed for at least 0.5 to 1 mile along heavily used highways. This not only reduces tortoise overall populations, but fragments the populations.

Other Effects: Toxins emitted from vehicle exhaust may be a causative agent for shell diseases. Highways also serve as dispersal corridors for alien plants. Roadkills of reptiles and mammals serve as raven food, thereby artificially subsidizing the populations of an important tortoise predator (see Issue: Subsidized Predation). Fires occur most commonly along paved highways; fires promote alien plants, decrease native perennial cover, and kill tortoises (see Issue: Fire).

Information Needs: The effects of varying levels (i.e., light to heavy) of vehicle use of routes on desert tortoise populations are not understood. The effects of legal and illegal activities at campsites along routes (e.g., collecting, vandalism of tortoises, trash, pets) are not known. The effects of toxins in vehicle exhaust are not well understood.

C.9.3 Strategy

Strategy in Preferred Alternative for Addressing Issue: All routes in tortoise DWMA's would be designated open, closed, or limited use. Closed routes would be rehabilitated. Interstate highways and other heavily traveled, paved highways through tortoise DWMA's (i.e., I-15, I-40, Highway 95, Nipton Road) would be fenced to exclude tortoise access. Culverts to allow passage across these highways would be provided. Stopping, parking, and camping would be allowed only within 100 feet of route centerline or within banks of wash.

Rationale for Selected Strategy: The CDCA Plan calls for the designation of routes on public lands throughout the CDCA. Fencing of highways has been shown to greatly reduce the mortality of tortoises and other reptiles and mammals.

Recovery Plan Recommendations: Routes of travel would be designated individually. Fencing and culverts would be required along most paved highways (i.e., I-15, I-140, Highway 95) in critical habitat. Parking and camping would be restricted to designated sites. Speeds would be limited on designated routes.

C.10 Issue: Vandalism and Collecting

Scope of Issue: This issue refers to the illegal harming or collecting of desert tortoises. It does not include the authorized handling of tortoises to remove tortoises from a hazardous site as project mitigation.

C.10.1 Current Situation

Current Situation in NEMO Planning Area: Although tortoises are sometimes shot, the incidence of gunshot is very low in the NEMO Planning area. Tortoises are collected for pets and for cultural observances. The amount of collecting and its significance is unknown, but the high number of tortoises in captivity is one indication that collecting may be occurring. However, it is believed to be minimal in the NEMO Planning area due to remoteness.

C.10.2 Effects

Primary Effects: Both collecting and vandalism remove tortoises from the population. Any such artificial mortality is potentially significant due to the tortoise's very low reproductive capacity.

Other Effects: In some areas immigrants seek tortoises for cultural observances. Burrows are destroyed in large numbers in the search for tortoises. This potentially exposes tortoises to increased predation and exposure to other natural elements.

Information Needs: There is no information on the amount of tortoise collecting occurring or its relative significance compared to other mortality factors.

C.10.3 Strategy

Strategy in Preferred Alternative for Addressing Issue: Hunting would be permitted according to State regulation. Public education and law enforcement would be increased.

Plan Recommendations: Discharge of firearms, except for gamebird and big game hunting would be prohibited in the DWMA's. An environmental education program would be developed. Law enforcement would be increased to reduce illegal activities.

C.11 Issue: Vegetation Harvesting

Scope of Issue: This issue includes the authorized sale and illegal harvesting of whole plants or plant parts.

C.11.1 Current Situation

Current Situation in NEMO Planning Area: A permit is required in the CDCA for all vegetation harvesting except dead-and-down wood for campfire use. According to current BLM instructions in the CDCA, only creosote stems or salvage plants may be sold until an environmental assessment is prepared (none have been prepared for the NEMO Planning area). Only salvage from areas to be disturbed is currently considered and only if the plants are not needed for project restoration. Some illegal harvesting of Mojave yucca and barrel cactus has occurred in the Piute and Fenner Valleys.

C.11.2 Effects

Primary Effects: Sales of plant parts for the floral industry if properly mitigated and restricted should have little or no effect on vegetation resources or desert tortoise. Commercial harvesting of yuccas can reduce bird populations. Illegal harvesting can eliminate key tortoise forage species, such as cactus.

Other Effects: Illegal harvesting usually involves illegal cross-country travel by trucks that damage habitat.

Information Needs: None.

C.11.3 Strategy

Strategy in Preferred Alternative for Addressing Issue: Increased law enforcement would attack illegal harvesting. Permits for vegetation harvesting would be limited to salvage projects. Collection of dead-and-down wood (except Joshua trees and other yuccas) for personal campfire use would be allowed.

Rationale for Selected Strategy: The floral industry's needs for plant parts can be met in other areas. Commercial harvesting (e.g., yucca) has undesirable, negative effects on wildlife.

Recovery Plan Recommendations: No vegetation harvesting would be allowed except by permit (currently required throughout CDCA).

C.12 Issue: Wildlife Management

Scope of Issue: This includes various activities or habitat facilities (e.g., small game guzzlers) to enhance or stabilize wildlife (especially upland gamebird) populations.

C.12.1 Current Situation

Current Situation in NEMO Planning Area: There are numerous small game guzzlers in tortoise habitat in the NEMO Planning area. Most, if not all, have been modified so that animals, including tortoises, do not become entrapped.

C.12.2 Effects

Primary Effects: Tortoises can become entrapped and die due to plastic entry/exit ramps that are too slick.

Other Effects: Tortoise predators, such as coyote and common raven, can drink from the guzzlers. Where water limits these predators, their populations could be enhanced leading to increased tortoise predation (see Issue: Subsidized Predation). Cameras at guzzlers in the southern Colorado Desert have shown that many species use guzzlers; though present in that area, raven use has not been recorded. Ravens are known to use cattle troughs in the NEMO Planning area.

Information Needs: Additional information is needed on the use of small game guzzlers by coyotes and ravens and on the effects on their populations.

C.12.3 Strategy

Strategy in Preferred Alternative for Addressing Issue: Modify all small game guzzlers to facilitate exit by tortoises.

Rationale for Selected Strategy: The strategy addresses the known problem.

Recovery Plan Recommendations: Guzzlers and other wildlife facilities would be allowed. Enhancement of native gamebird populations would be allowed.

C.13 Issue: Subsidized Predation

Scope of Issue: This issue includes the predation of tortoises by predators whose populations are subsidized, and thereby elevated, by human activities that provide food or other essential habitat elements. Major predators include common ravens, coyotes, and domestic or feral dogs.

C.13.1 Current Situation

Current Situation in NEMO Planning Area: Raven populations are somewhat elevated in the NEMO Planning area, but not as much as the West Mojave. Raven numbers around Stateline near the Ivanpah Critical habitat Unit are likely to continue to increase with development there. Little is known about coyote populations in the planning area. Feral and domestic dogs are not known to be a problem in the NEMO Planning area. The only authorized solid waste landfills are local operations at Baker and Needles; both are some distance from critical habitat. Unauthorized public and open community dumps exist at eight sites, all near critical habitat. Some of these have been closed, and efforts are underway to close the remaining in favor of regional landfills. Roadkills, especially on well-traveled paved roads (e.g., Interstate Highways 15 and 40 and State Highways 66 and 95), provide food for ravens and coyotes. Multiple transmission line systems are present in all utility corridors in both the Ivanpah and Piute-El Dorado Critical Habitat Units; raven use of these towers for nesting has been documented.

C.13.2 Effects

Primary Effects: The subsidizing of tortoise predator populations results in increased mortality to tortoises, especially to hatchling and juvenile tortoises less than 100 mm in length (usually less than 7 years of age). Both ravens and coyotes are known to forage at dumps and landfills, especially those where trash is not covered properly. Roadkills similarly provide food for predators; most relevant information is from highway fencing studies. The incidence of nesting on transmission towers in the NEMO Planning area occurs at a low level.

Other Effects: None.

Information Needs: The relationship between raven populations that actually forage at landfills and dumps and those that prey on tortoises away from these sites is not well understood. The movements of ravens on a daily and seasonal basis (i.e., migratory behavior) are not known. Although highway fencing studies have quantified roadkills on some highways, the utilization by and importance of these roadkills to predators on heavily traveled highways is not known.

C.13.3 Strategy

Strategy in Preferred Alternative for Addressing Issue: No new landfills would be authorized by BLM in the DWMA. Existing unauthorized dumps would be closed and reclaimed. The BLM would participate in regional raven depredation control programs. Major highways would be fenced to reduce Roadkills (see Issue: Vehicle Access).

Rationale for Selected Strategy: Elimination of unauthorized dumps in and near tortoise habitat and reduction of highway roadkills should aid in returning raven and coyote populations to natural levels.

Recovery Plan Recommendations: No new landfills would be allowed in DWMA. Existing unauthorized dumps would be closed and reclaimed. Raven population control would be implemented. Dogs would be required to be on leashes in DWMA.

C.14 Issue: Disease

Scope of Issue: At least three diseases, and possibly others, are affecting wild populations of desert tortoise.

C.14.1 Current Situation

Current Situation in NEMO Planning Area: The three main diseases affecting wild tortoise populations are upper respiratory tract disease (URTD), cutaneous dyskeratosis, and shell necrosis; the last two are often referred to collectively as shell diseases. Animals from study plots near Goffs and in Ivanpah Valley in the Mojave National Preserve have tested positive for URTD. Infection rates in samples have varied from year to year ranging from 5-39 percent at Goffs and 9-62 percent at Ivanpah Valley. High incidences of URTD occur in captives at Needles and Las Vegas just outside the planning area. Cutaneous dyskeratosis has been common in recent years at study plots in Shadow Valley, in Ivanpah Valley, and near Goffs (highest incidence). Environmental toxicants have been implicated in shell diseases.

C.14.2 Effects

Primary Effects: Large die-offs in the West Mojave have been largely attributed to URTD, and similar die-offs on Chuckwalla Bench have been attributed to shell diseases. Similar die-offs can be expected in the pin the future. At a minimum, diseases increase physiological stress that can result in starvation or dehydration especially during drought.

Other Effects: Disease may make sick animals lethargic or weak predisposing them to predation or exposure to weather.

Information Needs: Additional information is needed on the epidemiology of all diseases of wild tortoises. Additional information is needed on the causative agent of shell diseases. The importance of environmental toxicants in tortoise health has not been clarified. The importance of nutrition, especially relative to alien plants, in recovery rates of sick tortoises is not known.

C.14.3 Strategy

Strategy in Preferred Alternative for Addressing Issue: The strategy would continue 1) disease research programs, 2) prohibitions on reintroduction of captive tortoises into the wild, 3) education of the public about the disease issue and particularly the prohibition on release of captives, and 4) allowing only local relocation of tortoises in project mitigation.

Rationale for Selected Strategy: The only known URTD defense is to inhibit the spread by restricting the relocation of infected tortoises and to limit physiological stress by maintaining habitat in good condition.

Recovery Plan Recommendations: Research programs on disease would continue. Relocations in projects would be localized.

C.15 Issue: Fire

Scope of Issue: This issue includes both the direct effects of burning the vegetation and the effects of fire suppression activities. Both natural and man caused fires are included.

C.15.1 Current Situation

Current Situation in NEMO Planning Area: Fire occurrence in tortoise habitat in the NEMO Planning area is relatively low, averaging about one fire per year. Fires below 3,000 feet are usually man caused, occur along highways, and rarely exceed 1 acre in size. Above 3,000 feet, fires are mostly ignited by lightning strikes and are usually less than 10 acres in size. The BLM has a *Fire Management Activity Plan for the California Desert*. It includes fire suppression guidelines for critical habitat and other tortoise habitat. The intent is to limit the fire size without unnecessarily disturbing habitat. Post-suppression restoration is also implemented.

C.15.2 Effects

Primary Effects: Tortoises can be killed directly by fires. The small size of fires in the Planning area limits the amount of mortality. Fires eliminate perennial plants used by tortoises as food and cover. If the fire is small, surviving tortoises may be able to move outside of the burned area for food and cover. Burned areas provide opportunity for the invasion and establishment of alien plants, perhaps degrading forage value over a wider area than the burn itself. Surface disturbance caused by equipment, if any, used in fire suppression would add to the habitat loss and alien plant invasion.

Other Effects: As a part of fire suppression, unburned fingers and islands between burned areas and firebreaks (i.e., roads) are sometimes burned to prevent flare-ups. This can increase the size of burned area.

Information Needs: Although some research has been conducted, there is much yet to learn about the relationship of fire and the spread and establishment of alien plant species.

C.15.3 Strategy

Strategy in Preferred Alternative for Addressing Issue: Suppression would include a mix of aerial attack, hand tools, and foam or fire retardant with engines restricted to roads unless life or properties are threatened. Post-suppression would include the obliteration of vehicle tracks off of roads, if any. Backfires and burning of unburned fingers and islands would be discouraged in DWMA's.

Rationale for Selected Strategy: There is a need to limit the burn size while limiting surface disturbance by equipment.

Recovery Plan Recommendations: Use of minimum impact fire suppression methods and restoration of disturbed areas would be required.

C.16 Issue: Alien Plants

Scope of Issue: This issue includes the effects of alien plants on tortoises.

C.16.1 Current Situation

Current Situation in NEMO Planning Area: The distribution of alien plant species has not been mapped in the Planning area. Most are highly competitive, and have the potential to replace native species. Many are associated with human disturbance and spread along corridors where soil and plant disturbance occurs, such as along streams, washes, roads, and utility lines. Among the most widespread in the Mojave Desert are Mediterranean (split) grass, various brome grasses, and filaree. Moroccan mustard has been spreading rapidly in recent years.

C.16.2 Effects

Primary Effects: The invasion of alien plant species has greatly altered plant composition in some areas. This could potentially effect tortoise populations as thermal cover and forage are modified. Although many alien plants have nutritional value comparable to native plants, there is a reduction in diversity in the diet. Some alien plants, such as Mediterranean grass create a dense ground cover that carries fire more readily. Although fires have been small and few in number in the past in the planning area, they may become larger as alien plants increase (see Issue: Fire).

Other Effects: As plant species composition is altered, changes can be expected in other ecosystem elements, such as animal community composition, soil structure and chemistry, and soil and surface hydrology.

Information Needs: The effects of alien plants on ecosystem processes and soil chemistry and thermodynamics are not known. The mutual effects of alien plants and fire have been studied, but much is not known. The nutritional value of many alien plants is known, but the overall effects on tortoise diet and health is not known. Aside from minimizing disturbances, methods for controlling the invasion of new alien plants species and the spread of all alien plants are not known. Methods for restoring vegetation and minimizing the invasion of alien plants in project areas needs improvement.

C.16.3 Strategy

Strategy in Preferred Alternative for Addressing Issue: The frequency and extent of surface disturbing activities would be reduced. Vegetation restoration using the best available techniques would be required on projects.

Rationale for Selected Strategy: The invasion and spread of alien plants must be limited to the extent possible.

Recovery Plan Recommendations: None were given.

C.17 Issue: Drought

Scope of Issue: Drought refers to the absence or shortage of precipitation during seasons of normal occurrence such that the spring season has very low plant germination and growth.

C.17.1 Current Situation

Current Situation in NEMO Planning Area: Years with low precipitation in desert areas are common. Occurrences of successive years of low precipitation are not uncommon. Whether rainfall patterns have changed substantially through recent decades such that the occurrence of drought has increased is arguable.

C.17.2 Effects

Primary Effects: During years of low precipitation tortoises may be stressed due to a low internal water balance. In addition, the low forage availability may create nutritional deficiencies, such as low energy levels and/or low levels of essential nutrients. This can create stress or even starvation. Where stressed by lack of water or food, tortoises may be more susceptible to predation, disease, or exposure; presumably hatchling and juvenile tortoises are affected most. When water or food is low, both clutch size and number of clutches is reduced; reproduction may be eliminated. In some drought years, tortoises may be largely inactive in their burrows.

Other Effects: In years of low forage production, competition between tortoises and other species or cattle may occur.

Information Needs: Additional information is needed on the effects of precipitation on tortoise reproduction, alien plant populations, plant nutritional value, and other factors.

C.17.3 Strategy

Strategy in Preferred Alternative for Addressing Issue: Cattle grazing would no longer be available in DWMA's when ephemeral forage production (i.e., annual plant germination and growth) is low. Where feasible, authorized projects would be restricted to the non-tortoise season.

Rationale for Selected Strategy: Although drought is beyond local control, activities that create additional physiological or behavioral stress can be reduced.

Recovery Plan Recommendations: None were given.

C.18 Issue: Monitoring

Scope of Issue: This issue includes only the monitoring of tortoise populations.

C.18.1 Current Situation

Current Situation in NEMO Planning Area: There are three tortoise permanent study plots in the NEMO Planning area - Ivanpah Valley, Goffs, and Shadow Valley. Only the last is on BLM land; the other two are in the Mojave National Preserve. The plots were surveyed regularly through the 1980's and early 1990's, but a lack of funds has prevented USGS from surveying these plots regularly since 1994. The plots were used to study population trends, demographics, and mortality factors. The Tortoise Management Oversight Group has approved an additional technique called line distance sampling. It will provide long-term population trend data on a recovery unit basis. Implementation of this program is awaiting refinement and funding.

C.18.2 Effects

Primary Effects: There are no negative effects of the monitoring programs.

Other Effects: None.

Information Needs: Additional information is needed on the application of the distance-sampling methodology, which has been field-tested only in limited situations.

C.18.3 Strategy

Strategy in Preferred Alternative for Addressing Issue: The BLM would resume funding of population studies at the Shadow Valley plot on a four-year cycle. The BLM would also participate in the rangewide-monitoring program employing distance-sampling methodology.

Rationale for Selected Strategy: The Shadow Valley plot was studied in 1979, 1988, and 1992; continued study of this plot can give important information on changes in tortoise populations and causes of mortality. It is important that the distance-sampling methodology be applied uniformly throughout the range of the tortoise. It will provide the basic trend data for determining recovery.

Recovery Plan Recommendations: Assessment of the permanent study plots would be continued. A second, new methodology, with sample plots randomly distributed over a wide area, would be applied range wide.

Appendix D

Desert Tortoise Monitoring

Changes to this chapter in developing the FEIS

8. New, clarifying Section D 3.7 on Short-Term (Utilization) Monitoring
9. Minor formatting

Appendix D

D.0 Monitoring

D.1 Tortoise Monitoring

D.1.1 Permanent Study Plot Methodology

In the 1970's, tortoise population studies were conducted on 47 plots. The method was to survey the sites intensively, locating all living tortoises and shell remains. In the early years, survey times of 15, 30, and 60 days were tested. Plot sizes of 1-2 square miles were used. For analysis of population trends, tortoise measurements are collected, and the sex is recorded. Shell remains are collected to derive minimum mortality and causes of death.

In the early 1980's, 15 of the 47 plots were selected by BLM as *permanent study plots* to be surveyed on a 4-year cycle. The Shadow Valley, Ivanpah Valley, and Goffs permanent study plots are located in the Northern and Eastern Mojave Planning Area. With designation of the Mojave National Preserve in 1994, only the Shadow Valley Plot is on BLM-administered land; however, the other two are within a few miles. Current methodologies involve two 30-day consecutive surveys (60 days total) of each plot; age-specific population estimates for each plot are computed using a modified Lincoln Index method. A description of the plot survey methods and the methods of analysis can be found in Turner and Berry (1984). Table E-1 shows the years the four plots have been surveyed.

Table D.1 – Desert tortoise permanent study plots in the Planning Area

	Years Surveyed
Shadow Valley	1979, 88, 92
Ivanpah Valley	1979, 86, 90, 94,
Goffs	1980, 83-86, 90, 94, 00

The monitoring plots have provided valuable information on various demographic factors. Analysis yields such information as population density and trend, size-specific sex ratios, age structure, mortality rates, survivorship rates, and causes of mortality.

Until 1994, surveys and analysis of the permanent study plots were conducted by the BLM for the three plots on BLM-administered lands. In 1995, responsibility for these surveys was transferred to the Biological Research Division of the U. S. Geological Survey. In the past few years, funding for these surveys has been inconsistent.

In the early 1990's, the permanent study plot methodology came under criticism primarily because:

- The plot locations were not selected randomly but in relatively undisturbed locations
- The low number of plots does not adequately represent the variation present over the expanse of tortoise habitat
- There has been inconsistent funding resulting in variation in the 4-year sampling period;
- There is an invalid assumption that tortoises do not enter or leave the study plot during the entire spring study period
- Different size classes are not equally detectable
- Tortoise above ground activity may not be 100 percent in poor forage years and is not constant throughout the 60-day sampling period (Tracy, undated)

Despite the criticisms of this monitoring methodology, it has 20 years of history and has provided a tremendous amount of research material. This has resulted from collections of shells, measurements of tortoises, measurements of burrows, notes on predators and human uses, and other data besides counting tortoises. The Desert Tortoise Recovery Plan suggests that a new methodology giving more reliable trend information be developed to supplement but not replace the permanent study plots.

D.1.2 Distance Sampling Methodology

A number of alternative methods for measuring population density and, hence, determining trends in density have been examined in the field (Tracy undated). The selected technique for monitoring desert tortoise trends on a recovery unit basis is a *stratified distance-sampling/above-ground detection* methodology. In this method, each recovery unit is divided into homogeneous *strata*. The strata represent areas where 1) vegetation, soil, and topography are such that tortoises are everywhere equally visible, and 2) all tortoises are engaged in similar activity throughout the stratum at any given time. For the latter assumption, it is especially critical that the proportion active above ground is similar throughout the stratum. A separate survey is to be performed in each stratum.

In 1997 several teams of biologists met to delineate strata in the various recovery units. Strata were delineated only for areas of potential long-term management (i.e., Desert Wildlife Management Areas (DWMAs) as described in the Desert Tortoise Recovery Plan).

The proposed methodology is conducted with two teams, one team (Team A) searching a strip transect for tortoises, and one team (Team B) assessing the proportion above ground using radio telemetry. For Team A, a system of permanent line transects is positioned randomly in the stratum. Each transect is 4 km in length. Each transect is searched by 2-3 observers in a strip 10 meters on each side of the line. The area near the line must be searched thoroughly. For each tortoise sighted, the distance from the tortoise to the line is recorded. From these data a distance-detection function is constructed. This function is then used to estimate the number of tortoises above ground in the strip transect. A simple multiplication yields an estimate of the number of tortoises present above ground in the entire stratum. (Anderson and Burnham, undated)

Team B uses radio-telemetry equipment to relocate tortoises that have been previously radio-tagged. About 25 tortoises must be relocated in each stratum. From the relocation sightings, an above ground proportion is determined. This proportion is then used to correct the estimate from Team A to give a total estimate for the number of tortoises in the DWMA. (Anderson and Burnham, undated)

In 1999, a rangewide tortoise monitoring coordinator will be selected. This coordinator will move the trend monitoring program forward aggressively in subsequent years. Dr. Kristin Berry of U. S. Geological Survey will continue to manage permanent study plot assessments and data analysis for the California Desert.

D.2 Integrated Ecological Monitoring

Plans are underway for development of a California desertwide ecological monitoring program. This program is being developed under direction of the *Desert Managers Group*. The goal of the program is to evaluate ecosystem functions and resource sustainability in the California Desert. The elements of the program can be grouped into three areas:

1. **Early Warning** – This monitoring will give managers a comprehensive view of how the ecosystem is changing over time, especially in response to a range of human effects.
2. **Compliance** – This monitoring will indicate whether agency efforts are meeting various mandated responsibilities (e.g., recovery of endangered species).
3. **Diagnosis** – This monitoring will assess the effects of specific management actions, in particular their impacts on resources.

Under current plans, a regionwide monitoring coordinator will be selected as soon as funding is available. Then, a list of “vital signs” indicating ecosystem health will be identified, a range of alternative methodologies will be defined, monitoring sites will be selected, thresholds of acceptable change will be established, and a data management system will be established.

D.3 Livestock Grazing Monitoring

Monitoring can be defined as the orderly, repeated collection and analysis of resource data to evaluate progress in meeting resource management objectives (this is based on BLM Manual 6600). The repetition of measurements over time for the purpose of detecting change distinguishes monitoring from inventory.

D.3.1 Types of Monitoring

Several types of monitoring have been identified. The following two are particularly relevant to monitoring livestock grazing (see MacDonald, et al. 1991, for a discussion of these and other types of monitoring).

Trend Monitoring

Monitoring to determine the long-term trend in a particular parameter. For example, is the population of a key species increasing, decreasing, or remaining stable at a particular site?

Implementation or Compliance Monitoring

This type of monitoring assesses whether activities were carried out as planned or whether livestock operators are complying with the terms of management plans and permits/leases. For example, did BLM construct the pasture fence in FY 1993 as called for in the activity plan? Did the operator move the mineral blocks at least 1 mile from the riparian-wetland areas as required in the allotment management plan? One of the major types of rangeland monitoring, involving the measurement of utilization is a form of compliance monitoring. We'll discuss this in detail below.

D.3.2 Levels of Monitoring

Qualitative and Semi-Quantitative Monitoring

Although many people equate monitoring with the gathering of some type of quantitative information, qualitative assessment of the condition of rangeland resources is a valid and important form of monitoring. Because of constraints related to limited budgets and workforces and the number of allotments for which BLM is responsible, qualitative monitoring is the level of monitoring most commonly employed in grazing management. Following are types of qualitative and semi-quantitative monitoring:

- **Stewardship integrity monitoring:** This involves visiting areas to ensure the habitat has not changed dramatically, as might occur with fire, overgrazing, trespass mining, vehicular use, etc. Aerial photography at specified intervals could also be used to assess some of these impacts without actually visiting the site.
- **Photoplots:** Photographs can provide important documentation of changes, particularly to habitat, over time. Although listed here under qualitative techniques, photoplots can also be used as a form of quantitative measurement. For example, several close-up photographs may be taken at a site and the number of individuals of the plant species of interest in each photograph counted or estimated.
- **Presence or absence:** Sites are visited to determine if a rare species is still extant or to determine whether a noxious weed has invaded a site.
- **Occurrence mapping:** An occurrence of a rare species or a riparian area may be mapped by delineating the distributional boundaries on the ground or on aerial photos.
- **Utilization pattern mapping:** Mapping the utilization made on key forage species is an important and effective form of grazing monitoring. The entire allotment or individual pasture is canvassed, usually following the removal of livestock, and the amount of utilization in different areas on one or more key plant species is assessed. Areas are then mapped into several classes based on level of utilization (e.g., no use, light use, moderate use, and heavy use). Ocular estimation is often used to assign areas to one of these classes, but sometimes quantitative studies are also used (e.g., utilization transects are established in different areas of the allotment and used to assign these areas to a particular utilization class).

Utilization mapping is usually done each year for several years to determine if patterns are consistent from year to year. Where rest rotation grazing systems are in place, yearly mapping is normally conducted until the completion of at least one rotational cycle. The results of utilization pattern mapping can then be used to identify over-utilized areas of the allotment in need of adjustment through different management and to locate key areas (discussed below) for future monitoring studies.

- **Other observations:** Additional information deemed to be important may be collected based on ocular estimates. Examples are: presence/absence of individuals of a key species in different size classes; rough categorical estimate of the percent of plants in each size class; presence/absence of a defined condition in individuals at a given location (e.g., flowering, diseased, infested by insects, dead); rough categorical estimate of the percent of plants exhibiting the condition (e.g., 25-50% flowering).

The strengths of qualitative and semi-quantitative monitoring are that it is quick and therefore inexpensive, it allows assessment of large areas, such as complete allotments and pastures, it provides insight on condition and management needs, and it can serve as a “red flag” to trigger quantitative monitoring. The weaknesses of this type of monitoring are that different observers may reach different conclusions when no real difference exists; the interpretation is somewhat subjective; it provides purely descriptive information with no potential for analysis; and the only detectable change is often dramatic and severe.

D.3.3 Quantitative Monitoring

In performing quantitative monitoring studies you *measure* something. This can mean, for example, that you count the number of individuals of a key plant species (either in total or by size class), you estimate its cover in plots, or you measure the size (height, cover or both) of individual plants. Quantitative monitoring involves taking a sample to estimate something about the parameter of interest, such as the cover or vigor of a key species in a pasture. Because sampling is involved, there is error around estimates of these parameters that must be considered in analysis. Statistical analysis takes these sampling errors into account when determining whether changes have occurred or thresholds (such as utilization levels) have been crossed.

D.3.4 Key Area Concept

Many, if not most, rangeland vegetation monitoring studies employ the key area concept. Using this approach, key areas are selected (subjectively) that (we hope) reflect what is happening on a larger area. Key areas are areas chosen to be representative of a larger area (such as a pasture) or critical areas such as riparian-wetland areas and sites where endangered species occur. Monitoring studies are then located in these key areas.

Although we would like to make inferences from our sampling of key areas to the larger areas they are chosen to represent, there is no way this can be done in the statistical sense because the key areas have been chosen subjectively. An alternative is to sample the larger areas, but the constraints of time and money coupled with the tremendous variability usually encountered when sampling very large areas often makes this impossible. The key area concept represents a compromise.

Because statistical inferences can be made only to the key areas that are actually sampled, it is important to develop objectives that are specific to these key areas. It is equally important to make it clear that actions will be taken based on what happens in the key area, even when it can't be demonstrated statistically that what is happening in the key area is happening in the area it was chosen to represent. It is also important to base objectives and management actions on each key area separately. *Values from different key areas should never be averaged.*

D.3.5 Key species concept

Just as the key area concept is a compromise between sampling an entire allotment versus sampling only a portion of it, the key species concept is a compromise between tracking change in all plant species versus tracking change in those species that are most likely to be affected by management. The latter species are called key species and are chosen based on several criteria. First, they are usually species that are preferred forage for livestock. Thus, they can be expected to increase under proper grazing management and decrease under improper grazing management. They therefore provide valuable information on the success of management. Second, they should be common enough that monitoring them will not be overly difficult or intensive. Third, changes in the distribution, vigor, or abundance of these key species should be representative of similar changes to other species deemed to be important to the plant community desired for a particular site. In this instance key species serve as keystone or indicator species. A fourth criterion that can be employed is legal status: special status plants may be singled out to be monitored regardless of their rarity or whether they function as keystone or indicator species.

D.3.6 Long-term (trend) monitoring

What most interests the range manager is how ecosystems (including plant and animal communities and abiotic factors such as soil) change over time in response to management. Usually only vegetation is monitored and an assumption made that if certain types and amounts of desired vegetation are present then the desired animals and desired soil conditions are also present. The assessment is made through either quantitative or qualitative monitoring studies usually located in key areas of the allotment. Photoplots and checklists are the principal qualitative monitoring method used in trend monitoring. An example of the checklist approach is the proper functioning condition checklist used in riparian areas. Although this approach can be considered to be inventory, its use at the same site on two or more occasions is a form of monitoring.

Quantitative monitoring methods are several and usually entail the measurement of some attribute of key species at key areas. The Interagency Technical Reference, Sampling Vegetation Attributes (BLM et al. 1996a), includes most of the types of range studies employed by BLM nationwide. In the EIS area the two most common quantitative trend methods involve the use of cover and frequency measurements.

Cover measurements entail the estimation of the percentage of ground surface covered by vegetation. Three types of cover are measured, depending on the measurement method and the biology of the target plant(s). *Canopy cover* is the area of ground covered by the vertical projection of the outermost spread of the foliage of plants, including any small openings in the canopy. Canopy cover measurements are used in estimating the cover of shrubs, trees, and herbaceous plants. The line intercept method (BLM et al. 1996a) is most often used to estimate shrub and tree cover or, alternatively, aerial photographs are used. Canopy cover of herbaceous plants is usually made using plots, such as those described for the Daubenmire method (BLM et al. 1996a). *Foliar cover* is the area of ground covered by the vertical projection of the aerial portions of plants, with small openings in the canopy excluded. This is the type of cover measured by the point intercept method (BLM et al. 1996a), a method used primarily for herbaceous plants. *Basal cover* is the area of ground surface occupied by the basal portion of plants. This is the type of cover often used to monitor changes in bunchgrasses or tree stems. The basal area of bunchgrasses is estimated using line intercepts or estimation in plots. Several methods are applicable to the estimation of tree basal cover; these, however, are rarely used in grazing-related monitoring and will therefore not be discussed here.

Depending on objectives, cover is measured on key species, on all species, or on broad cover categories (e.g., live vegetation, litter, bare ground, and gravel). Total ground cover is important in determining whether sites are adequately protected from accelerated wind and water erosion. Cover of key species is important in determining whether objectives relative to increasing or maintaining the key species are being met.

Changes in the canopy and foliar cover of herbaceous species can be difficult to interpret because they can vary widely with climatic fluctuations. It is therefore difficult to tell whether changes are due to grazing management, weather, or a combination of both. Basal cover is much less sensitive to climatic fluctuations and a better indicator of trend in those species that are amenable to basal cover measurement (e.g., perennial bunchgrasses). The canopy and foliar cover of most woody shrubs does not vary nearly as much as herbaceous plants with climatic fluctuations, and these types of cover are often used to assess trend due to management (sub-shrubs, however, can present the same interpretation problems as herbaceous plants).

Frequency is another attribute often used to assess long-term trend on rangelands. It is one of the easiest and fastest methods available for monitoring vegetation. Frequency is the number of plots (called quadrants) occupied by a particular species, expressed as a percentage. For example, let's say we decide to sample 100 randomly placed 1m x 1m quadrants in a key area. If 40 of these have Key Species A in them, then we say that the frequency of Key Species A in that key area is 40 percent (note that we are interested only whether the species is present or absent in each quadrant--a species is present in a quadrant if 1 or if 100 plants occur in it). We then compare this 40 percent frequency with the value we come up with the next time the key area is sampled to determine if the trend in this key species is up, down, or static. The best results are obtained when frequencies range from 20-80 percent.

Unlike cover, which is not dependent on the type or size of sampling unit used, frequency is only meaningful when the same quadrant size and shape is used in each year of measurement. When measuring the frequency of more than one plant species, it is often difficult to use the same size quadrant and maintain a frequency of 20-80 percent for all species. In these situations a nested frequency quadrant is often used. For example, within a 1m x 1m quadrant, three other quadrant sizes, 50cm x 50cm, 30cm x 30cm, and 10cm x 10cm, are nested. At each random placement of the quadrant, the smallest to the largest quadrant size is searched for the target species. If the species is found in the smallest quadrant, then it is also found in all other quadrants; if it is not found in the smallest quadrant, then the next smallest quadrant is searched, and so on. Once the first year's data are collected, optimal quadrant sizes can be determined for each species.

Changes in frequency can be due to changes in density or spatial pattern. Interpretation can be difficult because of this. However, if the data are recorded on a quadrant-by-quadrant basis, if seedlings and established plants are recorded separately, and if other trend data such as cover are collected at the same time, interpretation becomes easier.

The vertical structure of vegetation can be extremely important to wildlife. This is especially true in riparian areas. Most offices monitor this through the use of photoplots and other qualitative methods. Some offices use quantitative techniques such as the cover board method (BLM et al. 1996a) to monitor vertical structure.

D.3.7 Short-term (Utilization) Monitoring

Except for very favorable sites, such as riparian-wetland areas, changes in vegetation attributes such as frequency and cover can be very slow, making it hard to detect these changes until many years or even decades have passed. This lag time not only makes it difficult to assess the effects of management, it can place the natural resources at risk: if the changes, once they are detected, are in the wrong direction, correcting this downward trend may be all that more difficult or even impossible. Supplementing long-term monitoring with short-term monitoring studies is a means of reducing this risk. These short-term studies monitor the amount of utilization made on key plant species.

Management objectives are developed that specifies how much utilization is allowed on key species before livestock are moved off a pasture. Utilization is then estimated through monitoring studies, and management actions implemented accordingly. These management actions can consist of taking immediate action in the same year (i.e., immediately moving livestock out of the pasture once the utilization threshold is approached or crossed) and of making long-term changes to the livestock grazing on an allotment (i.e., reducing stocking rate or season of use if utilization levels are consistently high).

Several methods are used by different field offices in California to estimate utilization. The Interagency Technical Reference, Utilization Studies and Residual Measurements (BLM et al. 1996b) describe these methods.

Most current BLM land use plans allow for utilization of key perennial grass species of 50 percent of the annual above-ground production (some plans specify a range of 40-60 percent utilization). Holechek (1991), however, points out that:

A 50% use level works well in the flat, humid regions of the Great Plains and Southeast because of their high productivity and high adaptability of the plants to grazing. However in most cases it causes range destruction in the rugged, arid ranges of the West. Research shows stocking rates that involve a 30 to 40% forage use level will enhance range recovery, maintain adequate food and cover for wildlife, protect soil resources and will give the highest long term economic returns with the least risk on nearly all of the western range types (see reviews by Holechek et al. 1989, Vallentine 1990).

It is also important to estimate utilization on shrubs, where these species are important components of the ecosystem. Areas that support shrub species that are used by livestock and wildlife include:

- Riparian areas, which often support willows and other shrubs
- Areas within the sagebrush steppe where bitterbrush and other shrubs are important components
- Areas where saltbushes and other related shrubs occur, both in the sagebrush steppe and annual grassland vegetation types

There are 19 allotments (an area determined to be suitable for grazing) within the NEMO planning area. Eight allotments are located within the Ridgecrest Resource Area, ten within the Needles Resource Area and one in the Barstow Resource Area. With the passage of the CDPA, three allotments have portions located in Death Valley National Park, and eight allotments have portions located in the Mojave National Preserve.

D.4 Literature Cited

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Appendix E

Cattle Grazing Use Guidelines in NEMO Desert Tortoise Habitat

Changes to this chapter in developing the FEIS

1. Minor editing to Cattle Grazing Use Guidelines.
2. Deleted WH&B Use Guidelines: Proposed Guidelines are developed jointly with RAC (Desert Advisory Council) and have only been developed for Cattle Grazing.

Appendix E

E.0 Proposed Grazing Stipulations

E.1 Proposed Cattle Grazing Stipulations in Northern and Eastern Mojave Desert Tortoise Habitat

- I. Allotments rated in good or excellent range condition would not exceed 40 percent utilization and allotments rated in poor or fair range condition would not exceed 30 percent utilization. The CDCA plan designated range condition for all allotments. Utilization of key perennial forage species shall not be exceed 40 percent from February 15 to October 14 in the Crescent Peak, Jean Lake, Piute Valley, and Valley View Allotments and 30 percent from February 15 to October 14 in Clark Mountain, Horse Thief Springs, Pahrump, and Valley Wells Allotments. No averaging of utilization data among perennial key forage species or key areas shall occur. When utilization approaches authorized limits in any key area, steps shall be taken to redistribute or reduce cattle use for that key area. Monitoring of perennial vegetation such as utilization and trend would occur with methods detailed and prescribed in BLM manuals, handbooks, and plans. Grazing use will be managed to improve trends for native perennial and annual plants where site potential permits. Galleta grass shall be a key forage species where it is found.
- II. Cattle shall be evenly dispersed throughout their area of use, and herding shall be limited to shipping and animal husbandry practices. Grazing use shall be managed according to grazing regulations, allotment management plans, CDCA plan, and the current biological opinion. Feeding of roughage, such as hay, hay cubes, or grains to supplement forage quantity, is prohibited. Grazing use shall be curtailed to protect perennial plants during severe or prolonged drought. The steps may include removal of cattle or, where feasible, turning off water at troughs (especially when livestock are not present) to reduce adjacent grazing use.
- III. All cattle carcasses found within 300 feet of any road shall be removed and disposed of in an appropriate manner, and no prior notification to the BLM is necessary if off-road vehicle use is required, but permission from the authorized officer is required to remove animals within wilderness.
- IV. The authorization to use temporary, non-renewable perennial forage above permitted grazing use shall be authorized for no longer than three-month increments in non-DWMA desert tortoise habitat.
- V. Authorization for ephemeral forage (annual grasses and forbs) in non-DWMA desert tortoise habitat shall occur when 230 pounds or more by air-dry weight per acre of ephemeral forage is available. Ephemeral production data shall be collected when necessary if requests are made for ephemeral grazing use. Any cattle authorized to use ephemeral forage shall be removed whenever threshold for curtailing ephemeral grazing is reached.

- VI. Construction and maintenance of range improvements in desert tortoise habitat are limited to existing and proposed facilities listed in this plan and as detailed in biological opinions 1-6-92-F-17 and 1-8-94-f-17. All proposed range improvements would receive NEPA and FWS review as needed. For all construction, operation, and maintenance of range improvements involving land disturbance in desert tortoise habitat the following requirements apply:
- A. Surface disturbance during construction of range improvements shall occur on previously disturbed sites and disturbing soil in habitat shall be minimized whenever possible. Routine vehicle use shall be limited to existing roads and disturbed areas, and off-road vehicle activity shall be held to a minimum. Construction of new roads shall be minimized. Construction of new or replacement facilities shall be carried out only from October 15 to March 15, unless specifically authorized due to safety or emergency considerations. After completion of the project, the disturbed soil shall be blended and contoured into the surrounding soil surface. To reduce attraction of desert tortoise predators, debris and trash created during construction or maintenance of a facility will be removed immediately.
 - B. Range improvement construction, operation, and maintenance shall be modified as necessary to avoid direct impacts to desert tortoises and their burrows e.g., construction of fences or pipelines near tortoise burrows shall be avoided. All proposed range improvement projects shall be designed and flagged to avoid impacts to tortoises and their burrows. A qualified biologist shall conduct pre-construction desert tortoise surveys of proposed project sites. Existing access and areas of disturbance shall be utilized when trenching a section of new pipe or during performance of maintenance. Hazards to desert tortoises created by construction, such as auger holes and trenches, shall be monitored by biological monitor at least twice daily for desert tortoises that become trapped. These hazards will be eliminated before workers leave the site.
 - C. Prior to land-disturbing activities, a field contact representative (FCR) will be designated to ensure compliance with protective measures stipulations for the desert tortoise and will be responsible for coordinating with the U.S. Fish and Wildlife Service. A FCR will have the authority and responsibility to halt activities in violation of FWS stipulations.
 - D. Only authorized personnel are permitted to handle desert tortoises. If construction or maintenance of range improvements endangers the life of a desert tortoise then authorized persons may move the animal a short distance away or hold the animal overnight to release it in the same area the next day.
 - E. All construction and maintenance workers shall strictly limit their activities and vehicles to areas flagged or cleared by persons authorized by the Service. When off-road use with equipment is required, the lessee is to notify the BLM two working days prior to construction or maintenance of a facility.

Appendix F

New Surface Disturbances and Rehabilitation Strategies

Appendix F

F.0 New Surface Disturbances and Rehabilitation Strategies

F.1 Cumulative Surface Disturbances

New surface disturbance on lands administered by federal and state agencies within any desert tortoise ACEC will have a cumulative limitation. This limitation is proposed to be one percent of suitable habitat in the preferred alternative. The amount that may be disturbed will be apportioned among the various participating agency jurisdictions.

F.1.1 Rationale

The limit of 1 percent on cumulative surface disturbance is intended to show a high level of commitment to conservation of natural habitats. Although the 1 percent level may seem arbitrary to some, it is expected to accommodate the needs of those activities that must occur in the ACEC based on low historic levels of use in these areas. Among these are communication sites, maintenance of existing and construction of new utilities in designated utility corridors, dispersed recreation, and mining. It is anticipated that retaining 99 percent of what is presently in natural condition will be sufficient for maintaining viable populations of all species that are dependent upon the ACEC; conserving lesser amounts might be arguable. The commitment to limiting cumulative disturbance is an alternative to the prohibition on specific classes of activities based primarily on our ability to prohibit them rather than on their expected level of occurrence and size, their need, their public value, etc. It gets us closer to the direct effect on species that we are attempting to address: prevention of loss of habitat.

F.1.2 Specifics

Surface disturbing activities are those that result in elimination of perennial plant cover over an area. Elimination may result from blading or otherwise destroying plant roots and severely disturbing soil structure or it may be less severe in the form of crushing of above ground plant parts. The localized effects of new corrals or livestock watering sites will be considered surface disturbing, but general grazing will not be. Burned areas will not be included under the one percent limit.

Surface disturbing activities will be recorded on 7.5-min. topographic maps and entered into a GIS database. Disturbances will be recorded as they are permitted. Unauthorized disturbances will also be entered as they are identified. Disturbances on private lands may also be recorded but will not be limited to one percent cumulative disturbance.

Lands acquired by an agency will be added to the base in their condition at the time of acquisition. That is, disturbance present on the parcel at the time of acquisition will not be added to the cumulative new disturbance.

If an interstate highway or state highway is widened and creates new surface disturbance in an ACEC, the new disturbance will not be covered by the cumulative limit if highway fencing is added. The fencing will result in increased tortoise populations along the highway due to decreased tortoise mortality on the road. In addition, there may be a decrease in raven populations as roadkills supporting ravens are reduced.

F.2 Rehabilitation strategies

F.2.1 Trigger for Evaluation of Rehabilitation

As disturbed lands are restored, it would be practical that they may be subtracted from the cumulative total of disturbed lands. Lands may be evaluated for removal only after they meet the following “40% criteria” (or *evaluation trigger*); passing of the evaluation trigger alone will not remove the disturbed lands, it is the point at which evaluation of lands would be initiated:

Perennial plants are present in densities and sizes so that impacts are substantially unnoticeable in the area as a whole and so that the area provides food and shelter for key wildlife species in the area. More specifically, each species in a suite of the most dominant perennial plants prior to disturbance must be reestablished to at least 40 percent of its original density (i.e., number of plants/hectare) and at least 30 percent of its original total cover. The choice of the suite of dominant perennial plants is any combination of perennial plants that originally accounted cumulatively for at least 80 percent of relative density¹. There will be no less than two dominant perennial species.

The use of only perennial plant cover in the evaluation trigger allows calculation of the restoration requirement in any year (wet or dry) and any season. The use of specific numbers allows the evaluation trigger for a particular site to be known prior to the disturbance. It should be noted that some important plants, such as Joshua trees, which are important as an overstory plant but are not dominant, would not be a part of the evaluation trigger. Reestablishment of such plants could, of course, be a restoration requirement for a particular project, but they would not be used to trigger an evaluation for the purposes of reducing the cumulative disturbance total. Annual plants are difficult to use in evaluating restoration progress because 1) the number of species is very high, 2) identification is difficult, and 3) the presence of a given species is highly variable from year to year based on factors (e.g., rainfall) unrelated to habitat restoration. The evaluation trigger does not preclude the possibility that annual weeds may be present or even prevalent. Once an evaluation is triggered, many factors would be considered in the analysis of the site.

Rehabilitation Factors

Many of the ideas and information described below come from the Desert Restoration Task Force, a committee to the Desert Managers Group (DMG). This committee has developed publications on the subject. One part of the array of management initiatives of the DMG includes restoration of disturbed sites. This is being specifically addressed through the DMG subcommittee for the Desert Restoration Task Force. This group has published a technical manual on the subject. In it tried and tested site planning and application techniques as well as experimentation are encouraged. Much more will be learned and written over time. The intent of this discussion is not to review the technology or “cook-book” restoration design on a species and habitat basis, but to review some thought considerations and convey an intent that more sophisticated and effective rehabilitation measures are needed and expected for future authorized disturbances. In the final analysis it will be left to case-by-case field applications to evaluate the specific needs, actions, expense that will result in site conditions which approximate natural disturbance, and identify priorities for restoration.

¹ For example, if perennial plants A, B, and C have relative densities of 70, 13, and 12 percent, respectively, the dominant species could be species A and any one (or more) of species B or C.

The Northern and Eastern Colorado Desert Science Panel that met on November 12, 1998, noted that disturbance is not entirely a negative ecological condition or just human-caused. Wash, wind, tectonic, fire and other violent natural forces cause episodes of natural disturbance and are forces of natural ecological processes. Variables to consider in restoration may include the amount, location, nature, and effects of disturbance and other constraints. Disturbances that pose serious problems and that do not lend themselves to a “construction” solution are not addressed here. These include disease, unnatural change to fire regime, and exotic plants. To meet this mandate decision makers must apply site planning and consider a variety of technical applications. Site planning and restoration considerations may include:

- Special Status Species
 - Listed, proposed for listing, sensitive
 - Species-habitat relationships that apply
- Plant Community
 - Common, rare
 - Site quality
- Management Goals
 - General management goals
 - Special management goals (e.g., DWMA, WHMA, species and sensitive habitats). This consideration is critical and can make the difference between minimally necessary and special needs restoration and cost.
- Ecological Processes
 - Determine the preexisting condition, distribution of species and habitats
 - Most important to restore and that humans can effect
 - Commonly considered are soil, hydrologic, wind functions, movement of animals, sources and movement of seed.
- Conservation Principles
 - Patch size (fragmentation)
 - Plant cover
 - Corridors
 - Habitat conversion to exotic species.
- Site Context
 - Site in area of habitat
 - Site in the range(s) of species
 - Site quality
 - Cumulative situation, if any, of this site, with others of a permanent/temporary disturbance nature.

- Site Analysis/Pre-existing Site Condition - constraints and objectives
 - Topography, slope, aspect
 - Landforms (e.g., washes, desert pavement, sand systems)
 - Surface and Subsurface Soils
 - Vegetation
 - Subsurface organic matter
 - Surface texture/micro-habitat: organic debris, soil, sand, rock texture.
- Constraints
 - Can approximate original topography be achieved?
 - Is compaction a problem?
 - Historic use patterns
 - Are materials on hand to recreate original surface texture?
 - Are there uses to prevent or that could impair restoration efforts?
 - Time
 - Cost.
- Common applications (not for all situations)
 - Grading (topography, landform, micro topography, surface texture)
 - Replacing topsoil
 - Increasing soil moisture through mulching surface or subsurface (non contaminated with chemicals or weed seeds), imprinting, pitting
 - Treating compacted soils
 - Capturing and holding seeds through imprinting and pitting
 - Seeding (seed treatment) with locally gathered/commercially available seed
 - Individual plantings/Irrigation (costly, uncommon)
 - Erosion control.

The evaluation criteria are an initial trigger upon which an evaluation of both the productivity and the visual aspect of the vegetative community would take place, considering targets set for the rehabilitation, such as pertinent factors identified above. Specified levels are those levels where the impact may be unnoticeable and the area may be productive for wildlife in terms of food and shelter. At these levels it is likely that soil condition is returning, and annual plant cover is probably present; therefore ecosystem processes are beginning to successfully operate again.

Appendix G

Recommended Special Management Actions for T&E Plant Conservation

Appendix G

G.0 Recommended Special Management Actions For the Recovery of the Ash Meadows Gumplant (*Grindelia fraxino-pratensis*) and Amargosa Niterwort (*Nitrophila mohavensis*)¹

G.1 Introduction

G.1.1 Ash Meadows Gumplant

The Ash Meadows gumplant (*Grindelia fraxino-pratensis*) was published in the Federal Register Notice of Review on 1 July 1975 as threatened (40 FR 27861) and in the 15 December 1980 Notice as Category I: taxa to be considered for threatened or endangered status (45 FR 82512). It was listed as Rare and Endangered by the California Native Plant Society and Endangered by the Northern Nevada Native Plant Society in 1980. This plant was also listed as California State Endangered in 1979 and federally listed as Endangered in 1985.

The Ash Meadows gumplant is an erect biennial or perennial herbaceous plant that is approximately 5-12 decimeters (dm) tall with one to several stems arising from a woody root-stock. The stems are light to reddish brown, glabrous, leafy and branched in their upper halves. The dark green leathery resin-coated leaves are narrow, about 2-7 centimeters (cm) long and 5-12 millimeters (mm) wide and are somewhat sticky to the touch. The basal leaves are longer and wider than the stem leaves. The leaf margin is entire to somewhat toothed at the tip. The inflorescence is openly branched with several heads on the terminal branchlets with head width ranging from 8-10 mm. The involucre is 7-9 mm tall with overlapping resin-dotted phyllaries 3-7 mm long. Ray flowers are mostly 13 in number, golden to lemon yellow and 7-9 mm long. Disk flowers are golden yellow and 4-5 mm long. In bud, the disk flowers are covered with a white gum-like substance; hence, the name gumplant. The achenes are 2.5 - 3.5 mm long that bear two stout awns that are approximately 3-4 mm long. Little is known about this species' life history or habitat requirements due to its limited distribution and individual occurrences.

G.1.2 Amargosa Niterwort

The Amargosa niterwort (*Nitrophila mohavensis*) was published in a Notice of Review on 1 July 1975 (40 FR 27833) as Endangered and was proposed as Endangered on 16 June 1976 (41 FR 24539). This plant was California State listed as Endangered in 1979 and federally listed as Endangered in 1980.

The Amargosa niterwort is a low, long-lived erect plant from thick underground roots. It reaches heights up to 8 cm. The leaves are small, approximately 2-3 mm long, thick, fleshy and bright green. They are densely arranged along a reddish-colored stem. The flowers are small and frequently hidden among the upper leaves. The petal-like segments on the flowers are rose-colored when fresh and approximately 2 mm long. When the segments become dry, they are brownish in color and somewhat papery to the touch. The anthers are small and 5 in number. The fruit is small and round, with black shiny seeds.

¹ Both of these species are on the Center for Plant Conservation's list of species expected to become extinct within ten years.

G.2 Objectives

The objective is to minimize the threats that imperil the Ash Meadows gumplant and Amargosa niterwort so that these species can be downlisted. These plants may be proposed for downlisting when their populations and the wetland ecosystem on which they are dependent within the Carson Slough and other habitat in Nevada are secure and self-perpetuating.

Recovery efforts should occur on the following sites:

- Public lands administered by the BLM in the Carson Slough area. The Ash Meadows gumplant is known in only two sites, one in Nye County, Nevada and the other in the Carson Slough area of Inyo County, California, in close proximity to the Amargosa niterwort. The Amargosa niterwort is known on a single site (see Chapter 7, Figure 10) on the southwestern edge of Ash Meadows region just west of the Nevada state line in extreme southeastern Inyo County, California, at the Amargosa River drainage (Carson Slough) about three miles northeast of Death Valley Junction.
- Water sources required to perpetuate these areas should be secured and managed.

Specific recommendations, requirements and tasks include:

- Implement short-term actions critical for the near term survival of the Ash Meadows gumplant and Amargosa niterwort.
 - Identify habitat and source water on private, The Nature Conservancy, state and federal lands.
 - i. Identify habitat
 - ii. Identify groundwater sources and springs
- Identify and preclude present or threatened destruction, modification, or curtailment of habitat or range.
 - Reduce the major threat from the reduction of free-flowing water through the Carson Slough currently being diverted for farming activities.
 - Reduce the threat of grazing and trampling by horses (both feral and owned).
 - Reduce the threat from the increase of off-road vehicle activities.
 - Reduce the threat to the environment of, and possible type conversion from non-native, weedy, species.

The above mentioned existing threats are all expected to continue for some time into the future and can be considered potential threats for more populations than are currently impacted.

- Identify and implement measures to protect public land populations.
 - Develop ACEC management strategy within three years.
 - Integrate strategy with the Amargosa River ACEC management planning to address watershed, water quantity and related issues.

Appendix H

Recommended Special Management Actions for Conservation of the Amargosa vole

Appendix H

H.0 Recommended Special Management Actions for the Recovery of the Amargosa Vole

H.1 Introduction

The Amargosa vole is desert subspecies of the widely distributed California vole. The Amargosa vole historically inhabited a highly localized and isolated wetland of the central Mojave Desert in extreme southeastern Inyo County, California, near the Inyo – San Bernardino County line. It depends upon, and is closely associated with, wetland vegetation dominated by bulrush. The Amargosa vole was listed as a California State endangered species on September 2, 1980. (Title 14 California Administrative Code, Section 670.5) and as a federal endangered species with critical habitat on November 15, 1984 (49 Federal Register (FR): 45160). Reasons for listing include loss of historical habitat, rechannelization of water sources needed to perpetuate habitats, and pumping of groundwater. Based on the high degree of threat and low full recovery potential, the Amargosa vole has been given a recovery priority of six (6), meaning that it is a subspecies under high threat with a low recovery potential.

H.2 Objective of the Management Actions

The objective of the management actions is to minimize the threats that imperil the Amargosa vole so that the species can be downlisted to “Threatened” status. The Amargosa vole may be proposed for downlisting when populations of the vole and the wetland ecosystem on which they are dependent within the ancient Tecopa Lake Basin and within Amargosa Canyon are secure and self-perpetuating.

Recovery efforts should occur on the following five sites:

1. Public lands administered by the BLM in the Grimshaw Lake and Amargosa Canyon Areas of Critical Environmental Concern
2. State lands in the northern portion of the Amargosa Canyon
3. The BLM lands south of Tecopa Hot Springs
4. Private lands containing vole habitat
5. Water sources required to perpetuate these areas, and corridors necessary for maintaining genetic exchange between otherwise isolated vole populations

The interim goal is to secure vole populations in wetlands above 1,370 feet (410 meters) elevation. Tasks to achieve the interim goal include securing habitat and the water sources for maintaining these wetlands, and minimizing threats from introduced species.

Specific recommendations, requirements and tasks include:

1. Implement short-term actions critical for the near-term survival of the Amargosa vole.
 - a. Identify Amargosa vole habitat and source water on private, The Nature Conservancy, state, and federal lands.
 - i. Identify Amargosa vole habitat
 - ii. Identify groundwater sources and springs

- b. Implement measures to secure extant populations and non-occupied habitat; foremost, those above 1,370 feet (410 meters) in elevation and habitats protected against flooding by the historic railbed grading for the Tonopah and Tidewater railroad lines.
 - i. Secure water sources and water rights for groundwater and springs critical to maintaining and enhancing upland habitats and lowland habitats.
 - ii. Protect wetland habitats from geothermal exploration and development.
 - ◆ Identify geothermal ownership (mineral estate) that can affect upland and protected lowland habitats.
 - ◆ Remove geothermal development that has adverse effects on wetlands or critical habitat from current and future leases. This would probably include a mineral withdrawal corresponding with public lands within critical habitat. Invoke a “no surface occupancy” stipulation in the affected area if the impact analysis supports that surface disturbance will adversely affect the vole or wetlands habitat, and USF&WS supports that jeopardy opinion would occur if surface activity were allowed.
 - iii. Remove tamarisk from upland and protected lowland habitats
 - iv. Maintain integrity of the Tonopah and Tidewater railbed to prevent flooding of existing lowland habitats.
 - v. Prevent further loss of habitat or water quality by road construction, maintenance, or other construction activities.
 - vi. Replace existing OHV exclusion barrier with a more substantial post and cable barrier.
 - vii. Immediately remove all feral cattle from the Amargosa Canyon
 - viii. Prohibit all camping and campfires on public lands.
 - c. Identify threats to the Amargosa vole and/or habitat.
 - d. Develop interim management plan to protect habitats.
 - e. Implement management plan.
2. Population surveys and assessments.
- a. Estimate population size of all habitat patches using capture/mark/recapture.
 - b. Obtain demographic data on the Amargosa vole to determine abundance, distribution, natality, mortality, recruitment, dispersal distance, and rate of population change.
 - c. Collect tissue samples from all new captured animals.
 - d. Collate and analyze data annually.
3. Habitat surveys and assessment.
- a. Quantify habitat characteristics around animal capture sites.
 - b. Determine temporal and spacial patterns of habitat use.

- c. Evaluate habitat condition annually:
 - i. Tecopa Lake Basin and Amargosa Canyon.
 - ii. Shoshone area.
- d. Develop management protocols for enhancing extant habitat and rehabilitating historical habitat sites:
 - i. Analyze habitat data.
 - ii. Develop management protocols for enhancing extant habitat and rehabilitating historical habitat sites.
- 4. Genetic Analysis
 - a. Analyze genetic data.
 - b. Evaluate progress toward recovery objective.
- 5. Enhance Amargosa vole populations and habitat.
 - a. Determine affects of natural and anthropogenic threats including flooding, spring water flow and flux, vegetation changes, fire, exotic intrusion (plant and animal), pesticides/ rodenticides, and groundwater/ watershed alterations.
 - b. Implement effective habitat/vegetation manipulation that enhances vole habitat and minimizes adverse effects on other sensitive native species.
 - c. Reduce or eliminate competitive faunal species.
 - d. Establish additional Amargosa vole populations.
 - i. Determine if establishment or rehabilitation of habitat is necessary.
 - ii. Complete habitat rehabilitation or protective measures, if necessary, prior to reintroducing voles.
 - iii. Introduce voles into the site.
 - iv. Monitor success of the vole population at each transplant site.
 - v. Continue with transplant program if necessary of feasible.
 - e. Develop map of habitat and population trends.
- 6. Monitor habitat trends.
 - a. Develop monitoring protocol and conduct yearly small mammal and vegetation surveys.
 - b. Update map of habitat and population trends.
 - c. As necessary, modify management plans.
- 7. Establish a public outreach program.¹

¹ U.S. Fish and Wildlife Service, 1997. Amargosa vole (*Microtus californicus scirpensis*) Recovery Plan. Portland, Oregon.

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Appendix I

Species of Special Consideration in NEMO

Appendix I

I.0 Special Status Species within the Northern and Eastern Mojave Desert

I.1 Animal Status Codes

I.1.1 Federal

Endangered

Those animals officially listed or proposed for listing as endangered under the Federal Endangered Species Act.

Threatened

Those animals officially listed or proposed for listing as threatened under the Federal Endangered Species Act.

California Bureau of Land Management (BLM) Sensitive Species

A BLM State Director designates sensitive species.

BLM Manual 6840 defines sensitive species as "...those species that are (1) under status review by the Fish and Wildlife Service/National Marine Fisheries Service; or (2) whose numbers are declining so rapidly that Federal listing may become necessary; or (3) with typically small and widely dispersed populations; or (4) those inhabiting ecological refugia or other specialized or unique habitats."

Federal Special Concern (FSC) species

FSC is a "term of art" for former USFWS Category 2 candidates.

The Fish and Wildlife Service (FWS) and Migratory Non-game Birds of Management Concern (MNBMC)

Species of migratory nongame birds that are considered to be of concern in the United States because of (1) documented or apparent population declines, (2) small or restricted populations, or (3) dependence on restricted or vulnerable habitats

I.1.2 State

Endangered

Those animals officially listed or proposed for listing as endangered under the California Endangered Species Act.

Threatened

Those animals officially listed or proposed for listing as threatened under the California Endangered Species Act.

California Special Concern species (CDFG: CSC)

The Department has designated certain vertebrate species as CDFG: CSC because declining population levels, limited ranges, and/or continuing threats have made them vulnerable to extinction.

Fully Protected and Protected (CDFG)

Fully Protected and Protected species may not be taken or possessed without a permit from the Fish and Game Commission and/or the Department of Fish and Game.

Table I.1 - Animal Species of Special Consideration

		Listing Status	
			State
Birds			
Swainson's hawk	<i>Buteo swainsoni</i>		Threatened
Western yellow-billed cuckoo	<i>Coccyzus americanus occidentalis</i>	FWS: MNBMC	Endangered
Southwestern willow flycatcher	<i>Empidonax traillii extimus</i>	Endangered	
Least bells vireo	<i>Vireo bellii pusillus</i>	Endangered FWS: MNBMC	Endangered
Inyo California towhee	<i>Pipilo crissalis</i>	Threatened	Endangered
Cooper's hawk	<i>Accipiter cooperi</i>		CDFG: CSC
Tricolored blackbird	<i>Agelaius tricolor</i>	BLM Sensitive, FSC FWS: MNBMC	CDFG: CSC
Golden eagle	<i>Aquila chrysaetos</i>		CDFG Fully Protected
Long-eared owl	<i>Asio otus</i>		CDFG: CSC
Burrowing owl	<i>Athene cunicularia hypugea</i>	BLM Sensitive FWS: MNBMC	CDFG: CSC
Ferruginous hawk	<i>Buteo regalis</i>	FSC, FWS: MNBMC	CDFG: CSC
Western snowy plover	<i>Charadrius alexandrinus nivosus</i> Inland populations	FWS: MNBMC	CDFG: CSC
Northern harrier	<i>Circus cyaneus</i>		CDFG: CSC
Yellow warbler	<i>Dendroica petechia brewsteri</i>		CDFG: CSC
Prairie falcon	<i>Falco mexicanus</i>		CDFG: CSC
Yellow-breasted chat	<i>Icteria virens</i>		CDFG: CSC
Western least bittern	<i>Ixobrychus exilis hesperis</i>	FSC, FWS: MNBMC	CDFG: CSC
California gray-headed junco	<i>Junco hyemalis caniceps</i>	FWS: MNBMC	CDFG: CSC
Loggerhead shrike	<i>Lanius ludovicianus</i>	FSC, FWS: MNBMC	CDFG: CSC
Brown-crested flycatcher	<i>Myiarchus tyrannulus</i>		CDFG: CSC
Hepatic tanager	<i>Piranga flava</i>		CDFG: CSC
Summer tanager	<i>Piranga rubra</i>		CDFG: CSC
White-faced ibis	<i>Plegadis chihi</i>	FSC, FWS: MNBMC	CDFG: CSC
Vermilion flycatcher	<i>Pyrocephalus rubinus</i>		CDFG: CSC
Bendire's thrasher	<i>Toxostoma bendirei</i>	BLM Sensitive FWS: MNBMC	CDFG: CSC
Crissale thrasher	<i>Toxostoma crissale</i>		CDFG: CSC
Le conte's thrasher	<i>Toxostoma lecontei</i>	BLM Sensitive	CDFG: CSC
Virginia's warbler	<i>Vermivora virginiae</i>		CDFG: CSC
Gray vireo	<i>Vireo vicinior</i>	BLM Sensitive	CDFG: CSC
Mammals			
Amargosa vole	<i>Microtus californicus scirpensis</i>	Endangered	Endangered
Mohave ground squirrel	<i>Spermophilus mohavensis</i>	FSC	Threatened
Pallid bat	<i>Antrozous pallidus</i>	BLM Sensitive	CDFG:CSC
Townsend's western big-eared bat	<i>Corynorhinus townsendii townsendii</i>	BLM Sensitive, FSC	CDFG: CSC
Occult little brown bat	<i>Myotis lucifugus occultus</i>	FSC	CDFG: CSC
Fringed myotis	<i>Myotis thysanodes</i>	BLM Sensitive, FSC	

		Listing Status	
			State
Western mastiff bat	<i>Eumops perotis</i>	BLM Sensitive, FSC	CDFG: CSC
Mammals			
Spotted bat	<i>Euderma maculatum</i>	BLM Sensitive, FSC	CDFG: CSC
Western small-footed myotis	<i>Myotis ciliolabrum</i>	BLM Sensitive, FSC	
Long-eared myotis	<i>Myotis evotis</i>	BLM Sensitive, FSC	
California leaf-nosed bat	<i>Macrotus californicus</i>	BLM Sensitive, FSC	CDFG: CSC
Desert bighorn sheep	<i>Ovis canadensis nelsoni</i>	BLM Sensitive	CDFG Fully Protected
Amphibians			
Black toad	<i>Bufo exsul</i>		Endangered
Inyo Mountains slender salamander	<i>Batrachoseps campi</i>	BLM Sensitive	CDFG Protected, CDFG: CSC
Reptiles			
Desert tortoise	<i>Gopherus agassizii</i>	Threatened	Threatened
Panamint alligator lizard	<i>Elgaria panamintinus</i>	BLM Sensitive	CDFG Protected
Banded gila monster	<i>Heloderma suspectum cinctum</i>	BLM Sensitive, FSC	CDFG Protected, CDFG: CSC
Fish			
Amargosa River pupfish	<i>Cyprinodon nevadensis amargosae</i>	BLM Sensitive	CDFG: CSC
Shoshone pupfish	<i>Cyprinodon nevadensis shoshone</i>	FSC	CDFG: CSC
Amargosa Canyon speckled dace	<i>Rhinichthys osculus</i> ssp 1	BLM Sensitive, FSC	CDFG: CSC
Insects			
Shoshone cave whip-scorpion	<i>Trithyreus shoshonensis</i>	BLM Sensitive	

I.2 Plant Status Codes

I.2.1 Federal

Endangered

Those plants officially listed or proposed for listing as endangered under the Federal Endangered Species Act.

Threatened

Those plants officially listed or proposed for listing as threatened under the Federal Endangered Species Act.

California Bureau of Land Management (BLM) Sensitive Species

A BLM State Director designates sensitive species.

BLM Manual 6840 defines sensitive species as "...those species that are 1) under status review by the Fish and Wildlife Service/National Marine Fisheries Service; or 2) whose numbers are declining so rapidly that Federal listing may become necessary; or 3) with typically small and widely dispersed populations; or 4) those inhabiting ecological refugia or other specialized or unique habitats."

Federal Special Concern (FSC) species

FSC is a "term of art" for former USFWS Category 2 candidates.

I.2.2 State

Rare, Threatened or Endangered

Those plants officially listed or proposed for listing under the California Endangered Species Act.

NVCE

Those plants Critically Endangered in Nevada

NVCE#

Recommended for Critically Endangered List pending formal listing.

CNPS

The California Native Plant Society Lists

- List 1A: Plants presumed extinct in California
- List 1B: Plants Rare, Threatened, or Endangered in California and elsewhere
- List 2: Plants Rare, Threatened, or Endangered in California, but more common elsewhere
- List 3: Plants about which we need more information-A review list
- List 4: Plants of limited distribution (significant locally)-A watch list

Table I.2 – Plant Species of Special Consideration

		Listing Status		
				CNPS
Curved-pod Milk-vetch	<i>Astragalus mohavensis</i> var. <i>hemigyris</i>	FSC		1A
July gold	<i>Dedeckera eurekaensis</i>	FSC	CA Rare	1B
Forked buckwheat	<i>Eriogonum bifurcatum</i>	FSC		1B
Kingston mountain bedstraw	<i>Galium hilendiae</i> ssp. <i>kingstonense</i>	BLM Sensitive		1B
Ash meadows gumplant	<i>Grindelia fraxino-pratensis</i>	Threatened		1B
Amargosa niterwort	<i>Nitrophila mohavensis</i>	Endangered	CA Endangered	1B
Shining Milk-vetch	<i>Astragalus lentiginosus</i> var. <i>micans</i>	FSC		1B
Sodaville Milk-vetch	<i>Astragalus lentiginosus</i> var. <i>sesquimetralis</i>	FSC	CA Endangered	1B
Spring-loving centaury	<i>Centaureum namophilum</i>	Threatened		
Tecopa Birds-beak	<i>Cordylanthus tecopensis</i>	BLM Sensitive – FSC		1B
Thorne's buckwheat	<i>Eriogonum ericifolium</i> var. <i>thornei</i>	FSC	CA Endangered	1B
Darwin rock cress	<i>Arabis pulchra</i> var. <i>munciensis</i>	BLM Sensitive		2
Shockley's rock cress	<i>Arabis shockleyi</i>			2
White bear poppy	<i>Arctomecon merriamii</i>	FSC		2
Cloak fern	<i>Argyrochosma limitanea</i> var. <i>limitanea</i>			2
Playa milk-vetch	<i>Astragalus allochrorous</i> var. <i>playanus</i>			2
Darwin mesa milk-vetch	<i>Astragalus atratus</i> var. <i>mensanus</i>	BLM Sensitive		1B
Black milk-vetch	<i>Astragalus funereus</i>	BLM Sensitive – FSC		1B
Geyer's milk-vetch	<i>Astragalus geyeri</i> var. <i>geyeri</i>	BLM Sensitive		2
Gilman's milk-vetch	<i>Astragalus gilmanii</i>	FSC		1B
Little big-pod milk-vetch	<i>Astragalus platytropis</i>			2
Preuss's milk-vetch	<i>Astragalus preussii</i> var. <i>preussii</i>			2
Naked milk-vetch	<i>Astragalus serenoii</i> var. <i>shockleyi</i>			2
Scaly cloak fern	<i>Astrolepis cochisensis</i>			2
Ayenia	<i>Ayenia compacta</i>			2
Fremont barberry	<i>Berberis fremontii</i>			3
King's eyelash grass	<i>Blepharidachne kingii</i>			2
Red grama	<i>Bouteloua trifida</i>			2
Crucifixion thorn	<i>Castela emoryi</i>			2
Jaeger's caulostramina	<i>Caulostramina jaegeri</i>	BLM Sensitive – FSC		1B
Wooton's lace fern	<i>Cheilanthes wootonii</i>			2
Desert birds-beak	<i>Cordylanthus eremicus</i> ssp. <i>eremicus</i>			4
Purple bird's-beak	<i>Cordylanthus parviflorus</i>			2
Gilman's cymopterus	<i>Cymopterus gilmanii</i>			2
Ripley's cymopterus	<i>Cymopterus ripleyi</i> var. <i>saniculoides</i>			1B
Panamint dudleya	<i>Dudleya saxosa</i> ssp. <i>saxosa</i>	FSC		1B
Howe's hedgehog cactus	<i>Echinocereus engelmannii</i> var.	BLM Sensitive – FSC		1B

		Listing Status		
				CNPS
	<i>howei</i>			
Panamint daisy	<i>Enceliopsis covillei</i>	BLM Sensitive – FSC		1B
Nine-awned pappus grass	<i>Enneapogon desvauxii</i>			2
Gilman's goldenbush	<i>Ericameria gilmanii</i>			1B
Reveal's buckwheat	<i>Eriogonum contiguum</i>			2
Wildrose canyon buckwheat	<i>Eriogonum eremicola</i>	BLM Sensitive – FSC		1B
Jointed buckwheat	<i>Eriogonum intrafractum</i>	FSC		1B
Panamint mountains buckwheat	<i>Eriogonum microthecum</i> var. <i>panamintense</i>	BLM Sensitive – FSC		1B
Juniper buckwheat	<i>Eriogonum umbellatum</i> var. <i>juniporinum</i>			4
Ripley's gilia	<i>Gilia ripleyi</i>			2
Golden carpet	<i>Gilmania luteola</i>			1B
Pungent glossopetalon	<i>Glossopetalon pungens</i>	BLM Sensitive – FSC		1B
Inyo hulsea	<i>Hulsea vestita</i> ssp. <i>inyoensis</i>	BLM Sensitive		2
Yellow ivesia	<i>Ivesia arizonica</i> var. <i>arizonica</i>			3
Jaeger's ivesia	<i>Ivesia jaegeri</i>	BLM Sensitive – FSC		1B
Kingston mountains ivesia	<i>Ivesia patellifera</i>	BLM Sensitive – FSC		1B
Sand linanthus	<i>Linanthus arenicola</i>			2
Scrub lotus	<i>Lotus argyraeus</i> var. <i>multicaulis</i>			1B
Providence mountains lotus	<i>Lotus argyraeus</i> var. <i>notitius</i>			1B
Panamint mountains lupine	<i>Lupinus magnificus</i> var. <i>magnificus</i>	BLM Sensitive – FSC		1B
Wolftail	<i>Lycurus phleoides</i> var. <i>phleoides</i>			2
Spearleaf	<i>Matelea parvifolia</i>			2
Violet twining snapdragon	<i>Maurandya antirrhiniflora</i> ssp. <i>antirrhiniflora</i>			2
Rock lady	<i>Maurandya petrophila</i>	FSC	CA Rare	1B
Utah monkeyflower	<i>Mimulus glabratus</i> ssp. <i>utahensis</i>			2
Appressed muhly	<i>Muhlenbergia appressa</i>			2
Tough muhly	<i>Muhlenbergia arsenei</i>			2
Delicate muhly	<i>Muhlenbergia fragilis</i>			2
Few-flowered Muhly	<i>Muhlenbergia pauciflora</i>			2
False Buffalo-grass	<i>Munroa squarrosa</i>			2
Forked purple mat	<i>Nama dichotomum</i> var. <i>dichotomum</i>			2
Slender Woolly-heads	<i>Nemacaulis denudata</i> var. <i>gracilis</i>			2
Curved-spine Beavertail	<i>Opuntia curvospina</i>			2
Beautiful cholla	<i>Opuntia pulchella</i>			2
Watson's oxytheca	<i>Oxytheca watsonii</i>			2
Cliff brake	<i>Pellaea truncata</i>			2
Limestone beardtongue	<i>Penstemon calcareus</i>			2
Death valley beardtongue	<i>Penstemon fruticiformis</i> var. <i>amargosae</i>	BLM Sensitive – FSC		1B
Stephen's beardtongue	<i>Penstemon stephensii</i>	BLM Sensitive – FSC		1B
Inyo rock daisy	<i>Perityle inyoensis</i>	BLM Sensitive		1B
Hanaupah rock daisy	<i>Perityle villosa</i>	BLM Sensitive		1B

		Listing Status		
				CNPS
Death valley sandpaper plant	<i>Petalonyx thurberi</i> ssp. <i>gilmanii</i>	BLM Sensitive – FSC		1B
Saline valley phacelia	<i>Phacelia amabilis</i>	FSC		3
Aven nelson's phacelia	<i>Phacelia anelsonii</i>			2
Death Valley Round-leaved Phacelia	<i>Phacelia mustelina</i>	BLM Sensitive		1B
Goodding's phacelia	<i>Phacelia pulchella</i> var. <i>gooddingii</i>			2
Two-needle pinyon pine	<i>Pinus edulis</i>			3
Small-flowered rice grass	<i>Piptatherum micranthum</i>			2
Desert popcorn-flower	<i>Plagiobothrys salsus</i>			2
Notch-beaked milkwort	<i>Polygala heterorhyncha</i>			2
Narrow-leaved cottonwood	<i>Populus angustifolia</i>			2
Abert's sanvitalia	<i>Sanvitalia abertii</i>			2
Burro grass	<i>Scleropogon brevifolius</i>			2
Desert wing-fruit	<i>Selinocarpus nevadensis</i>			2
Rusby's desert mallow	<i>Sphaeralcea rusbyi</i> ssp. <i>eremicola</i>	BLM Sensitive		1B
Holly-leaved tetraococcus	<i>Tetraococcus ilicifolius</i>			1B
Plummer's woodsia	<i>Woodsia plummerae</i>			2

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Appendix J

Upland Public Lands Assessment Criteria / Proper Functioning Condition

Appendix J

J.0 Upland Public Lands Assessment Criteria and Proper Functioning Condition

J.1 Upland Public Lands Assessment Criteria

Table J.1 – Upland Public Lands Assessment Criteria

			Unhealthy
Phase I: Soil Stability and Watershed Function			
A-horizon	Present and distribution un-fragmented	Present but fragmented distribution developing	Absent, or present only in association prominent plants or with other obstructions
Pedestaling	No pedestaling of plants or rocks	Pedestals present, but on mature plants only; no roots exposed	Most plants and rocks pedestaled; Roots exposed
Rills and gullies	Absent, or with blunted and muted feature	Small, embryonic, and not connected into dendritic pattern	Well defined, actively expanding, dendritic pattern established
Scouring or sheet erosion	No visible scouring or sheet erosion	Patches of bare soil or scours developing	Bare areas and scours well developed and contiguous
Sedimentation or dunes	No visible soil deposition	Soil accumulating around plants or small obstructions	Soil accumulating in large barren deposits or dunes or behind large obstructions
Phase 2: Distribution of Nutrient Cycling and Energy Flow			
Distribution of plants	Plants well distributed across site	Plant distribution becoming fragmented	Plants clumped, often in association with prominent individuals; large bare areas between clumps
Litter distribution and incorporation	Uniform across site	Becoming associated with prominent plants or other obstructions	Litter largely absent
Root distribution	Community structure results in rooting throughout the available soil profile	Community structure results in absence of roots from portions of the available soil profile	Community structure results in rooting in only one portion of the available soil profile
Distribution of photosynthesis	Photosynthetic activity occurs throughout the period suitable for plant growth	Most photosynthetic activity occurs during one portion of the period suitable for plant growth	Little or no photosynthetic activity on location during most of the period suitable for plant growth
Phase 3: Recovery Mechanisms			
Age class distribution	Distribution reflects all species	Seedlings and young plants missing	Primarily old or deteriorating plants present
Plant vigor	Plants display normal growth form	Plants developing abnormal growth form	Most plants in abnormal growth form
Germination micro site	Micro sites present and distributed across the site	Developing crusts, soil movement, or other factors degrading micro sites; developing crusts are fragile	Soil movement or crusting sufficient to inhibit most germination and seedling establishment

J.2 Proper Functioning Condition (PFC)

J.2.1 Description of PFC

PFC is a methodology

PFC is a methodology for assessing the physical functioning of riparian and wetland areas. The term PFC is used to describe both the **assessment process**, and a defined, on-the-ground **condition** of a riparian-wetland area. In either case, PFC defines a minimum or starting point.

The PFC **assessment** provides a consistent approach for assessing the physical functioning of riparian-wetland areas through consideration of hydrology, vegetation, and soil/landform attributes. The PFC assessment synthesizes information that is foundational to determining the overall health of a riparian-wetland area.

The on-the-ground **condition** termed PFC refers to *how well* the physical processes are functioning. PFC is a state of resiliency that will allow a riparian-wetland system to hold together during a 25 to 30 year flow event, sustaining that system's ability to produce values related to both physical and biological attributes.

PFC is not the sole methodology for assessing the health of the aquatic or terrestrial components of a riparian-wetland area.

PFC is not a replacement for inventory or monitoring protocols designed to yield information on the "Biology" of the plants and animals dependent on the riparian-wetland area.

PFC can provide information on whether a riparian-wetland area is physically functioning in a manner that will allow the maintenance or recovery of desired values, e.g., fish habitat, neotropical birds, or forage, over time.

PFC cannot provide more than strong clues as to the actual condition of habitat for plants and animals. Generally a riparian-wetland area in a physically non-functioning condition will not provide quality habitat conditions. A riparian-wetland area that has recovered to a *proper functioning condition* would either be providing quality habitat conditions, or would be moving in that direction if recovery is allowed to continue. A riparian-wetland area that is functioning-at-risk would likely lose any habitat that exists in a 25 to 30 year flow event.

PFC is not a desired (future) condition. It is a prerequisite to achieving desired condition.

Therefore to obtain a complete picture of riparian-wetland area health, including the biological side, one must have information on *both* physical status, provided through the PFC assessment, *and* biological habitat quality. Neither will provide a complete picture when analyzed in isolation. In most cases proper functioning condition will be a prerequisite to achieving and maintaining habitat quality.

PFC is a useful tool

PFC is a useful tool for prioritizing restoration activities. By concentrating on the "At Risk" systems, restoration activities can save many riparian-wetland areas from degrading to a non-functioning condition.

Once a system is non-functional the effort, cost, and time required for recovery is dramatically increased. Restoration of non functional systems should be reserved for those situations where the riparian-wetland has reached a point where recovery is possible, when efforts are not at the expense of "at risk" systems, or when unique opportunities exist. At the same time, systems that are properly functioning are not the highest priorities for restoration. Management of these systems should be continued to maintain PFC and further recovery towards desired condition.

PFC is a useful tool for determining appropriate timing and design of riparian-wetland restoration projects (including structural and management changes). It can identify situations where in stream structures are either entirely inappropriate or premature.

PFC is a useful tool that can be used in watershed analysis. While the methodology and resultant data is “Reach Based,” the ratings can be aggregated and analyzed at the watershed scale. PFC, along with other watershed and habitat condition information helps provide a good picture of watershed health and the possible causal factors affecting watershed health. Use of PFC will help to identify watershed scale problems and suggest management remedies and priorities.

PFC is not a watershed analysis in and of itself, or a replacement for watershed.

PFC is a useful tool for designing implementation and effective monitoring plans. By concentrating implementation-monitoring efforts on the “No” answers, greater efficiency of resources (people, dollars, time) can be achieved. The limited resources of the local manager in monitoring riparian-wetland parameters can be prioritized to those factors that are currently “Out of Range” or at risk of going out of range. The role of research may extend to validation monitoring of many of the parameters.

PFC was not designed to be a long term monitoring tool, but it may be an appropriate part of a well-designed monitoring program.

PFC is not designed to provide monitoring answers about attainment of desired conditions. However, it can be used to provide a thought process on whether a management strategy is likely to allow attainment of desired conditions.

PFC can reduce the frequency and sometimes the extent of more data and labor-intensive inventories. PFC can reduce process by concentrating efforts on the most significant problem areas first and thereby increasing efficiency.

PFC cannot eliminate the need for more intensive inventory and monitoring protocols. These will often be needed to validate that riparian-wetland area recovery is indeed moving toward or has achieved desired conditions, e.g., good quality habitat; or simply establish what the existing habitat quality is.

PFC is a Qualitative Assessment

PFC is a qualitative assessment based on quantitative science. The PFC assessment is intended for individuals with local, on-the-ground experience in the kind of quantitative sampling techniques that support the checklist. These quantitative techniques are encouraged in conjunction with the PFC assessment for individual calibration, where answers are uncertain, or where experience is limited. PFC is also an appropriate starting point for determining and prioritizing the type and location of quantitative inventory or monitoring necessary.

PFC is not a replacement for quantitative inventory or monitoring protocols. PFC is meant to complement more detailed methods by providing a way to synthesize data and communicate results.

J.2.2 PFC Checklist

The following section contains the PFC checklist as used by BLM staff and others in the field. Immediately following are the general instructions, and then the two pages of the checklist itself.

General Instructions

- The concept **Relative to Capability** applies wherever it may be inferred.
- This checklist constitutes the **Minimum National Standards** required to determine Proper Functioning Condition of lotic riparian-wetland areas.
- As a minimum, an **ID Team** will use this checklist to determine the degree of function of a riparian-wetland area.
- Mark one box for each element. Elements are numbered for the purpose of cataloging comments. The numbers do not declare importance.
- For any item marked **No**, the severity of the condition must be explained in the **Remarks** section and must be a subject for discussion with the ID Team in determining riparian-wetland functionality. Using the **Remarks** section to also explain items marked **Yes** is encouraged but not required.
- Based on the ID Team's discussion, **functional rating** will be resolved and the checklist's summary section will be completed.
- Establish photo points where possible to document the site.

Proper Functioning Condition (PFC) ratings for evaluated desert springs, riverine segments and tributaries in various regions of the nemo planning area.

Table J.2 – PFC Ratings

		PFC Rating¹
Amargosa River-Amargosa Canyon to Dumont Reach	Tecopa	FAR-UT
Amargosa River-Grimshaw Lake	Hot Springs	FAR-DT
Amargosa River-Shoshone to Amargosa Canyon Reach	Shoshone	FAR-NT
Amargosa River-Nevada State Line to Shoshone Reach	Death Valley Junction	PFC
China Ranch Wash	Tecopa	PFC
Lower Carson Slough	DV Junction	PFC
Amargosa Spring	Silurian Valley	PFC
Corral Spring	California Valley	FAR-DT
Coyote Holes Spring	Kingston Wash	FAR-DT?
Crystal Spring	Kingston Mountains	FAR-UT
Dog Boots Spring	Ibex Hills	PFC
Sparrow Seep	Ibex Hills	PFC
Horsethief Spring	Kingston Mountains	FAR-UT
Kingston Spring	Kingston Wash	FAR-NT
Old Mormon	Avawatz Mountains	NF
Owl Hole Spring	Owlshead Mountains	NF
Quail Spring	Owlshead Mountains	FAR-DT
Salt Creek	Silurian Valley	FAR-UT
Smith Spring	Kingston Mountains	FAR-UT
Tule Spring	California Valley	FAR-DT
Twelvemile Spring	Chicago Valley	FAR-DT
Weaverdick Spring	Avawatz Mountains	FAR-NT

¹ FAR – Functioning at Risk

DT – Downward Trend

NT – NO Apparent Trend

UT – Upward Trend

NF – Non-functional

PFC – Proper functioning condition

Lotic Standard Checklist

Name of Riparian-Wetland Area: _____

Date: _____ Area/Segment ID: _____ Miles: _____

ID Team Observers: _____

			Hydrologic
			Floodplain inundated in “relatively frequent” events (1-3 years)
			Active/stable beaver dams
			Sinuosity, width/depth ratio, and gradient are in balance with the landscape setting (i.e., landform, geology, and bio-climatic region)
			Riparian zone is widening or has achieved potential extent
			Upland watershed not contributing to riparian degradation
			Vegetative
			Diverse age-class distribution (recruitment for maintenance/recovery)
			Diverse composition of vegetation (for maintenance/recovery)
			Species present indicate maintenance of riparian soil moisture characteristics
			Stream bank vegetation is comprised of those plants or plant communities that have root masses capable of withstanding high streamflow events
			Riparian plants exhibit high vigor
			Adequate vegetative cover present to protect banks and dissipate energy during high flows
			Plant communities in the riparian area are an adequate source of coarse and/or large woody debris
			Soils-Erosion Deposition
			Floodplain and channel characteristics (i.e., rocks, overflow channels, coarse and/or large woody debris) adequate to dissipate energy
			Point bars are revegetating
			Lateral stream movement is associated with natural sinuosity
			System is vertically stable
			Stream is in balance with the water and sediment being supplied by the watershed (i.e., no excessive erosion or deposition)

Summary Determination

Functional Rating:

Proper Functioning Condition _____

Functional – At Risk _____

Nonfunctional _____

Unknown _____

Trend for Functional – At Risk:

Upward _____

Downward _____

Not Apparent _____

Are factors contributing to unacceptable conditions outside BLM's control or management?

No _____

Yes _____

If yes, what are those factors?

___ Flow regulations

___ Mining activities

___ Upstream channel conditions

___ Channelization

___ Road encroachment

___ Oil Field water discharge

___ Augmented flows

___ Other (specify) _____

Remarks

Lentic Standard Checklist

Name of Riparian-Wetland Area: _____

Date: _____ Area/Segment ID: _____ Miles: _____

ID Team Observers: _____

			Hydrologic
			Riparian-wetland area is saturated at or near the surface or inundated in “relatively frequent” events (1-3 years)
			Fluctuation of water levels is not excessive
			Riparian-wetland zone is enlarging or has achieved potential extent
			Upland watershed not contributing to riparian-wetland degradation
			Water quality is sufficient to support riparian-wetland plants
			Natural surface or subsurface flow patterns are not altered by disturbance (i.e., hoof action, dams, dikes, trails, roads, rills, gullies, drilling activities)
			Structure accommodates safe passage of flows (e.g., no headcut affecting dam or spillway)
			Vegetation
			Diverse age-class distribution (recruitment for maintenance/recovery)
			Diverse composition of vegetation (for maintenance/recovery)
			Species present indicate maintenance of riparian-wetland soil moisture characteristics
			Vegetation is comprised of those plants or plant communities that have root masses capable of withstanding wind events, wave flow events, or overland flows (e.g., storm events, snow melt)
			Riparian-wetland plants exhibit high vigor
			Adequate vegetative cover present to protect shoreline/soil surface and dissipate energy during high wind and wave events or overland flows
			Frost or abnormal hydrologic heaving is not present
			Favorable microsite condition (i.e., woody debris, water temperature, etc.) is maintained by adjacent site characteristics
			Soils-Erosion Deposition
			Accumulation of chemicals affecting plant productivity/composition is not apparent
			Saturation of soils (i.e., ponding, flooding frequency and duration) is sufficient to compose and maintain hydric soils
			Underlying geologic structure/soil materials/permafrost is capable of restricting water percolation
			Riparian-wetland is in balance with the water and sediment being supplied with the watershed (i.e., no excessive erosion or deposition)
			Islands and shoreline characteristics (i.e., rocks, course and/or large woody debris) adequate to dissipate wind and wave event energies

Summary Determination

Functional Rating:

Proper Functioning Condition _____

Functional – At Risk _____

Nonfunctional _____

Unknown _____

Trend for Functional – At Risk:

Upward _____

Downward _____

Not Apparent _____

Are factors contributing to unacceptable conditions outside BLM's control or management?

No _____

Yes _____

If yes, what are those factors?

___ Dewatering

___ Mining activities

___ Watershed condition

___ Dredging activities

___ Road encroachment

___ Land ownership

___ Other (specify) _____

Remarks

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Appendix K

Current Management Situation

Changes to this chapter in developing the FEIS

1. Some mining laws added in Federal Laws section
2. Updates to Minerals section to reflect thresholds established in the new mining rules for notice and plan of operations in MUC.
3. Updates to the Wild Horse and Burros section to include additional information on historic use and put current management in context.

Appendix K

K.0 Current Management Situation

K.1 Federal Laws

The purpose of Appendix K is to document the current public land management policies in those portions of the Northern and Eastern Mojave Planning Area (NEMO Planning Area) administered by the Bureau of Land Management (BLM). This evaluation will aid in defining the No Action Alternative and Alternatives proposed in Chapter 2 of this document. The need for revision of land use policies in the NEMO Planning Area is based largely on the USFWS listing of the desert tortoise as a threatened species and several other species under the Federal Endangered Species Act, signing of the California Desert Conservation Area Plan (CDCA Plan) (BLM 1980), tortoise population declines, and the recommendations in the 1994 Desert Tortoise (Mojave Population) Recovery Plan¹. The adoption of National Standards and Guidelines and the need to adopt regional standards for public land health, Guidelines for Grazing Management, Congressional designation of wilderness and release of some wilderness study areas from further consideration are also considered. See the CDCA Plan for more information on all elements of the CDCA Plan.

K.2 Applicable Federal and State Laws

The Bureau of Land Management operates under a number of federal and state laws and regulations. The following is a brief listing of the major laws that affect BLM's management of public lands. Some of these laws are specifically referenced within this EIS and some are here as reference. Decisions within the EIS will not affect BLM's responsibility to adhere to and/or enforce these laws.

K.2.1 Federal Laws

National Environmental Policy Act (NEPA)

NEPA requires all federal agencies to analyze the environmental impacts of any proposed action affecting public lands or resources, to involve the public in decision-making, and to disclose environmental impacts to the public. NEPA also requires that the analysis be interdisciplinary and issue driven and that the cumulative and indirect effects be reported. An EIS is required for any major federal action significantly affecting the quality of the human environment.

Taylor Grazing Act (TGA)

With amendments, this act is the basic legislative authority governing grazing use on the vacant public lands of the United States.

Federal Land Policy and Management Act (FLPMA): This law established public land policy providing for the retention and management of the public lands held in Federal ownership, including special provisions for land use planning and range management.

¹ Recovery Plan (USFWS 1994a) (see Sec. 3.1.3 - *Desert Tortoise (Mojave Population) Recovery Plan*)

Mining Law of 1872

This Act provides that citizens may enter and explore the public domain. If they find “valuable mineral deposits”, they may obtain title to the land on which such deposits are located. It also requires that not less than \$100 worth of work be performed on each claim per year. The patenting provision was placed under a moratorium by the 1994 Appropriations Act, and through successive legislation remains in effect as of the date of the preparation of the NEMO Plan.

Mining and Minerals Policy Act of 1970

This Act declares that it is the continuing policy of the Federal Government to foster and encourage private enterprise in the development of a stable domestic minerals industry and the orderly and economic development of domestic mineral resources.

National Materials and Minerals Policy, Research and Development Act of 1980

This Act restates the need to implement the 1970 Act and requires the Secretary of the Interior to improve the quality of minerals data in Federal land-use decision-making. In April 1982, the President delivered to Congress the first annual report required by the 1980 Act, which provided specific guidance to implement these acts.

Public Rangelands Improvement Act of 1978 (PRIA)

This legislation supports the authority of the Taylor Grazing Act and the Federal Land Policy and Management Act by emphasizing the improvement of rangeland conditions.

Wild Free-Roaming Horse and Burro Act

This act provides for the protection, management, and control of wild horses and burros on public lands administered by the BLM and the U.S. Forest Service. Its’ goal is to keep the wild horse herds from disappearing, yet keep the herds at appropriate management levels to maintain a healthy functioning ecosystem. The act allows removal of animals if necessary to “restore a thriving natural ecological balance to the range, and protect the range from the deterioration associated with overpopulation.”

Endangered Species Act (ESA)

This act requires the federal land management agencies to protect and enhance all species and their habitats on federal lands that are listed as endangered, threatened, or proposed for listing. Included in this act in Section 7 is a required process for all federal agencies to consult with the U.S. Fish and Wildlife Service regarding any federal action that may affect a federally listed threatened or endangered species.

Clean Water Act (CWA)

This law's objective is to restore and maintain the chemical, physical, and biological integrity of the nation's waters. It directs federal agencies to comply with water quality standards, including initiating actions to control non-point sources of pollution such as grazing, as determined by each respective state government as approved by EPA administrators.

Coastal Zone Act Re-authorization (CZARA) as amended in 1990

This act is applicable to all waters in California and places requirements on the states to address non-point source pollution in several categories, including rangeland. The federal agencies, such as the Bureau of Land Management, are to cooperate with the state in fulfilling these requirements.

Federal Noxious Weed Act of 1974

This act as amended in 1990 (Section 15), adds further responsibility for the federal land management agencies, in cooperation with state agencies, to actively pursue the control of undesirable plants using an integrated management approach.

Antiquities Act of 1906 and amendments

This act provides for the protection of historic and prehistoric sites and objects of antiquity on federal lands; and authorizes scientific investigation of such sites and antiquities, subject to permits and other regulatory requirements. Paleontological resources are also covered by this act.

Executive Order 13007

This executive order affirms that Native Americans have the right to access specific spiritual and sacred sites on federal lands as long as that access is not inconsistent with the administrative goals of the BLM.

Archeological Resources Protection Act

This act prohibits the removal, sale, receipt, and interstate transportation of archeological resources obtained without permits from public or Indian lands and authorizes agency permit procedures for investigations of archeological resources on public lands under the agency's control. Amendments state that the Secretaries of the Interior, Agriculture and Defense shall develop plans for surveying the lands under their control to determine the nature and extent of archeological resources, prepare a schedule for surveying those lands that are likely to contain the most scientifically valuable archeological resources, and develop documents for reporting suspected violations. Tribes are given 30 days to comment on permits for the excavation of archeological resources within their "Aboriginal Territory."

National Historic Preservation Act of 1966 (NHPA)

This act established historic preservation as a national policy and defines it as the protection, rehabilitation, restoration, and reconstruction of districts, sites, buildings, structures, and objects significant in American history, architecture, archeology, engineering, and culture. Significance is determined by specific criteria. The National Park Service maintains the National Register of Historic Places.

Executive Order of April 29, 1994

This Executive Order established that it is the policy of the United States that formal government-to-government relationships shall be established between agency heads and all formally recognized Native American tribes. This policy provides the impetus for developing protocols and memoranda of understanding between the BLM and the federally recognized tribes. BLM has also applied the policy to unrecognized Native American Indian communities.

K.2.2 State Laws (California and Nevada)

Porter-Cologne Water Quality Control Act

This act establishes a comprehensive water quality program for the state of California, through the State Water Resources Control Board, including a non-point source program on rangelands. This act gives authority to nine semi-autonomous Regional Water Quality Control Boards within the state.

California Food and Agriculture Code, Section 403 and Title 3, California Code of Regulations, Section 4500

These codes provide the responsibilities and priorities governing the California Department of Food and Agriculture to protect the agricultural industry of the state by controlling weeds on all lands, including federally owned rangelands.

California Endangered Species Act

This act is administered by the California Department of Fish and Game, and is patterned after the federal Endangered Species Act. The Act provides state listing and protection responsibilities for species determined to be specifically protected within California.

California Native Plant Protection Act

This 1977 act provided for the California Department of Fish and Game to “preserve, protect, and enhance endangered plants in California”.

Surface Mining and Reclamation Act (SMARA)

Enacted by the State of California Legislature in 1975, the SMARA is the State’s response to society’s need for a continuing supply of mineral resources, while preventing, as much as possible, damage from mining activities to public health, property, and the environment. Although Public Resources Code Sections 2711 and 2712 focus on reclamation, they also state the need to consider that mineral extraction and production are essential and should be encouraged. SMARA requires the State Geologist to classify land in California for mineral resource potential. “Local governments are required to incorporate the report and maps into their General Plans and consider the information when making land-use decisions.”

K.3 Existing Management Situation

K.3.1 Air

There are a number of basic federal statutes, executive orders and state laws that direct BLM’s response to air quality issues. Generally, compliance with the various laws and policy has been achieved through the NEPA process. Through the NEPA process proposed projects are evaluated as to their potential emissions and the compliance with law, and appropriate mitigation measures are identified.

K.3.2 ACECs

The Federal Land Management Policy Act (FLPMA) established the authority to designate Areas of Critical Environmental Concern (ACEC) (Section 103 (a)). The Act defined an ACEC as an area within the public lands where special management attention is required. The CDCA Plan and publication in the Federal Register established 72 ACECs. Since that time several additional ACECs have been established and a few have been deleted. Within the NEMO Planning Area there are 11 ACECs remaining on BLM lands. The ACECs were designated due to historic, prehistoric, wildlife, scenic and plant values. Each ACEC has a management plan, which spells out management prescriptions necessary to meet the objectives for the area. These prescriptions include details like signing, patrol needs, monitoring, construction of facilities and possible restrictions on uses. Specific details on the ACECs can be found in the individual ACEC plans.

K.3.3 Wildlife

A number of public laws, acts and executive orders provide direction to the BLM in managing wildlife resources. Some of these are the National Environmental Policy Act of 1969; Endangered Species Act of 1973 (as amended); Sikes Act; Executive Order No. 11514, Protection and Enhancement of Environmental Quality; Executive Orders 11644 and 11989, Off-Road Vehicles on Public Lands; Executive Order 11990, Protection of Wetlands; Executive Order 11988, Floodplain Management; and the Federal Land Policy And Management Act of 1976. The BLM has translated applicable parts of these laws, acts, and executive orders into policies and guidance, which are contained within the BLM manual system. BLM Manual 6840 provides direction to the wildlife program for Threatened and Endangered Wildlife, and Manual 6740 provides direction for Wetland-Riparian Area Protection and Management.

The CDCA Plan identifies wildlife management goals. Several management tools are available to meet the objectives of the Wildlife Element of the CDCA Plan. The principal one is activity plans such as ACEC plans and habitat management plans (HMPs) which were identified in the CDCA Plan. An approved plan of operation is required for any mining operation (with the exception of casual use) prior to commencing work in an ACEC (43 CFR Ch II Subpart 3809-Surface Management), regardless of the size of the operation. Mining plans of operation trigger the NEPA review and compliance process. Some fish and wildlife resources requiring special management attention can be protected in Multiple-Use Class L through the designation of routes. A fourth tool used in the CDCA Plan is designation of Special Areas (SA). This allows highlighting habitats and species known to be important for special consideration of projects in the environmental assessment process. For a detailed discussion of the current management situation in NEMO for the desert tortoise, see Foreman (1998).

Bats

Bat management concerns in BLM management activities center primarily around mineral and energy production issues and the management of recreation use of cave resources. Bureau policy specific to bats is based on a Master Memorandum of Understanding between the BLM and Bat Conservation International. Signed on March 20, 1993, the MOU states the joint desire of BLM and BCI to "...cooperate fully with each other in matters relating to the inventory and monitoring of key bat habitats, education, research and management improvement of bat habitats through development and maintenance activities on BLM lands." The Master MOU has resulted in specific Washington Office guidance to field offices regarding "Use of Caves Important to Bats" and "Closure of Abandoned Mines and Preservation of Bat Habitat." Instruction Memorandum No.1 93-291 states that "...State Directors should ensure that sufficient expertise is developed in each State to evaluate effects of BLM management policies and activities on bats."

In general, BLM policy requires an inventory of mines proposed for renewed mining prior to initiating mining activity. The policy also requires minimization of impacts to bat roosts and foraging habitat; and where impacts to bats are determined likely as the result of an authorized mining action, humane treatment and elimination of bat occupancy/entry into the subject mine. In areas where no active mining occurs, bats are occasionally documented in specific mine shafts and/or adits, but these bat family groups or colonies are often at risk due to human visitation disturbance and vandalism impacts. Many bat species will abandon maternity, hibernation, and/or day roosts with a single inappropriate human visitation.

Very little formalized bat inventory has occurred on public lands within the planning area. Bat use of a specific mine is occasionally documented during field visits to complete NEPA analysis on mining actions, but there is seldom adequate time to conduct appropriate surveys and/or develop meaningful mitigation unless the proposed mining action is located in a MUC L designated area. The existing MUC M designation allows locatable mining actions to be conducted under a Notice of Proposed Action. Under Code of Federal Regulations (CFR) 3809 mining notice provisions, BLM has 15 days to review the proposed mining activity and take any actions necessary to stop or modify the proposed action. When there are known special status wildlife species in an area, site surveys are necessary to evaluate the proposed action. Due to mandated time constraints, it is seldom possible to schedule and conduct the necessary inventories, recommend meaningful mitigation, and prepare supporting report documentation in the time allowed. Additionally, many special status species, like bats, have a limited time of year when adequate inventories can be conducted. When bats are documented to occur in a specific mine or group of mines through NEPA analysis of mining actions, mitigation that is designed to secure replacement bat habitat for the habitat to be lost to mining, seldom occurs.

Desert Bighorn Sheep

Management plans for this species in southwestern deserts commonly have defined mountain sheep populations on the basis of their geographic location, usually a single mountain range (Bureau of Land Management 1986). Movement corridors and the ranges/areas in which bighorn sheep occur have been defined in the CDCA Plan.

The BLM developed the “Rangewide Plan for Managing Habitat of the Desert Bighorn Sheep on Public Lands” (1986) in which the goal was to “facilitate recovery of desert bighorn sheep in the Southwest through a balanced program of inventory, on-the-ground projects, monitoring, and research.” The “Mountain Sheep Ecosystem Management Strategy in the 11 Western States and Alaska” (1995) was developed with the goal of “providing habitat of sufficient quantity and quality to sustain optimum populations and a natural abundance of wildlife on public lands...” CDFG in cooperation with BLM is preparing “metapopulation” plans for various regions of the desert. These will set population and habitat goals and prescribe management actions.

K.3.4 Vegetation

Vegetation, especially in the riparian areas, is affected by visitor use and authorized activities, such as mining, livestock grazing, wild horses and burros and wildlife development. These activities will continue to affect vegetation, as will wildfire. Recreation use is mostly controlled through route designations, which limit OHV access to critical sites. Except for mining notices, all proposed activities receive a NEPA review that includes field checks for special status plants and UPAs. The NEPA review includes the development of expected impacts and recommended mitigation. Minerals actions conducted on MUC class M or Class I lands under a Notice of Proposed Action receive minimal review under NEPA and do not need authorization. The minerals operator may proceed after 15 days from the filing of the notice. This does not allow adequate time to mitigate general impacts to vegetation.

The CDCA Plan identified a number of unusual plant assemblages (UPAs) and established goals to preserve their habitat and ensure the continued existence of the plant assemblage. These UPAs include areas which are unique in the desert because of size, unusual age, areas associated with water (like riparian forests, mesquite bosques and marshes) and other unique vegetation areas. The CDCA Plan states that all UPAs will be taken into account when conducting site-specific NEPA analyses. The CDCA Plan also identified the need to conduct inventory to identify additional UPAs.

Special Status Plants

It is BLM’s policy to carry out management, consistent with the principles of multiple use, for the conservation of Special Status Plant Species and their habitats and will ensure that actions authorized, funded, or carried out do not contribute to the need to federally list any of the species as threatened or endangered. Potential projects, which could impact special status plant species, will normally be reviewed through the NEPA process. If potential impacts are found the impact is avoided by modifying the project to avoid special status plants and their habitats. For MUC class M lands for small (under five acres) mining projects that can be filed under a notice, the fifteen-day review period may be insufficient to conduct record searches and field inventories and recommend mitigation measures.

Noxious Weeds

The BLM has been actively eradicating noxious weeds for a number of years. In the CDCA, much of the effort has been aimed at the eradication of salt cedar, which invades and damages riparian areas. The interest in weed management has been increasing in recent years. Executive Order 13112 was issued in February 1999 to address noxious weeds. In addition the BLM has issued several policy statements relating to noxious weeds. Most relate to detection and reducing mechanisms that spread weeds. These include: 1) the use of native seed that is certified weed free, 2) the use of weed-free mulch, 3) the requiring of weed-free hay on BLM lands (as it becomes available), and 4) the need to inventory for and report locations and acres of noxious weeds.

K.3.5 Water

A large number of water sources exist within the NEMO planning area. Known surface water sources in the northwestern portion of the NEMO planning area include numerous streams, springs, seeps, and a lake. Most of the mountain ranges in the northwestern area reach over 10,000 feet elevation and have numerous steep canyons that support streams. These include the Middle Park, Pleasant, Happy, Surprise, Hall, Jail and Tubor Canyons in the Panamint mountains, Thompson Canyon in the Argus Range, Craig, Hunter, Beverage, Keynot, Mc Elvoy, Pat Keys and Willow Creek Canyons in the Inyo Mountains and Weyman, Cottonwood, Toler, McAfee and Perry Akin Canyons in the White Mountains. Weyman, Cottonwood, McAfee and Perry Akin creeks all support trout fisheries and are diverted near their mouth for irrigation. Cottonwood Creek alone supplies most of the water for 1,600 acres of alfalfa (nearly 10,000 acre feet from April to November). Several large springs occur on private land in Deep Springs Valley. One, Corral Spring, has a very large flow and is one of the major sources of water for Deep Springs Lake, which covers nearly 2,000 acres, and an associated wetland. Numerous additional springs and seeps are scattered throughout the northwest portion of the planning area. Other significant water sources include the Amargosa River, Willow Creek, Grimshaw Lake, Salt Creek and Tecopa Hot Springs.

Groundwater is found under most of the NEMO planning area and varies greatly in depth and quality. The many groundwater basins within the NEMO planning area are recharged from surface and subsurface infiltration. Depletion of groundwater basins and diminishment of water quality are some of the concerns with this resource. Groundwater is the principle source within the NEMO planning area for desert springs, seeps, and streams. Maintenance of groundwater quality and quantity is critical to the survival of desert surface waters and their associated plant and animal life.

K.3.6 Cultural Resources

Processes for managing and evaluating cultural resources are defined in several pieces of legislation, most notably the National Historic Preservation Act (NHPA) of 1966 (as amended). The NHPA established requirements for considering the effects of agency actions on cultural resources, proactive management of cultural resources because of their importance to the nation, and consultation with other agencies or interested parties regarding their management. The BLM has a programmatic agreement with the State Historic Preservation Officer regarding implementation of the NHPA. Significant resources are nominated to the National Register of Historic Places (NRHP) as funding and other resources permit. Determinations as to whether cultural resources are eligible for listing on the National Register are usually made on a site-by-site, ad hoc basis. Inventory and recordation primarily occur when required because of a proposed action. Additional guidelines for management of cultural resources are included in the CDCA Plan, including MUC guidelines. Certain mining activities, which can affect cultural resources, may occur 15 days after a Notice of Intent is filed, subject to resource protection measures identified within that time frame. Site-specific management for significant cultural resources is provided in ACEC management plans, where applicable.

Cultural resources at all of the very high and high sensitivity cultural sites in MUC “I” and “M” are subject to potential effect from mining actions under CFR 3809 following a 15-day period after filing of a Notice of Intent. Within this 15-day time frame the following activities may need to occur: inventory, evaluation, and identification of avoidance and/or recovery strategies for these sensitive resources. Consultations with Native Americans and with the State Office of Historic Preservation must also occur within the 15-day time period. When significant resources are identified within the 15-day period, consultation and avoidance strategies or other mitigation are identified and additional delays could occur until these evaluations are completed. However there is a risk from inadvertent damage or destruction of such resources if they cannot be identified within the 15-day time frame. Because of the low level of existing inventory data it is not possible to fully measure the potential loss of cultural, traditional, and public values in these areas from proposed actions unless these predisturbance surveys can be performed. This impact is generally irreversible and irretrievable.

Mining activity may also attract or facilitate other activities into an area if the mining activity results in improved access. Other activity attracted into the area or facilitated by it may increase the level of impacts to cultural resources in the area. The known sensitive cultural resources that need to be evaluated include historic mining complexes that may be or are known to be historically valuable and/or are popular sites for public visitation and offer excellent interpretive/heritage tourism opportunities. They also include prehistoric sites of a unique, unusual, or scientifically significant nature, or that hold sacred or cultural value to Native Americans such as rock alignments, sites at which stone was quarried for tool manufacture, or habitation sites with subsurface deposits. The CDCA Plan called for these high sensitivity areas to be adequately inventoried. Due to resource limitations less than 10% of the areas has been inventoried to date.

K.3.7 Minerals

Mineral Resource Management

Federal regulations recognize three methods for disposing minerals from the public lands. Saleable minerals are those mineral materials that are disposed via a sales contract (common stone, gravel, fill dirt, etc.). Such materials are also permitted to public agencies via a Free Use Permit. Leasable minerals are those minerals for which the government receives a fixed percentage of their sales price (a royalty) under the terms of a lease. Leasable minerals include oil & gas, geothermal production, coal, sodium and potassium minerals. Locatable minerals are those minerals for which one can locate a mining claim under the General Mining Law of 1872, including gold, silver, talc, etc. In general, public lands are open to mineral exploration and development except where specifically closed or withdrawn from the public land laws.

Mineral Material Disposals (Sales & Permits)

A BLM Field Manager may dispose of mineral materials upon receipt of a written request or upon his/her own initiative. These disposals include Sale Contracts, Free Use Permits (to public agencies or non-profit organizations) and Community Pits (for sales to the general public). A written request includes a mining plan that describes how the material will be removed and how the site will be reclaimed.

The Field Office staff then prepares an environmental document as required by the National Environmental Protection Act (NEPA); this generally means a Categorical Exclusion, Environmental Assessment or Environmental Impact Statement, as appropriate. At a minimum, these environmental documents generally include consideration of and mitigation measures for cultural resources and threatened and endangered species. If/when the request is approved, the contract or permit is written to include appropriate mitigation measures and reclamation standards. Performance bonds are required for sale contracts of \$2000 or greater.

No mineral material disposals are issued in Wilderness or Wilderness Study Areas. Mineral materials may be disposed of in lands classified as “I”, “M” or “L” in the California Desert Conservation Area Plan. An Environmental Assessment, rather than Categorical Exclusion, is prepared for new cases affecting 5+ acres of Class L land (MUC Guidelines, CDCA Plan).

Mineral Leases

Mineral leases are generally issued by the California State Office rather than by a Field Manager prior to conducting operations on the lease. The lessee must submit an appropriate “Notice” or application to the field manager prior to conducting operations on the lease. The Field Office staff then analyzes the proposed action and prepares an environmental document as required by NEPA (a Categorical Exclusion, Environmental Assessment or Environmental Impact Statement, as appropriate). At a minimum, such analysis includes consideration of threatened and endangered species and cultural resources. Other issues (e.g., underground aquifers, road standards, etc.) are also considered as appropriate. The field manager includes reclamation measures and mitigation measures in any authorization of the proposed action.

No mineral leases are issued in Wilderness or Wilderness Study Areas. However, if an area containing a valid lease is absorbed by the National Wilderness Preservation System, the leaseholder is accorded the rights granted under the terms of that lease. No such leases are included in any Wilderness or Wilderness Study Area in the NEMO planning area. Mineral leases can be issued in lands classified as L, M or I by the California Desert Conservation Area Plan. An environmental document, as per NEPA guidelines, is prepared when the Field Manager receives an Application/Notice for lease-related operations in Class L, M or I land; a 60-day public comment period is provided for lease-related Environmental Assessments in Class L lands (MUC Guidelines, CDCA Plan).

Locatable Minerals (Mining Claims)

The Location Notice for any mining claim must be filed and registered both with the county recorder of the appropriate county and the BLM State Office in Sacramento, California. In general, a valid mining claim is one that is properly located, registered, and contains a discovery of a valuable mineral deposit. A valuable mineral deposit is one that is shown to be economically valuable or can be worked as a paying mine (Maley, 1985). An operator has the responsibility to prevent unnecessary and undue degradation of Federal lands resulting from operations authorized by the mining laws. The regulations for avoiding unnecessary or undue degradation to the public lands are contained in 43 CFR 3809.

The Code of Federal Regulations recognizes three levels of Mining Law-related operations on public lands. Casual use operations are those activities that ordinarily result in only negligible disturbance of public lands and resources (gold panning, metal detecting, etc.). No approval or notification is needed for casual use activities on public lands. Activities are not considered casual use if they involve using explosives, mechanized earth-moving equipment, or motorized vehicles in an area designated as closed to off-road vehicles.

Other than casual use activities, the BLM has decided (65 FR 70002, Nov. 21, 2000) that the threshold between Notice and Plan-level activity) should generally be set between exploration and mining. In the California Desert, an operator must file a "Notice" prior to initiating operations that disturb 5 acres or less or involve sampling less than 1,000 tons in Class M and I land. Among other things, the Notice must describe the project, the reclamation measures and must be received by the Field Manager at least 15 days prior to commencing operations. Approval of a Notice by the Field Manager is not required, and properly filed Notices constitute authorization for off-road vehicle use. Notice-type operations are required to comply with all pertinent state and federal laws, including the California Surface Mining And Reclamation Act (SMARA), threatened and endangered species protection, and cultural resource protection. Existing programmatic agreements are in place for many small mining actions.

The BLM does not accept Notices for non-casual use activities in Class L land, Areas of Critical Environmental Concern, Wilderness and Wilderness Study Areas. An operator must file a Plan of Operations for any operation in these areas or which exceeds 5 acres or 1,000 tons of sampling in Class "M" or "I" lands. Among other things, a plan of operations must describe when, where, how and what type of operation is to be conducted and what measures will be taken to reclaim disturbed areas. The Field Office staff is required to promptly prepare an Environmental Assessment for any plan of operations.

Any such environmental assessment must include consideration for any cultural elements that may be affected, including as appropriate cultural resources and threatened and endangered species. The Field Manager cannot approve a Plan of Operations if the BLM has need to comply with section 106 of the National Historic Preservation Act or Section 7 of the Endangered Species Act. An operator must file a "Plan of Operations" for any operation in these areas or which exceeds 5 acres or 1,000 tons of sampling in Class "M" or "I" lands. An operator must also post a financial guarantee sufficient to cover 100% of the cost of reclamation, prior to conducting operations under a "Plan of Operations" or a Notice. An exception will be made for notices filed with BLM on January 20, 2001 unless the operator modifies the notice or extends it under part 3809.333. This financial guarantee must either be certified by a California-registered engineer, or accepted by a state agency but in no case, can the guarantee be less than \$2000/acre.

Wilderness Study Areas

Federal Regulations allow mining claim location, prospecting, and mining operations in Wilderness Study Areas (43 CFR 3802), but only in a manner that will not impair the suitability of the area for inclusion in the wilderness system. An approved "Plan of Operations" is required for operations within lands under wilderness review. The Field Manager acknowledges and reviews a "Plan of Operations" to determine if the proposed operations impair the suitability of the project area for preservation as wilderness. He/she may approve the plan subject to mitigating measures that prevent impairment of the suitability of the area for wilderness, or notifies the operator why the Plan is not acceptable. No plans of operation are on file for any of the Wilderness Study Areas in the NEMO Planning Area.

Wilderness

New mining claims cannot be located in a designated wilderness area. Some designated wilderness areas occasionally include mining claims that were located prior to the date the area was included in the National Wilderness Preservation System. Federal regulations (43 CFR 8560.4-6) state that no mining operations shall be conducted on BLM-administered wilderness areas without an approved Plan of Operations as per 43 CFR 3809.

As stated above, current regulations require a Plan of Operations to include a reclamation bond as required by state and federal statutes; the bond amount must cover the cost of reclaiming the land in such a way as to prevent the impairment of their wilderness character (43 CFR 8560.4-6(h)). A Field Manager cannot approve this “Plan of Operations” unless or until a BLM mineral examiner completes a validity examination of the unpatented mining claim. As stated above, an unpatented mining claim is valid if that claim contains a discovery mineral deposit that might reasonably be developed into a paying mine; the claim is invalid if it does not contain such a discovery.

K.3.8 Motor Vehicle Access Management

The BLM manages motor vehicle access in the California desert consistent with FLPMA, Executive Order (EO) 11644, EO11989, Title 43 of the Code of Federal Regulations (CFR) 8340 et seq., and the CDCA Plan, as amended in 1982 and 1985. The increased popularity and widespread use of off-highway vehicles on federal lands in the 1960’s and early 1970’s prompted the development of a unified policy for such use. Executive Order 11644 (“Use of Off-Road Vehicles on the Public Lands”) was issued on February 9, 1972 (87 FR 2877), to establish these policies. It provided for procedures to control and direct the use of OHV’s on federal lands so as to

- Protect the resources of those lands
- Promote the safety of all users of those lands
- 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 OHV’s may and may not be used. Under the order, OHV use can be restricted or prohibited to minimize:

- Damage to the soil, watersheds, vegetation, or other resources of the federal lands
- Harm to wildlife or wildlife habitats
- 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 FR 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:

- Close areas or trails to OHVs causing considerable adverse effects
- Designate lands as closed to OHVs unless the lands or trails are specifically designated as open to them

The BLM developed regulations (43 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.

In 1980, the BLM addressed designation of areas where OHVs may be used and management of their use for the California desert in the CDCA Plan, Motor Vehicle Access Element. In the CDCA Plan, different levels of access were provided for both areas and specific routes in the desert. Areas could be “open”, “closed”, or “limited”. Generally “open” areas are open to vehicle use throughout the area and “closed” areas are closed to vehicle use throughout the area. There are exceptions for both of these areas and these are further defined in the CDCA Plan and in other referenced legislation and regulation.

Within “limited” areas, specific route designations are to be made, and at a minimum, use will be restricted to existing routes of travel. Routes are to be designated “open”, “closed”, or “limited”, and the guidelines are established based on Multiple-use class. Within MUC I, unless it is determined that further limitations are necessary, those areas not “open” will be limited to use of existing routes. Within MUC M, access will be on existing routes, unless it is determined that use on specific routes must be limited further. Within MUC L, due to higher levels of resource sensitivity, vehicle access will be directed toward use of approved routes of travel. Approved routes will include primary access routes intended for regular use and for linking desert attractions for the general public as well as secondary access routes intended to meet specific user needs. Routes not approved for vehicle access 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. (CDCA Plan, Amendment #3, 1982).

K.3.9 Livestock Grazing

Livestock grazing is primarily authorized under the Taylor Grazing Act as amended (43 U.S.C. 315, 315a through 315r). Additional authorities include the Federal Land Policy and Management Act of 1976, the Public Rangeland Improvement Act, several executive orders and public land orders. In addition, numerous land laws including the National Environmental Policy Act and the Endangered Species Act apply to the administration of grazing on the public lands. Grazing regulations are found in 43 CFR part 4100. The process to allocate grazing use involves a number of steps including the classification of an area as suitable for grazing, an adjudication process to determine who is eligible to graze, the determination of allocations, numbers of livestock, class of livestock (sheep, cattle and/or horses) and seasons of use. For the most part grazing use predates the Taylor Grazing Act (1934) and grazing use has been authorized under those provisions since the mid 1930s. The CDCA Plan readdressed all of these issues except for the adjudication of eligibility. In addition, it addressed additional prescriptions for grazing including monitoring needs, needs for allotment management plans (AMPs) and mitigation for resource conflicts such as sensitive wildlife species.

If an operator chooses to make less use than his full allocation he may apply for non-use (such as for droughts or other environmental reasons). If the non-use is for personal reasons (such as personal economic reasons) BLM may temporarily authorize another qualified applicant to graze the amount of authorized non-use. If an authorized operator chooses to give up his grazing authorization any qualified person may apply for the unused allocation.

All of the CDCA Plan prescriptions (including AUM allocations, seasons of use, area of use, restrictions due to resource conflicts and the need for AMPs) were issued to all of the operators as decisions in the early 1980s and have been incorporated into the grazing leases/permits. Many of the high priority allotments now have AMPs that include monitoring plans, grazing management systems and proposed range improvements to implement the AMPs. Rangeland Reform resulted in the development of a new set of Fundamentals of Rangeland Health and National Standards and Guidelines for Grazing Administration (43 CFR 4180.1-2). There are 17 grazing allotments in the planning area and 5 of the allotments have not yet been assessed for standards for rangeland health. One allotment out of the 12 that were assessed for health standards, failed to meet the riparian standard because of livestock grazing. Allotments that do not meet Standards due to livestock grazing will have specific actions developed to remedy the situation that could include negative decisions being issued to the operator.

K.3.10 Wild Horse & Burro

Wild horses and burros are protected by the Federal Wild Free-Roaming Horse and Burro Act of December 15, 1971 (16 U.S.C. 1331-1340), as amended. Implementation regulations are found in 43 CFR Part 4700. Under the act, Congress declared that wild horses and burros are protected and are an integral part of the public land resources. BLM is required to achieve and maintain population levels, which ensure an ecological balance. The areas where horses and burros were known to exist at the time of the passage of the Wild Free-Roaming Horse and Burro Act are known as Herd Areas (HAs) and provide the upper limit of potential management areas for these animals. The CDCA Plan called these areas Herd Management Areas (HMAs). It also identified concentration areas where wild horses and burros tend to concentrate based on several factors, including water, vegetation and terrain. The CDCA Plan for available AUMs evaluated these areas. It also recommended management number of wild horses and burros within these units. The CDCA Plan used this information to identify retention areas, where these animals are to be managed, and prescribed population levels.

BLM currently manages wild horses and burros under existing CDCA Plan and HMA Plans, where developed. Appropriate management levels (AMLs), a single number which is the upper level of an established population range, were set in the plans based on available forage and water, and other resource needs or conflicts. Since the 1980 CDCA Plan was approved, herd areas generally have had populations in excess of the AMLs set in the plan. To decrease populations, many animals have been removed and placed into the BLM's National Wild Horse and Burro Adoption Program. Several HMAs still have an excess of animals, while others no longer have herds.

There are no fences between BLM administered lands, most private lands, and NPS lands (Mojave National Preserve and Death Valley National Park), so some migration between these lands is possible. To minimize migration, activities may include, reducing herds where established populations exceed appropriate levels, placing the animals into the BLM's adoption program, moving herd management areas, erecting fencing, and/or providing additional improvements such as water sources on public lands. BLM coordinates removal of unwanted wild horses and burros from NPS land on a case-by-case basis.

Status of the California Desert District Burro Herd Areas and Herd Management Areas

Table K-1 displays: 1)) All the burro herd areas recognized in the CDCA Plan (1980) and assigned acreages; 2)) Herd management areas (HMAs) designated in 1980, associated acreages and appropriate management levels (AML); 3)) Year 2001 status of herd area acreages, herd areas with an asterisk had a reduction in their acreages due to the transfer of Public lands to the National Park Service (NPS) through the 1994 California Desert Protection Act); 4)) Year 2001 status of herd management area acreages and associated AMLs, and 5)) 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. Several amendments to the CDCA Plan (1980) removed the HMA designation and assigned 0 acres and reduced the AML to 0. HMA acreages 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 area or HMA transferred to the NPS are not applicable (NA) to the 1971 Wild Free-Roaming Horse and Burro Act.

Table K.1 – Current Status of California Desert Burro Herd Areas and Herd Management Areas

							Estimated Burro Population 2001
Piper Mountains*	104,661	104,661	82	97,434	96,303	82	0
Last Chance/ Sand Spring*	240,837	0	0	43,569	0	0	0
Waucoba/Hunter Mountains*	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 Mountains*	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 Mountains*	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 Mountains	39,781	0	0	39,781	0	0	37
Dead Mountains	42,757	0	0	42,757	0	0	19
Chemehuevi	406,894	406,894	150	406,894	406,894	150	598
Chocolate/Mule Mountains	386,069	386,069	22	386,069	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
Total	4,973,514	3,500,465	2,747	3,443,266	1,338,804	370	1,292

² GIS Calculated

** HMA acreages affected by lands transferred to the NPS, which would reduce also their AML

Table K.2 – Status of the California Desert District Horse Herd Areas and Herd Management Areas

							Estimated Horse Population 2001
Piper Mountain ³	104,661	104,661	17	97,434	96,303	17	40
Centennial ³	1,030,311	317,140	168	1,023,384	317,140	168	220
Chicago Valley ³	331,612	278,173	28	314,377	278,173	28	4
Waucoba/Hunter Mtn.	519,129	0	0	44,685	0	0	0
Woods/Hackberry	39,400	39,400	6	0	0	0	N/A ⁴
Picacho	45,928	45,928	42	45,928	45,928	42	0
Palm Canyon	11,500	11,500	6	11,500	11,500	6	8
Coyote Canyon ⁵	20,700	20,700	20	0	0	0	N/A ⁴
Total	2,103,241	817,502	287	1,537,308	749,044	261	272

K.4 SUMMARY

This Appendix has documented current policies affecting the primary resources and uses in the NEMO Planning Area. Additional information on the existing situation, including resources that are specifically affected by alternatives proposed in this planning effort, is discussed in Chapter 3: Affected Environment. In addition, a separate current desert tortoise management situation is available at BLM field offices with jurisdiction in the NEMO Planning Area as well as the California Desert District Office in Riverside, California.

³ Herd areas reduced in their acreages due to the transfer of Public lands to the National Park Service (NPS) through the 1994 California Desert Protection Act

⁴ N/A – Not Applicable

⁵ Herd area transferred to Anza Borrego State Park

Appendix L

Planning Criteria for the NEMO Planning Effort

Appendix L

L.0 Planning Criteria for the NEMO Planning Effort

The planning criteria for the NEMO planning effort include the following:

- Comply with applicable laws, Executive Orders, and regulations
 - Define the planning area as public lands within the Northern and Eastern Mojave planning area boundary, and the study area as all lands within and immediately adjacent to the planning area
 - Consider all proposals in the context of their consistency with standards and guidelines
 - Develop and implement actions in all alternatives to accomplish the goals and overall objectives of USFWS recovery plans for listed species, to assist in the recovery and delisting of those species as feasible
 - Consider strategies for threatened and endangered species management to make it easier, more efficient, and more cost-effective for public land users to obtain activity and us
 - Conform desert tortoise category boundaries to the proposed Wildlife Management area boundaries. Category I lands are within recovery areas; Category III lands are outside of recovery areas. The USFWS will revise Recovery Unit boundaries and critical habitat designations in the planning area to be consistent with the selected desert tortoise alternative if other than no action
 - Address lands which have been released from wilderness review and are being assigned a multiple-use class as follows
 - Areas of less than 500 acres will be addressed by plan maintenance to be consistent with adjacent lands
 - Areas over 500 acres will be addressed by plan amendment on a case-by-case basis
 - Rely on available inventories and existing resource data in the planning area, as well as ongoing data being collected as part of the range assessment process when available, to reach sound management decisions
 - Designate routes at a minimum in desert tortoise critical habitat and also in the proposed desert tortoise Wildlife Management area (i.e., proposed Category I desert tortoise habitat).
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Appendix M

Summary of CDCA Plan Maintenance Actions Resulting from the California Desert Protection Act (CDPA)

Appendix M

M.0 California Desert Conservation Area Plan Maintenance Actions Resulting from the California Desert Protection Act

Table M.1 Summary of Changes resulting from CDPA of 1994

			Associated NEMO Amendments
Dinosaur Trackway ACEC Expansion	Mountain Pass Area	Boundaries modified by Congress	Plan Clarification only. Language in the CDCA Plan will be corrected to reflect currently accurate acreage and closure to mineral entry per CDPA. State lands may be acquired. No other management direction change identified.
Designation of BLM wilderness	19 Wilderness Areas partially or entirely in the planning area	Boundaries set by Congress.	Plan Clarification only. Language in the CDCA Plan will be updated to reflect class C lands as designated wilderness areas rather than BLM-recommended wilderness and will be closed to motor vehicle use in accordance with the CDCA Plan, as amended and 8342.1(d), consistent with the California Desert Protection Act.
Modification of guidance for remaining designated wilderness study areas and lands not released from wilderness review.	1 Wilderness Study Area 5 Areas Not Released	Congress withdrew most areas from the land laws	Plan Clarification only. Language in the CDCA Plan will be corrected to reflect appropriate guidance for WSA and remaining areas not released from wilderness review.

Change	Location		Amendments
Determine Multiple Use Class for Congressionally released wilderness study areas	41 Released Areas totaling 468,300 acres	Areas released by Congress.	Yes. Lands interim MUC L (limited) at this time. CDCA Plan calls for plan amendment to determine permanent MUC.
	Elimination of Areas of Critical Environmental Concern	Lands no longer under BLM jurisdiction- Transferred to NPS.	Plan Clarification only.
Modification of Areas of Critical Environmental Concern	Greenwater Canyon ACEC Clark Mountains ACEC Cerro Gordo ACEC Saline Valley ACEC Surprise Canyon ACEC	Transferred to NPS.	Yes. Remaining public lands in ACECs substantially reduced in size were evaluated for deletion modification, or retention.
Elimination of Special Areas	East Mojave National Scenic Area	Transferred to NPS.	Plan Clarification only.
Modification of Special Areas	Last Chance Canyon National Historic Site	Transferred to NPS.	Plan Clarification only.
Elimination of Herd Areas and Management Areas for management of wild horses and burros	Lave Beds HMA (Burros) Cima Dome HMA (Burros) Granite/Providence HA (Burros) Woods-Hackberry HA (Burros) and HMA (Horses)	Transferred to NPS.	Plan Clarification only.
Modification of Herd Management Areas for management of wild horses and burros	Waucoba-Hunter Mountain HA (Horses) HMA (Burros) Lee Flat HMA (Burros) Panamint HMA (Burros) Centennial HA (Burros) HMA (Horses) Slate Range HA (Burros) Sand Springs/Last Chance HA (Burros) Piper Mountain HMA (Horses and Burros) Chicago Valley HMA (Horses and Burros) Clark Mountain HA (Burros) Dead Mountains HA (Burros)	Transferred to NPS.	Yes. The Clark Mountain HMA was evaluated for the management of burros outside the designated DWMA's. There populations would be dependant on water located on the annexed portion of Clark Mountain managed by NPS
Transfer of grazing allotments	Colton Hills Allotment Gold Valley Allotment Round Valley Allotment	Lands changed to NPS jurisdiction.	Plan Clarification only. Leases and case files have been transferred to NPS for administration.

Change	Location		Amendments
Modification of grazing allotments	Last Chance Allotment Hunter Mountain Allotment Lacey-Cactus-McCloud Allotment Eureka Valley Allotment Valley View Allotment Valley Wells Allotment Clark Mountain Allotment Kessler Springs Allotment Piute Valley Allotment Crescent Peak Allotment	Lands changed to NPS jurisdiction.	Yes. The size and character of the BLM portion of existing grazing allotments in desert tortoise habitat administered by BLM and NPS were reviewed during development of recovery strategies for the desert tortoise. In many cases, current grazing management was modified to incorporate measures to ensure conservation of tortoise.
Elimination of NEMO portion of Barstow to Vegas race course	From Alvord Road northeast of Barstow heading northeast, weaving back and forth across and roughly parallel to I-15, to just over the state line in NV.	A portion of corridor lands changed to NPS jurisdiction, which does not recognize the BLM adopted corridor.	Yes. Any changes would also affect lands in the West Mojave planning area. Proposed plan would not be completely decided until consideration in the WEMO planning process as well. Dualsport events currently considered on designated open routes on public lands
Modification of the I-15 and I-40 utility corridors	Along I-15 and I-40 where the Mojave National Preserve is adjacent to (within 2 miles) of the freeways - approximately 45 miles.	Transferred to NPS.	Plan Clarification only. Corridors were essentially narrowed by half, to 2 miles wide. It is unclear at this time whether additional corridor width will be needed to serve future demand.

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Appendix N

Land Tenure Strategy for the NEMO Planning Area

Changes to this chapter in developing the FEIS

1. Minor updates to public land acreage within DWMA's with the inclusion of Phase 2 and 3 Catellus/Wildlands acquisitions and exchanges, and the small change based on the Nipton (Freeman) exchange.

Appendix N

N.0 Land Tenure Strategy for the NEMO Planning Area

N.1 Land Tenure Strategy

How can areas of checkerboard land ownership that create habitat fragmentation be addressed? How can BLM acquire critical lands in Inyo County and address county concerns about their limited tax base? A strategy is proposed to answer these questions and other issues raised during the planning effort. Significant changes in land ownership patterns and management have occurred and are continuing in the planning area. A strategy of the future of public lands in the planning area is needed to complement other NEMO strategies and to identify issues and areas of concern.

N.2 Land Tenure

This section describes the overall land tenure strategy in the NEMO planning area consisting of priorities and identification of areas for land acquisition and disposal.

These land acquisition and disposal actions are discussed in the context of Chapter 4; cumulative impacts affecting the NEMO plan area. All future implementing actions (exchanges, sales, purchases, donation) will be subject to site-specific environmental analysis and public review.

N.2.1 Major Land Tenure Actions Affecting the Planning Area

Acquisition of State of California Lands in Designated Wilderness

Land exchanges are underway to implement the provisions of the California Desert Protection Act. The CDPA requires the Secretary of the Interior to enter into an agreement with the State Lands Commission (SLC) to acquire their holdings within wilderness areas. Approximately 58,000 acres of SLC lands are involved in 16 of the 21 wilderness areas in the NEMO planning area.

Wildlands-Catellus Agreement

A January 1999 Letter of Intent between The Wildlands Conservancy, Catellus Development Corporation, and BLM California identified approximately 437,000 acres of Catellus properties throughout the CDCA to be purchased by a combination of Wildlands Conservancy funds and appropriations from the Land and Water Conservation Fund (LWCF). Congress approved fifty percent of the needed LWCF appropriations in FY 2000. The purchased land would be conveyed to the BLM and National Park Service. The lands proposed for conveyance are located within wilderness, desert tortoise critical habitat units, and recreation areas. BLM has since accepted title to approximately 103,000 acres of former Catellus lands within the NEMO planning area, substantially completing the Wildlands Conservancy-Catellus exchanges in the planning area. These recently acquired lands are concentrated in the southern portion of the NEMO planning area and resulted in a significant consolidation of public lands administered by BLM, particularly in the Piute-Fenner Desert Wildlife Management Area.

Timbisha-Shoshone Land Transfer Study

The CDPA requires the Secretary of the Interior to conduct a study to identify lands suitable for a reservation for the Timbisha-Shoshone Tribe. One of the areas under consideration in the NEMO Planning Area consists of approximately 1,000 acres of public lands near the community of Death Valley Junction in Inyo County. The NEMO plan does not address a land tenure proposal or alternatives related to a potential transfer of public lands to the Timbisha-Shoshone Tribe. Transfer of lands to the Tribe would be by Congressional action and a separate legislative EIS is in preparation.

Fort Irwin Expansion

The U.S. Army first proposed a 250,000-acre southward expansion of the National Training Center (NTC) at Fort Irwin, California in 1985. This proposal included approximately 32,000 acres in the NEMO Planning Area east of the current NTC. In 1993, the U.S. Fish and Wildlife Service issued a draft jeopardy biological opinion for the desert tortoise on the Army proposal.

The Army revised the expansion proposal to an eastern configuration including an expansion of 331,000 acres into the Silurian Valley area. This proposed expansion affected approximately 273,000 acres within the NEMO planning area. The January 1997 release of a Draft Environmental Impact Statement on the proposed eastern expansion generated significant opposition from a wide cross-section of desert users and constituencies. In April 1999 the Army proposed a new 175,000-acre expansion consisting of elements from both the southern and the eastern expansions. The current Army proposed expansion affects approximately 25,000 acres in the NEMO planning area east of the current NTC.

If an expansion of the NTC were to be approved by Congress, the affect to the NEMO Planning Area could range from a minimum of 25,000 acres, to a maximum of 273,000 acres.

N.3 NEMO Land Tenure Strategy

In acquisition areas, current public lands will be retained, and non-federal lands will be acquired through exchange, purchase or donation. All acquisitions made by BLM will occur on a voluntary basis with willing property owners. The BLM will not acquire non-federal lands through eminent domain or over the objection of property owners.

N.3.1 Desert Tortoise Conservation and Recovery

Public ownership of lands currently ranges from 85% to 94 % in desert wildlife management areas. Under the land tenure strategy, all desert tortoise habitats within the DWMA's would be a high priority for land acquisition in the NEMO planning area. Depending upon final boundaries the acreage of acquisitions could be as much as the following:

Table N.1 – Acreage of Acquisitions

		Percent of Private/State Acreage
Piute-Fenner Valley	24,887	14%
Ivanpah Valley	2,240	6%
Northern Ivanpah Valley	1,750	6%
Shadow Valley	6,080	6%

Amargosa Vole Conservation and Recovery

Approximately 1,600 acres (35%) of critical habitat is private lands. About 500 acres are in the developed areas of Tecopa Hot Springs and Tecopa, which are not suitable habitat and will not be pursued for acquisition by BLM. In 1990, the BLM acquired approximately 380 acres on the current critical habitat area for the Amargosa vole. In addition, other riparian and wetland habitat in the Amargosa River system that can support Amargosa vole and is proposed for conservation is approximately 92 percent public land. Under the land tenure strategy, all currently suitable and potentially restorable vole habitats within identified wildlife management areas would be a high priority for land acquisition in the NEMO planning area. Depending upon final boundaries, total acquisition areas could include the following: Central Amargosa Valley - 2,040 ac in six parcels and North of Grimshaw Lake- 600 acres in one parcel.

Wilderness Areas

Consistent with requirements of the CDPA, the NEMO Plan goal is the acquisition of all non-federal lands in the 24 designated wilderness areas that are entirely or partially within the NEMO planning area (Chapter 7, Figure 13a). Non-federal land within these areas will be acquired by BLM either through on-going major land tenure actions discussed in this appendix or by individual acquisition actions.

Community Expansion

Public lands within identified disposal areas will be considered for conveyance out of federal ownership for future private sector use and development and for necessary public purposes. Public lands within disposal areas would be conveyed by exchange or sale to support community growth and development and ensure maintenance of the private property tax base in the region.

Town of Baker (San Bernardino County) The CDCA Plan identifies approximately 1,140 acres of public lands in and around the community of Baker as unclassified and available for future disposal out of federal ownership.

Town of Nipton (San Bernardino County) The NEMO Plan identifies approximately 485 acres of public lands in and around the community of Nipton as unclassified and available for future disposal out of federal ownership.

Mesquite Valley (Inyo County) The CDCA Plan identifies approximately 260 acres of public lands in Inyo County in the Mesquite Valley as unclassified and available for future disposal. The public parcels are mixed with private lands in the area.

Community of Tecopa (Inyo County) All public lands in and around the community of Tecopa are MUC L (limited) and not available for disposal. The preferred alternative for Amendment 5 (Amargosa vole) would reclassify 140 acres in Tecopa from MUC L to unclassified. These lands would then be available for disposal through exchange to facilitate acquisitions in the Amargosa River ACEC.

Stateline/Highway 127 (Inyo County) All public lands in and around the stateline area north of Death Valley Junction are currently MUC L and not available for disposal. The preferred alternative for Amendment 5 would reclassify 920 acres adjacent to private holdings from MUC L to unclassified. These lands would then be available for disposal through exchange to facilitate acquisitions in the Amargosa River ACEC.

Inyo County Landfills Under the preferred alternatives for Amendments 13 and 14, the 29.4 acres encumbered by the Tecopa landfill and the 50 acres encumbered by the Shoshone landfill would be reclassified from MUC L (limited) to unclassified. Both sites would be subsequently conveyed to the County of Inyo under the Recreation and Public Purposes Act.

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Appendix O

Wild and Scenic River Eligibility Report for the Amargosa River

Appendix O

O.0 Wild and Scenic Rivers Eligibility Report For The Amargosa River

O.1 Introduction

This report presents the results of an eligibility study on potential additions to the National Wild and Scenic Rivers System for an identified riverine system in the Northern and Eastern Mojave Desert Management Planning Area. The river considered potentially eligible for designation within the eastern portion of the planning area is the Amargosa River, originating near Beatty, Nevada and terminating in Death Valley National Park, California. This eligibility report evolved from the inventory and analysis that was conducted for consideration of alternatives to conserve and protect the Amargosa vole (refer to Chapter 2, Section 2.3). Based on public comment, the wild and Scenic Rivers Act requirements, the final report includes the inventory of all rivers evaluated for eligibility in the Amargosa River region in eastern Inyo County. Table 1 shows the findings of eligibility or non-eligibility for each river. This report concludes with a discussion of management standards and guidelines applicable to rivers designated under the National Wild and Scenic River (WSR) Act of 1986. The report concludes with a discussion of management standards and guidelines applicable to said designated rivers.

O.2 Background

Federal agencies such as the Bureau of Land Management (BLM) have been mandated to evaluate potential additions to the National Wild and Scenic River System (NWSRS) per Section 5(d) of the Wild and Scenic Rivers Act of 1968 (16 United States Code 1271-1287, *et seq.*). Title 36 of the Code of Federal Regulations (CFR), Subpart 297, addresses management of Wild and Scenic Rivers. Title 43 CFR, Subpart 8350, specifically addresses designation of management areas. NWSRS study guidelines have also been published in Federal Register Volume 7, Number 173 (September 7, 1982) for public lands managed by the U.S. Departments of Agriculture and Interior. Additional guidance on wild and scenic rivers (WSR) is provided in BLM Manual 8351.

The NWSRS study process includes three regulatory steps:

1. Determination of what river(s) and/or river segment(s) are eligible for WSR designation;
2. Determination of eligible river(s) and/or segment(s) potential classification with respect to wild, scenic, recreational designation, or any combination thereof, and
3. Conducting a suitability study of eligible river(s) and/or segment(s) for inclusion into the NWSRS via legislative action. An environmental impact statement (EIS) is commonly prepared to document the analysis needed for suitability determination/WSR designation.

Any river or river segment on public lands found eligible for inclusion in the NWSRS is to be managed as if this river/segment were designated, until such time as a suitability determination is made. This requires management of public lands within 0.25 mile of the subject river/segment, to conform to management standards and guidelines presented in federal agency manuals for wild and scenic rivers until the suitability determination is completed.

If a river or river segment is found suitable for inclusion to the NWSRS, the U.S. Congress must then pass legislation designating this river/segment, prior to its formal addition to the NWSRS. In addition to Federal agencies, private individuals and/or groups, as well as State governments, can nominate rivers and/or segments for inclusion.

Only the determinations of eligibility and classification are documented in this report and the impacts evaluated in the attached Northern and Eastern Mojave Desert Proposed Plan and Environmental Impact Statement. The remaining suitability determination would be completed in a separate document, and analyzed in an EIS format. The results of the suitability determination would amend the applicable land use plan, i.e., the California Desert Conservation Area (CDCA) Plan (BLM 1980, as amended).

To meet eligibility criteria for wild and scenic river designation, a river or segment must be free-flowing in nature and must possess one or more outstandingly remarkable cultural, fish/wildlife, geologic, historic, recreational or scenic values within its immediate proximity. Free flowing, as defined in Section 16(b) of the WSR Act reflects water flowing in a natural condition without impoundment, diversion, straightening, or other modification of the waterway. However, the existence of low dams, diversion works, and other minor structures at the time of designation, does not necessarily bar consideration for inclusion on the NWSRS. Nor are there any minimum river or segment lengths necessary for inclusion. Congress has designated a riverine stretch as short as 4.25 miles. Considerations in defining study rivers and/or study river segments should include land ownership patterns, physical changes in the river/segments and their environs, as well as the type and amount of human modification of lands bordering identified rivers/segments.

The term “Outstandingly Remarkable” is not clearly defined in the NWSRS, necessitating professional judgement by submitting parties. In general, the term is defined as a resource that is considered more than simply ordinary, in the context of the local region. Examples include areas supporting an “A” Scenic Quality Rating (BLM Manual 8400); habitats for threatened and/or endangered plants/animals; exemplary physiographical, ecological, geological or recreational type locations; and areas where little human modification is evident or where terrain is rugged and physically challenging to traverse.

O.3 Description of River Under Consideration

The Amargosa River is the focal hydrologic system of the eastern half of the Northern and Eastern Mojave Desert (NEMO) Planning Area. The hydrologic systems of the southern Great Basin and northern Mojave Desert are generally characterized by deep water tables. They are also considered primarily closed groundwater basins. One of only two large rivers in the Mojave Desert, the free-flowing Amargosa is largely subterranean. It begins its southerly, largely underground flow near Beatty, Nevada. A segment of the river 10 miles in length supports shallow, perennial water flow near in Oasis Valley in Nevada, but this “bitter water” river then generally flows in a sub-surface fashion as it bisects the remainder of the Amargosa Desert in Nevada. It flows adjacent to Stateline, Nevada and then southerly through the towns of Death Valley Junction, Shoshone, Hot Springs and Tecopa, in California. It crosses state highway (SH) 127 and terminates in the lowest elevation area in the United States: Badwater Basin, within Death Valley National Park (DVNP).

Water runoff from the Bullfrog Hills, Yucca Mountain, Shoshone and Spring Mountains, in Nevada, all contribute to Amargosa River water flow in California. The latter Spring Mountain area is suspected to provide a substantial amount of this runoff contribution. The Lower Carson Slough tributary of the Amargosa serves as a primary drainage for a portion of Ash Meadows and the southern portion of the Amargosa Desert in Nevada. These watersheds contribute to a largely subterranean Amargosa River at Franklin Playa in California. Several mountain ranges and alluvial basins in California, particularly Eagle Mountain and the Resting Spring Mountain Range in the upper California reach of the river, the Nopah and Kingston Mountain Ranges, as well as California Valley, progressively add to central Amargosa River water flow. Major river tributaries include the aforementioned Lower Carson Slough in the northern reach of the river, China Ranch Wash in the central reach, and Salt Creek in the south.

The Amargosa flows extensively underground, surfacing perennially at only two areas in California (Shoshone-Hot Springs and Tecopa-Sperry). Ephemeral surface flows and salt flats are common in the Upper reaches of the Amargosa River. Shallow perennial water flow and clay-hole ponding are common in the Shoshone Segment of the river. Perennial ponding, as well as ephemeral mudflats, are common in the Grimshaw Reach of the river. A substantial perennial water flow begins in the Amargosa Canyon Segment, which continues through the Amargosa Canyon Area of Critical Environmental Concern and the Kingston Range Wilderness, to Sperry Siding. This historic railroad depot is located on the abandoned Tonopah & Tidewater Railroad (TNTRR). Between Sperry Siding and the eastern boundary of DVNP at SH 127, water flows over the years have alternated between intermittent and perennial flows, with ponding occurring in ephemeral years. Shallow, perennial flows beneath SH 127 have been recorded as the norm in recent years, following largely ephemeral flows in the early 1990's. These ephemeral and/or perennial surface water flows, contribute to the perennial subterranean flow that terminates in Badwater Basin, within DVNP.

Lands along the river in California are largely in federal ownership, i.e., approximately 53.25 riverine miles are public lands managed by the BLM and approximately 45 additional riverine miles occur within DVNP. Substantial private ownership (3.5 riverine miles) occurs along the river in the vicinity of Shoshone, both north and south of SH 178. A degree of river diversion and modification has also occurred on the Shoshone-side of SH 178. A total of 2.5 riverine miles are also privately owned in the Grimshaw Lake reach of the river; as is a total of 2.5 riverine miles in the Amargosa Canyon Segment.

The TNTRR, abandoned and dismantled in the 1940's, parallels the river for a majority of its length in California. This railroad once crossed the river on wooden bridges at several sites in California, though only three historic crossings occurred in the high water flow segment of the river occurring between Shoshone and Sperry Siding. A pedestrian trail now exists on the TNTRR, which is breached in many areas between Shoshone and Sperry. Few roads occur immediately adjacent to the river in the Shoshone to Sperry Siding Segment, although SH 178, Tecopa Hot Springs Road and Old Spanish Trail Highway do cross this river, widely spaced over a 21-mile span of the river. Several roads are parallel and cross the river in the Sperry Siding to SH 127 Segment of the river. Further, an access road to the popular Dumont Dunes Off-highway Vehicle Area parallels the river in this segment for four miles, crossing the river once at the entrance to this public land use area.

O.4 Description of Segment(s) Under Consideration

Considerations for National Wild and Scenic Rivers System eligibility are based on resource values, land ownership patterns, shoreline development, proximity of roads and previous river modifications. These considerations were augmented with information and cooperation provided by the National Park Service at Death Valley National Park and with California's statewide river conservation group, Friends of the River, and interested local community members.

As a consequence of the analysis documented herein, an eligibility determination for a 26-mile length segment of the Amargosa River occurring in California has been made. Segments identified as eligible for consideration of Wild and Scenic River designation include the Shoshone to Tecopa Segment (10 miles), which spans the river in a southerly fashion between SH 178 and Old Spanish Trail Highway; the Tecopa to Sperry Siding Segment (9 miles); and the Sperry Siding to State Highway 127 Segment (7 miles). The required suitability study on these segments will be deferred until after the Record of Decision for the NEMO Plan amendment to the CDCA Plan.

O.5 Recommended NWSRS Segment Classification and Land Ownership

Once determined eligible, river segments are tentatively classified for study as wild, scenic, or recreational, based on the degree of access and amount of development along the river area. If Congress designates a river or segment, the enabling legislation generally specifies the classification.

Table O.1 Summary of River Segment Eligibility and Recommended Classifications

		Comments
Amargosa River State line to Shoshone	50 miles	Not eligible – no observable water; dry wash.
Amargosa River Shoshone to Tecopa	10 miles	Eligible – Scattered sections of perennial river flows connected by intermittent streambed. Outstanding remarkable scenic, geologic, recreational, fish, wildlife, cultural and historic values. Recommended classification of “Scenic”.
Amargosa River Tecopa to Sperry Siding	9 miles	Eligible – Perennial river flow with associated outstanding remarkable scenic, geologic, recreational, fish, wildlife, and cultural and historic values. Recommended classification of “Wild”.
Amargosa River Sperry Siding to Hwy 127	7 miles	Eligible – Perennial river flow typically reaches Dumont access road, intermittent south to Hwy 127. Outstanding remarkable scenic, geologic, recreational, fish, wildlife, cultural and historic values. Recommended classification of “Recreational”.
Lower Carson Slough	8 miles	Not eligible – no free flowing water. Spring seeps comprise an alkali mud flat with associated marsh.
Salt Creek	~ 200 feet	Not eligible – no free flowing values, riparian moisture consist of perennial seep a few hundred feet in length, beginning at the spring.
Sheep Creek Springs	~ 50 feet	Not eligible – no free flowing water. Riparian moisture consists of perennial seep flowing about fifty feet from spring then soaking into ground.
China Ranch Wash (Willow Spring)	~ 300 feet	Not eligible – no free flowing water. Perennial spring originates on private land, seeps across about three hundred feet of public land and ends in a dry wash.

¹ Note: All lengths are approximate. First five river segments were measured using Geographic Information System software. Last three river segments were measured by dividing the length of surface moisture by 5,280' (mile).

Table O.2 Comparison of Outstanding Remarkable Values for River Segments Within the Amargosa River Region (Eastern Inyo County)

									Eligible WSR
Amargosa River State line to Shoshone	No	4	4	4	0	4	4	3	No
Amargosa River Shoshone to Tecopa	Yes	1	2	2	2	2	1	2	Yes
Amargosa River Tecopa to Sperry Siding	Yes	1	2	1	1	1	2	1	Yes
Amargosa River Sperry Siding to Hwy 127	Yes	2	2	2	2	2	2	2	Yes
China Ranch Wash (Willow Springs)	No	3	4	3	0	4	3	4	No
Lower Carson Slough	No	4	4	3	0	3	4	4	No
Salt Creek	No	4	3	4	0	3	3	3	No
Sheep Creek Spring	No	4	4	4	0	4	4	4	No

The following three segments of the Amargosa River have been found eligible because they are free flowing and possess at least one outstanding remarkable value: Shoshone to Tecopa segment, Tecopa to Sperry Siding segment, and Sperry Siding to State Highway 127 segment.

The following water sources have been found not eligible because they lack a free flowing body of water or outstanding remarkable values: Amargosa River from the state line to Shoshone, Lower Carson Slough, Salt Creek, Sheep Creek Spring and China Ranch Wash (Willow Spring).

Key to Ratings:

- 0 – None
- 1 – Exemplary, one of the better examples of that type of resource at a national level
- 2 – Unique, a resource or combination of resources that are regionally one of a kind
- 3 – High quality at a regional and /or local level
- 4 – A common resource at the regional and/or local level

Accessibility, primitive nature, number and type of land developments, structures, water resource developments, and water quality were all considered in assigning classifications. The primary criteria for the three classifications are outlined below [*In: A Compendium of Questions & Answers Relating to Wild & Scenic Rivers* (Technical Report of the Interagency Wild and Scenic Rivers Coordinating Council 1999)]:

Wild River Areas: Those rivers, or sections of rivers, that are free from impoundments, generally inaccessible except by trail (no roads), with watersheds or shorelines essentially primitive, and having unpolluted waters.

Scenic River Areas: Those rivers, or sections of rivers, that are free from impoundments, having shorelines or watersheds largely primitive and undeveloped, but accessible in places by roads (i.e., roads may cross but generally not parallel [in close proximity to] the river. These rivers or segments of rivers are usually more developed than wild and less developed than recreational. This classification may or may not include scenery as an Outstandingly Remarkable Value (ORV).

Recreational River Areas: Those rivers or sections of rivers that are readily accessible by road or railroad, may have had some development of the shoreline, and may have had some impoundment or diversion in the past. This classification, does not, however, imply that recreation is an ORV.

With these criteria in mind, as well as ORV data related to differing segments of the Amargosa River, Table O.3 displays the classifications, which have been recommended for that portion of the river, determined eligible for inclusion to the NWSRS.

Table O.3 – River Eligibility for inclusions to the NWSRS

			Private Land Miles
Shoshone to Tecopa	Scenic	6.25	3.75
Tecopa to Sperry Siding	Wild	6.50	2.50
Sperry Siding to SH 178	Recreational	7.00	0.00

O.6 Reasons for Consideration

The Amargosa River was considered eligible for inclusion in the NWSRS because of values identified by the BLM in the completed CDCA Plan and during development of the ongoing Northern and Eastern Mojave Desert Plan. Strong support for such WSR designation has been offered by the California Native Plant Society, Friends of the River, The Nature Conservancy, the Sierra Club, and the local community.

O.7 Outstanding Remarkable Values

All segments identified as eligible on public lands contain Outstandingly Remarkable Scenic Values (ORVs), i.e., Class “A” scenic quality, per BLM Manual guidelines. Two specific public land areas in these segments, the Amargosa Canyon and Grimshaw Lake Natural Areas, have been previously designated as Areas of Critical Environmental Concern (ACECs) in part to their spectacular scenery. These segments also encompass a portion of the Kingston Range Wilderness. Regionally rare plant communities such as Black Willow (*Salix nigra*)-Arroyo Willow (*S. lasiolepis*), and Cottonwood (*Populus fremontii*), Riparian Galleries, Mesquite (*Prosopis glandulosa*) Bosque, as well as alkaline meadow, lacustrine, emergent and cliffside spring plant communities, can also be found in abundance along this portion of the river. Wildlife supported by these regionally rare plant communities include a high percentage of endemic species, which occur nowhere else on earth, or in very low numbers outside of this portion of the river. Several threatened and endangered species, both plant and animal, occur in or use these segments, as well as a host of sensitive and/or special concern species. Over 260 bird species have been recorded. The presence of flowing water in these segments has served to attract humans for thousands of years. The high relief, stark topography and lush riparian vegetation provided by these segments continue to offer many opportunities for non-intrusive recreation. Table 2 documents the comparative assessment of OHVs by river segment. ORVs for this portion of the Amargosa River follow.

O.7.1 Wildlife and Plants

The state and federally listed-endangered Amargosa vole (*Microtus californicus scirpensis*) occurs exclusively in meadow and riparian habitats along these segments, and a large portion of the central Amargosa has been designated as critical habitat for this endemic species. The similarly listed endangered Least Bells Vireo (*Vireo bellii pusillus*) and Southwestern Willow Flycatcher (*Empidonax trailli extimus*) also utilize these segments, with the former known to nest and the latter suspected to occur only during migration seasons. So too, with the State of California listed-threatened Yellow-billed Cuckoo (*Coccyzus americanus occidentalis*), and Swainson’s Hawk (*Buteo swainsoni*), where the former is known to nest and the latter is suspected only during migration seasons. Two desert fish species, the Amargosa Pupfish (*Cyprinodon nevadensis amargosae*) and the Amargosa Speckled Dace (*Rhynchichthys osculus amargosae*), also occur in these segments and are both designated as sensitive species by the BLM. The State of California and federally listed- endangered Amargosa Niterwort (*Nitrophila mohavensis*), and possibly the federally listed-threatened Spring-loving Centaury (*Centaureum namophilum namophilum*), also occur along a portion of these segments.

O.7.2 Geologic

These segments of the Amargosa River have been carved into a colorful array of spires, mesas cliffs and canyons over the years by water flow of varying velocities. The ancient Tecopa lakebed is also found in the central segment, and contains fascinating landforms and extensive fossils, including many not recorded frequently in the region.

O.7.3 Cultural

Sites along these segments indicate a continuing occupation by indigenous peoples for over 10,000 years. These sites are located on both sides of the river and are found in each segment. There is a high concentration of sites within the ¼ mile study boundary along the Amargosa River because it is the largest water source in the region.

O.7.4 Historic

The Old Spanish Trail crosses the River in the central segment and lower segment and was one of the few pioneer trails used for both east and west travel. Famed explorers such as Kit Carson and Colonel John C. Fremont described several sites along these segments. The Tonopah and Tidewater (TNT) Railroad, which traverses all three segments, provided an historic support function for the remote mining communities located in the Death Valley Region, in the early part of the 20th century.

O.7.5 Recreational

As one of the few surface water, riparian vegetation and high canyon density locales in the region, the three segments of the Amargosa offer visitors unusual river and canyon-based opportunities. Particularly related to hiking, exploration, bird watching, photography and equestrian use, in rugged and physically challenging terrain. The lower segment provides a unique desert experience because it includes multiple water crossings and scenic views. The central segment encompasses a portion of the Kingston Range Wilderness, where little human modification of the landscape is evident. This segment provides an opportunity to experience solitude in the natural condition of the Mojave Desert.

O.7.6 Scenic

These segments of the Amargosa flow past unusual desert wetlands and hot spring creeks, ancient lake-beds, mesas and mudflats; an abandoned railroad and human ruins of all kinds; colorful rock formations and precipitous cliffs; expansive meadows and even waterfalls. The lush riparian and wetland plant communities present along these segments contrast dramatically with the surrounding stark, desert landscape.

O.7.7 Wilderness

The central segment would encompass a portion of the Kingston Range Wilderness, an area where little human modification of the landscape is evident. An opportunity to experience solitude in a Mojave Desert area untrammelled by man and supporting natural processes is provided in this location.

O.8 Interim Protection

The Wild and Scenic Rivers (WSR) Act and federal guidelines require federal agencies, upon determination of WSR eligibility, to provide interim protection and management for a river's free-flowing character and any identified outstandingly remarkable values, subject to valid existing rights, until such time as a suitability study is completed. Upon study completion, the federal agency (BLM in this instance) makes a recommendation to Congress, which acts on that recommendation.

O.9 Management Standards and Guidelines for National Wild and Scenic Rivers

The Wild and Scenic Rivers Act (Public Law 90-542, as amended) established a method of providing Federal protection for certain of our remaining free-flowing rivers, and preserving these locales for the use and enjoyment of present and future generations. Such designated rivers benefit from the protective management that the act provides.

Section 10(a) of the WSR Act states:

Each component of the NWSRS shall be administered in such a manner as to protect and enhance the values which caused it to be included in said system without, insofar as is consistent therewith, limiting other uses that do not substantially interfere with public use and enjoyment of these values. In such administration, primary emphasis shall be given to protecting its esthetic, scenic, historic, archeologic, and scientific features. Management plans for any such component may establish varying degrees of intensity for its protection and development, based on the special attributes of the area.

This section is generally interpreted by the Secretary of the Interior as a stated non-degradation and enhancement policy for all designated river areas, regardless of classification.

The following National Standards and Guidelines are summarized from BLM Manual 8351 [Wild and Scenic Rivers-Policy and Program Direction for Identification, Evaluation and Management (1992)]. These standards/guidelines are intended to apply to formally designated rivers through incorporation into, or amendment of, resource or land use management plans. Incorporation or amendment efforts are typically completed within three years of formal WSR designation. However, these guidelines also apply, on an interim basis, as described above. For the sake of clarity, guidelines are presented for each separate river classification (wild, scenic and recreational).

O.9.1 Wild River Areas

The WSR Act defines wild river areas to include; “those rivers or sections of rivers that are free of impoundments and generally inaccessible except by trail, with watersheds and shorelines essentially primitive and waters unpolluted. These represent vestiges of primitive America.”

Wild river areas are to be managed with a primary objective of providing primary emphasis to protection of identified outstandingly remarkable values, while providing consistent, river-related, outdoor recreation opportunities in a primitive setting.

Where National Management Standards/Guidelines include allowable practices such as construction of minor structures related to wildlife habitat enhancement, protection from fire, and rehabilitation or stabilization of damaged resources, provided the area will remain natural looking and the practices or structures will harmonize with the environment. Developments such as trails, bridges, occasional fencing, natural-appearing water diversions, ditches and water management devices, may be permitted if they are unobtrusive and do not have a significant, adverse impact on the natural character of the river area. The following Wild River Program Management Standards apply:

Forestry Practices

Cutting of trees not permitted except when needed in association with a primitive recreation experience (such as clearing trails, for visitor safety purposes, or for fire control). Timber outside the boundary, but within visual corridors, should where feasible, be managed and harvested in a manner designed to provide special emphasis on visual quality.

Water Quality

Conditions will be maintained or improved to meet Federal criteria or federally approved State Standards. River management plans shall prescribe a process for monitoring water quality on a scheduled basis.

Hydroelectric Power and Water Resource Development

No such development would be permitted in the channel or river corridor. All water supply dams and major diversions are prohibited. The natural appearance and essentially primitive character of the river area must be maintained. Federal agency groundwater development for range, wildlife, recreation or administrative facilities may be permitted if there are no adverse effects on ORVs.

Mining

New mining claims and mineral leases are prohibited within 0.25 mile of the river. Valid existing claims would not be abrogated and, subject to existing regulations, e.g., 43 CFR 3809, and any future regulations the Secretary of the Interior may prescribe to protect the rivers included in the NWSRS, existing mining activity would be allowed to continue. All mineral activity on federally administered land must be conducted in a manner that minimizes surface disturbance, water sedimentation, pollution and visual impairment. Reasonable mining claim and mineral lease access will be permitted. Mining claims beyond 0.25 mile of the river, but within the wild river boundary, and perfected after the effective date of designation, can be patented only as to the mineral estate and not the surface estate.

Road and Trail Construction

No new roads or other provisions for overland motorized travel would be permitted within a narrow incised river valley or, if the river valley is broad, within 0.25 mile of the river bank. A few inconspicuous roads leading to the boundary of the river area and unobtrusive trail bridges may be permitted.

Agricultural Practices and Livestock Grazing

Agricultural use is restricted to a limited amount of domestic livestock grazing and hay production to the extent currently being practiced. Row crops are prohibited.

Recreation Facilities

Major public use areas, such as campgrounds, interpretive centers, or administrative headquarters are located outside of wild river areas. Simple comfort and convenience facilities, such as toilets, tables, fireplaces, shelters and refuse containers may be provided as necessary within the river area. These should harmonize with the surroundings. Unobtrusive hiking and equestrian trail bridges could be allowed on tributaries, but would not normally cross the designated river.

Public Use and Access

Recreational use including, but not limited to, hiking, fishing, hunting and boating is encouraged in wild river areas to the extent consistent with the protection of the river environment. Public use and access may be regulated and distributed where necessary to protect and enhance wild river values.

Rights-of-Way

New transmission lines, natural gas lines, water lines, etc., are discouraged unless specifically prohibited outright by other plans, orders or laws. Where no reasonable alternative exists, additional or new facilities should be restricted to existing rights-of-way. Where new rights-of-way are unavoidable, locations and construction techniques will be selected to minimize adverse effects on wild river area-related values and fully evaluated during the site selection process.

Motorized Travel

Although this use can be permitted, it is generally not compatible with this river classification. Normally, motorized use will be prohibited in a wild river area. Prescriptions for management of motorized use may allow for search and rescue/emergency situations.

O.9.2 Scenic River Areas

The WSR Act defines scenic river areas to include “those rivers or sections of rivers that are free of impoundments, with shorelines or watersheds still largely primitive and shorelines largely undeveloped, but accessible in places by roads.”

Scenic river areas are to be managed with a primary objective of maintaining and providing outdoor recreation opportunities in a near-natural setting. The basic distinctions between “wild” and “scenic” classifications, involve varying degrees of development, types of land use, and road accessibility. In general, a wide range of agricultural, water management, silvicultural and other practices could be compatible with scenic classification values, providing such practices are carried out in a manner not resulting in a substantial adverse effect on the river and its immediate environment.

National Management Standards/Guidelines include the same considerations set forth for wild rivers, except that motorized vehicle use may in some cases be appropriate and that development of larger scale public-use facilities within the river area, such as moderate-sized campgrounds, interpretive centers, or administrative headquarters would be compatible, if such facilities were screened from the river. The following Scenic River Program Management Standards apply:

Forestry Practices

Silvicultural practices, including timber harvesting could be allowed, provided that such practices are carried out in such a way that there is no substantial adverse effect on the river and its immediate environment. The river should be maintained in its near-natural condition.

Timber outside the boundary, but within the visual screen area, should be managed and harvested in a manner designed to provide special emphasis on visual quality. Preferably, reestablishment of tree cover would be through natural revegetation. Cutting of dead and down materials for fuelwood will be limited. Where necessary, restrictions on the use of wood for fuel may be prescribed.

Water Quality

Conditions will be maintained or improved to meet Federal criteria or federally approved State Standards. River management plans shall prescribe a process for monitoring water quality on a scheduled basis.

Hydroelectric Power and Water Resource Development

No such development would be permitted in the channel or river corridor. Flood control dams and levees would be prohibited. All water supply dams and major diversions are prohibited. Maintenance of existing facilities and construction of some new structures would be permitted, provided that the area remains natural in appearance and the practices or structures harmonize with the surrounding environment.

Mining

Subject to existing regulations, e.g. 43 CFR 3809, and any future regulations the Secretary of the Interior may prescribe to protect the rivers included in the NWSRS, new mining claims and mineral leases can be allowed. All mineral activity on federally administered land must be conducted in a manner that minimizes surface disturbance, water sedimentation, pollution and visual impairment. Reasonable mining claim and mineral lease access will be permitted. Mining claims within the wild river boundary, and perfected after the effective date of designation, can be patented only as to the mineral estate and not the surface estate.

Road and Trail Construction

Roads may occasionally bridge the river and short stretches of conspicuous or lengthy stretches of inconspicuous and well-screened roads would be allowed. Maintenance of existing roads and any new roads will be based on the type of use for which the roads are constructed and the type of use that will occur in the river area.

Agricultural Practices and Livestock Grazing

In comparison to wild river areas, a wider range of agricultural and livestock grazing uses are permitted, to the extent currently being practiced. Row crops are not considered as much of an intrusion of the “largely primitive” nature of scenic corridors, as long as there is not a substantial adverse effect on the natural-like appearance of the river area.

Recreation Facilities

Larger-scale public use areas, such as moderate-sized campgrounds, interpretive centers, or administrative headquarters, are allowed if such facilities are screened from the river.

Public Use and Access

Recreational use including, but not limited to, hiking, fishing, hunting and boating is encouraged in scenic river areas to the extent consistent with the protection of the river environment. Public use and access may be regulated and distributed where necessary to protect and enhance scenic river values.

Rights-of-Way

New transmission lines, natural gas lines, water lines, etc., are discouraged unless specifically prohibited outright by other plans, orders or laws. Where no reasonable alternative exists, additional or new facilities should be restricted to existing rights-of-way. Where new rights-of-way are unavoidable, locations and construction techniques will be selected to minimize adverse effects on scenic river area-related values and fully evaluated during the site selection process.

Motorized Travel

This use, on land or water, could be permitted, prohibited or restricted to protect river values. Prescriptions for management of motorized use may allow for search and rescue/emergency situations.

O.9.3 Recreational River Areas

The WSR Act defines recreational river areas to include “those rivers or sections of rivers that are readily accessible by road or railroad, that may have some development along their shorelines, that may have undergone some development along their shorelines, and that may have undergone some impoundment or diversion in the past.”

Recreational river areas are to be managed with an objective of protecting and enhancing existing recreational values. The primary objective is to provide opportunities for the public to participate in recreation activities dependent on, or enhanced by, the largely free-flowing nature of the river.

National Management Standards/Guidelines include allowable practices such as construction of recreation facilities in proximity to the river, although recreational river classification does not require extensive recreational developments. Such facilities are still to be kept to a minimum, with visitor services provided outside the river area. Future construction of impoundments, diversions, straightening, riprapping and other modification of the water way or adjacent lands would not be permitted, except where such developments would not have a direct and adverse effect on the river and its immediate environment. The following Recreational River Program Management Standards apply:

Forestry Practices

Silvicultural practices, including timber harvesting could be allowed under standard restrictions to avoid adverse effects on the river environment and its associated values.

Water Quality

Conditions will be maintained or improved to meet Federal criteria or federally approved State Standards. River management plans shall prescribe a process for monitoring water quality on a scheduled basis.

Hydroelectric Power and Water Resource Development

No such development would be permitted in the channel or river corridor. Existing low dams, diversion works, riprap and other minor structures may be maintained, provided the waterway remains generally natural in appearance. New structures may be allowed, provided that the area remains natural in appearance and the practices or structures harmonize with the surrounding environment.

Mining

Subject to existing regulations, e.g. 43 CFR 3809, and any future regulations the Secretary of the Interior may prescribe to protect the rivers included in the NWSRS, new mining claims and mineral leases can be allowed. All mineral activity on federally administered land must be conducted in a manner that minimizes surface disturbance, water sedimentation, pollution and visual impairment. Reasonable mining claim and mineral lease access will be permitted. Mining claims within the wild river area boundary perfected after the effective date of designation can be patented only as to the mineral estate and not the surface estate.

Road and Trail Construction

Existing parallel roads can be maintained on one or both riverbanks. There can be several bridge crossings and numerous river access points.

Agricultural Practices and Livestock Grazing

In comparison to scenic river areas, lands may be managed for a full range of agricultural and livestock grazing uses, consistent with current practices.

Recreation Facilities

Interpretive centers, administrative headquarters, campgrounds and picnic areas may be established in proximity to the river. Recreational classification does not require extensive recreation development.

Public Use and Access

Recreation use including, but not limited to, hiking, fishing, hunting and boating is encouraged in recreational river areas to the extent consistent with the protection of the river environment. Public use and access may be regulated and distributed where necessary to protect and enhance recreational river values.

Rights-of-Way

New transmission lines, natural gas lines, water lines, etc., are discouraged unless specifically prohibited outright by other plans, orders or laws. Where no reasonable alternative exists, additional or new facilities should be restricted to existing rights-of-way. Where new rights-of-way are unavoidable, locations and construction techniques will be selected to minimize adverse effects on recreational river area-related values and fully evaluated during the site selection process.

Motorized Travel

This use, on land, will generally be permitted, on existing roads. Controls will usually be similar to that of surrounding lands. Motorized travel on water will be in accordance with existing regulations or restrictions.

O.9.4 Management Objectives Common to All Wild, Scenic, and Recreational Rivers

Wilderness and Wilderness Study Areas

Management of river areas that overlap designated wilderness areas or wilderness study areas will meet whichever standard is highest. If an area is released from wilderness study area status and the associated Interim Management Policy, the applicable river classification standards and guidelines would then apply.

Fire Protection and Suppression

Management and suppression of fires within a designated river area will be carried out in a manner compatible with contiguous federal lands. On wildfires, suppression methods will be utilized that minimizes the long-term impacts on the river and surrounding area. Pre-suppression and prevention activities will be conducted in a manner that reflects management objectives for the specific river segment. Prescribed fire may be utilized to maintain or restore ecological condition or meet objectives of the river plan.

Insects, Diseases and Noxious Weeds

The control of forest and rangeland pests, diseases and noxious weed infestations will be carried out in a manner compatible with the intent of the WSR Act and management objectives of contiguous federal lands.

Cultural Resources

Historic and prehistoric resource sites will be identified, evaluated and protected in a manner compatible with the objectives of the river and in accordance with applicable regulations and policies. Where appropriate, historic or prehistoric sites will be stabilized, enhanced and interpreted.

Fish and Wildlife Habitat Improvement

The construction and maintenance of minor structures for the protection, conservation, rehabilitation and enhancement of fish and wildlife habitat are acceptable, provided they do not affect the free-flowing characteristics of the river, are compatible with the classifications, that the area remains natural in appearance and the practices or structures harmonize with the surrounding environment.

Appendix P

Development of Standards for Public Land Health and Grazing Management Guidelines

Appendix P

P.0 Standards and Guidelines for BLM

P.1 Development of Standards for Public Land Health and Grazing Management Guidelines

P.1.1 Introduction

Congress passed the Taylor Grazing Act in 1934 to direct occupancy and use of public rangelands, to preserve natural resources from destruction or unnecessary injury, provide for the orderly use, improvement, and development of rangelands. Since enactment of the Taylor Grazing Act, several studies and reports have identified problems on the western rangelands. The Public Rangelands Improvement Act (PRIA, 1978) identified that rangelands are producing below their potential, rangelands will remain in an unsatisfactory condition and some areas may decline further under present levels of funding. These unsatisfactory conditions present a high risk of soil loss, water loss, loss of or threats to fish and wildlife habitat, loss of forage for livestock and grazing animals, and unpredictable and undesirable long term local and regional climatic and economic changes.

Resource conditions have improved since passage of PRIA, but many riparian areas continue to be degraded and are not functioning properly. The Director of the Bureau of Land Management requested the agency's National Public Lands Advisory Council to recommend ways to improve BLM's rangeland management program. In 1991, the Council commissioned a blue-ribbon panel of professional ecologists and rangeland managers who produced a report titled *Rangeland-Program Initiatives and Strategies*. Their report concluded that BLM's primary objectives should be to protect the basic components of rangelands: soil, water, and vegetation.

The BLM initiated a new effort, in 1993, commonly referred to as "Rangeland Reform 94." The focus of this effort is to enhance the environmental health of public rangelands. This effort was initiated with the publication of *Rangeland Health: New Methods to Classify, Inventory, and Monitor Rangelands*, 1994. The Committee published the report on Rangeland Classification, Board of Agriculture, of the National Research Council. The report explained criteria and indicators of rangeland health, assessment practices, and inventory and monitoring requirements.

The "Rangeland Reform" initiative culminated in a national environmental impact statement to provide grazing management direction to improve ecological conditions while providing for sustainable development on the land. In 1995, the Secretary of the Interior developed new grazing regulations to implement needed changes in BLM's rangeland management program.

P.1.2 Purpose and Need

The “Rangeland Reform 94” effort resulted in the publication of a final rule for Grazing Administration of Public Lands, on February 22, 1995, that became effective August 21, 1995. Under section 4108.2 of these regulations the BLM State Director is required to develop state or regional standards and guidelines for grazing administration in consultation with a BLM Resource Advisory Council (District Advisory Council), other agencies, and the public. The purpose of the standards and guidelines is to ensure the long-term health of public rangelands as indicated by the following quotations from the Federal Register, Vol. 60, No. 35, page 9956, dated February 22, 1995:

“The guiding principles for standards and guidelines require that state or regional standards and guidelines address the basic components of healthy rangelands.”

“The Department intends that the standards and guidelines will result in a balance of sustainable development and multiple use along with progress towards attaining healthy, properly functioning rangelands.”

“The Department believes that by implementing grazing-related actions that are consistent with the fundamentals of Subpart 4180.1 and the guiding principles of Subpart 4180.2, the long-term health of public rangelands can be ensured.”

P.1.3 Fundamentals of Rangeland Health

In its report, the Committee for the National Research Council defined rangeland health as “...the degree to which the integrity of the soil and ecological processes of rangeland ecosystems are sustained,” and in particular those “ecological processes that are most important in sustaining the capacity of rangeland to satisfy values and produce commodities.” The committee from the Council recommended “...the determination of whether a rangeland is healthy, at risk, or unhealthy should be based on the evaluation of three criteria: degree of soil stability and watershed function, integrity of nutrient cycles and energy flow, and presence of functioning recovery mechanisms” (Ibid). When the factors of a healthy rangeland site are met, then values and commodities will be conserved. The “Rangeland Health Matrix” developed by the National Research Council is presented at the end of this section.

Title 43 of the Code of Federal Regulation, Section 4180 of the grazing regulations directs the authorized officer to ensure the following conditions of rangeland health exist and that each of these components are addressed during the development of regional standards:

- Watersheds are in or are making significant progress toward properly functioning physical condition, including their upland, wetland, and aquatic components; soil and plant conditions support infiltration, soil moisture storage, and the release of water that are in balance with climate and landform and maintain or improve water quality, water quantity, and the timing and duration of flow.
- Ecological processes, including the hydrologic cycle, nutrient cycle, and energy flow, are maintained, or there is significant progress toward their attainment, in order to support healthy biotic populations and communities.
- Water quality complies with State water quality standards and achieves, or is making significant progress toward achieving, established BLM management objectives such as meeting wildlife needs.
- Habitats are, or are making significant progress toward being restored or maintained for federally threatened and endangered species, federal proposed or candidate and other special status species.

Items (a) and (b) prescribe physical and biological characteristics of rangeland health. Items (c) and (d) describe legal requirements that will be met when healthy rangelands are properly functioning (43 CFR 4180.1). In addition, habitat quality for native plant and animal populations and communities is identified as an ecological component that must be addressed in 43 CFR 4180.2 when developing regional standards.

P.1.4 Attributes for Standards and Guidelines

The fundamentals of rangeland health, guiding principles for standards and the fallback standards address ecological components that are affected by all uses of public rangelands, not just livestock grazing. However, the scope of this final rule, and therefore the fundamental of rangeland health of part 4180.1, and the standards and guidelines to be made effective under part 4180.2, is limited to grazing administration (Federal Register, Vol. 60, No. 35, pg. 9970-9971). The following are characteristics of standards and guidelines.

Standard

- Criterion regarding a resource quality or quantity upon which a judgement or decision is based (e.g., a statement concerning expected ecosystem or rangeland health)
- Measurable
- Establishes parameters within which resource uses and management activities can be conducted
- Should have observable indicators

Guideline

- Describes a practice, prescription, method or technique used to ensure that grazing management activities meet standards
- Either a set of management practices from which one or more practices is selected; or is a specific, required management practice
- Could be adapted or changed when monitoring or other information indicates the guidelines are not effective or a better means of meeting applicable standard exists

At a minimum, state or regional guidelines must address the following:

- Maintain or promote adequate amounts of vegetative ground cover, including standing plant material and litter, to support infiltration, maintain soil moisture storage, and stabilize soils
- Maintain or promote subsurface soil conditions that support permeability rates, appropriate to climate and soils
- Maintain, improve or restore riparian-wetland functions including energy dissipation, sediment capture, groundwater recharge and stream bank stability
- Maintain or promote stream channel morphology (e.g. gradient width/depth ratio, channel roughness and sinuosity) and functions appropriate to climate and landform
- Maintain or promote the appropriate kinds and amounts of organisms, plants and animals to support the hydrologic cycle, nutrient cycle, and energy flow
- Promote the opportunity for seedling establishment of appropriate plant species when climate conditions and space allow
- Maintain, restore or enhance water quality to meet management objectives, such as meeting wildlife needs

- Restore, maintain or enhance habitats to assist in the recovery of Federal threatened or endangered species
- Restore, maintain or enhance habitats of federal proposed, Category 1 and 2 federal candidate, and other special status species to promote their conservation
- Maintain or promote the physical and biological conditions to sustain native populations and communities
- Emphasize native species in the support of ecological function
- Incorporate the use of non-native plant species only in those situations in which native species are not available in sufficient quantities or are incapable of maintaining or achieving properly functioning conditions and biological health

P.1.5 Resource Advisory Council Direction

Under the February 22, 1995, rulemaking, the Secretary of the Interior called for the formation of Resource Advisory Councils (RACs) to advise the BLM about defining areas and the development of standards and guidelines for those areas. The RACs will advise the BLM concerning preparation, amendment, and implementation of land use plans. The existing California Desert District Advisory Council (DAC) serves as the California Desert District's Resource Advisory Council. The rulemaking directs the State Director to coordinate with Indian tribes, the public, and affected state and federal agencies during development of standards and guidelines.

The staffs in areas once defined as the Bakerfield, Ukiah, and Susanville Districts, coordinated on a state-wide planning effort called *Rangeland Health Standards and Guidelines for California and Northwestern Nevada, Environmental Impact Statement* to adopt regional standards for rangeland health and guidelines for grazing management on BLM-administered lands. The DAC chose not to initiate a new planning process for the express purpose of analyzing livestock standard and guidelines nor contribute staff to the statewide effort. The Council preferred instead to develop standards for all public land uses through several ongoing planning efforts. In addition, they felt it would be more efficient to address standards at the planning area level instead of desert-wide, and the CDCA Plan primarily conforms to the fundamentals of rangeland health. These planning efforts include the Western Mojave Coordinated Management Plan, Northern and Eastern Mojave Desert Planning Effort, Coachella Valley Habitat Conservation Plan, Northern and Eastern Colorado Desert Coordinated Management Plan, and plan amendments for the South Coast Resource Management Plan and the Eastern San Diego County Management Framework Plan.

The DAC has been actively involved in development of Standards for Public Land Health and Guidelines for Grazing Management. Early in the process a subcommittee was formed to develop a proposal for standards and guidelines, their recommendations are listed at the end of this section. Upon completion of the Northern and Eastern Mojave Desert Planning Effort the State Director will submit a set of standards and guidelines for approval by the Secretary of the Interior. Adoption of the regional standards will occur when the Secretary concurs. Until adoption of the regional standards, the fallback standards and guidelines or existing planning and activity plan guidance will be utilized, depending on which one more closely matches the fundamentals of rangeland health.

P.1.6 Standards and Guidelines- Constraints and Development

The standards for public land health apply to resource uses and activities undertaken on the public lands. The guidelines for livestock grazing apply only to livestock grazing management practices. Guidelines for activities other than livestock grazing are not proposed at this time; however, BLM intends to formulate additional guidelines in the future as opportunities present themselves.

The standards and the guidelines for livestock grazing are subject to the approval of the Secretary of Interior. Pending Secretarial approval, the National Fallback Standards and Guidelines apply.

The intent of the standards and guidelines is to ensure a balance of sustainable development and multiple use along with progress toward attaining healthy, properly functioning ecosystems.

The standards and applicable guidelines will be implemented through terms and conditions of permits, leases, and other authorizations or actions issued or undertaken in accordance with BLM's approved land use plans.

To the extent possible, implementation will be determined and applied through collaborative management approaches with other land owners, organizations, and agencies on a regional or watershed scale, or in relation to discreet land use plan units such as areas designated for OHV use as open, limited, or closed.

At a minimum, implementation will be coordinated and in consultation with the affected permittees/lessees, the appropriate State agencies, tribes, and interested public.

BLM's grazing regulations require that "appropriate action" be taken when "existing grazing management practices or levels of grazing use... are significant factors in failing to achieve the standards and... guidelines." BLM will take corrective action as practicable for other management practices or uses not meeting the standards.

Some areas may require years to fully achieve the standards, due to natural factors such as climatic conditions, soils, presence of naturalized non-native plant species, and other related factors.

The values and demand for use of the public lands will continue to increase and be diverse.

In applying the standards and any applicable guidelines, BLM will emphasize a balanced approach to resource management, taking into account such factors as context and intensity of impacts and the opportunities for restoration.

P.2 Standards and Guidelines – DAC Recommendations

P.2.1 Standards

Soil

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

- Canopy and ground cover are appropriate for the site
- There is diversity of plant species with a variety of root depths
- Litter and soil organic matter are present at suitable sites
- Maintain the presence of microbotic soil crusts that are 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, federal 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 litter within acceptable limits
- 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 to prevent the need for listing 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 will 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
- Maintain shading of stream courses and water sources for riparian dependent species
- Stream is in balance with water and sediment being supplied by the watershed
- Stream channel size and meander is 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

Water quality will meet state and federal standards including exemptions allowable by law as indicated by:

- Dissolved oxygen levels, aquatic organisms and plants (e.g., macro invertebrates, fish and algae) indicate support of beneficial uses
- Chemical constituents, water temperature, nutrient loads, fecal coliform and turbidity are appropriate for the site or source
- Best Management Practices will be implemented.

Air Quality:

Air quality will meet State and Federal standards including exemptions allowable by law.

- Best Management Practices will be implemented.

P.3 Guidelines for Grazing Management

Resource conditions of each allotment will be routinely assessed to determine if Public Land Health Standards are being met. In those areas not meeting a Standard, monitoring processes will be established if they do not presently exist to monitor indicators of health until the Standard or resource objective has been attained. 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 Plans. In an area where a Standard has not been met, the results of monitoring the modification or implementation of grazing management actions will be reviewed annually. During the final phase of the assessment process, the Determination will schedule the next assessment of resource conditions. A livestock trailing network, grazed plants, livestock facilities, and animal waste are expected impacts in all grazing allotments and will be considered during analysis of the assessment/monitoring process. To attain Standards and resource objectives, the best available science will be used to determine appropriate grazing management actions. Cooperative funding and assistance from other agencies, individuals, and groups will be sought to collect prescribed monitoring data for indicators of each Standard.

- Facilities are to 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 will 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, adits, and seeps) will be modified so PFC and resource objectives can be met, and incompatible projects will be modified to bring them into compliance. The BLM will consult, cooperate, and coordinate with affected interests and livestock producer(s) prior to authorizing modification of existing projects and initiation of new projects. New range improvement facilities are to be located away from wetland systems if they conflict with achieving or maintaining PFC and resource objectives.
- Supplements will be located well away from wetland systems.
- Management practices will 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 landform.

- Grazing management practices are to meet State and Federal water quality standards. Where impoundments (stock ponds) and troughs that have a sustained discharge yield of less than 200 gallons per day to surface or groundwater are accepted from meeting State drinking water standards per SWRCB Resolution Number 88-63.
- In the California Desert Conservation Area all wildfires in grazing allotments will be suppressed. However, to restore degraded habitats infested with invasive weeds (e.g., tamarisk) prescribed burning may be utilized as a tool for restoration on a case-by-case basis. Prescribed burns may be used as a management tool for chaparral plant communities in the South Coast Region, where fire is a natural part of the regime.
- When climatic conditions and space allow, seedling establishment of native species will be promoted.
- Grazing on designated ephemeral (annual and perennial) rangeland is 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.
- During prolonged drought, range stocking will be reduced to scientifically based carrying capacity, based on climatic conditions. Livestock utilization of key perennial species on year-long allotments will be checked about March 1 when the Palmer Severity Drought Index/Standardized Precipitation Index indicates dry conditions are expected to continue.
- Through the assessment process or monitoring efforts, the extent of invasive and/or exotic plants and animals will be recorded and evaluated for future control measures. Methods and prescriptions will be implemented, and an evaluation will be completed to ascertain future control measures.
- Restore, maintain or enhance habitats to assist in the recovery of Federally listed threatened and endangered species. Restore, maintain or enhance habitats of special status species including Federal proposed, Federal candidates, BLM sensitive, or California State T&E to promote their conservation.
- Grazing activities will support biological diversity across the landscape, and native species and microbiotic crusts are to be maintained.
- Experimental and research efforts will be encouraged to provide answers to grazing management and related resource concerns through cooperative and collaborative efforts with outside agencies, groups, and entities.
- Based on Holechek's (et al., 1998) work or the best available scientific information, livestock utilization level of key perennial species of the Mojave Desert (range type) will not exceed 40 percent on ranges that are grazed during the dormant season and are meeting standards. Rangelands that are grazed during the active growing season and are meeting standards will not exceed 25 percent utilization of key species. The utilization range between 25 and 40 percent is for those forage species with a proper use factor that will allow consumption up to and between 25 and 40 percent otherwise lower use limits will prevail. Until modified with new information, utilization of the following general range types will be prescribed for grazing use.

Table P.1 – Utilization Guidelines for Different Range Types in the CDD¹

Average Precipitation				Reference
10-13	4-8	25-35	Salt desert shrub land	Hutchings and Stewart 1953; Cook and Child 1971
13-30	8-12	30-40	Semidesert grass and shrubland	Valentine 1970; Paulsen and Ares 1961; Martin and Cable 1974; Holechek 1991
13-30	8-12	30-40	Sagebrush grassland	Pechanec and Stewart 1949; Laycock and Conrad 1981
25-100	10-40	50-60	California annual grassland	Hooper and Heady 1970; Bartolome et al. 1980; Rosiere 1987
40-130	16-50	30-40	Mountain shrub land	Pickford and Reid 1948; Skovlin et al. 1976
40-130	16-50	30-40	Oak woodland	Pieper 1970
25-45	9-16	30-40	Pinyon-juniper woodland	Pieper 1970

¹ Adapted from Holechek et al. and Holechek 1991

² Rangelands in good condition and/or grazed during the dormant season can withstand the higher utilization level. Those in poor condition or grazed during active growth should receive the lower utilization.

P.4 BLM Proposed Standards – Changes in California Desert District Advisory Council (DAC) Recommendations

The Desert Advisory Council proposed four standards, which, as modified, are proposed for adoption in the California Desert District, including the NEMO planning area. The BLM has made minor editorial changes to the wording proposed by the DAC in some instances, to clarify meaning, and these are not discussed. Other additions, deletions, or changes to the DAC Recommendations follow, with a short explanation after each modification (deletions are in strikethrough, additions are underlined and bolded):

1. Soils exhibit infiltration and permeability rates that are appropriate to soil type, climate, geology, **and land use.** – This addition was made to acknowledge that past land uses might affect site potential for these soil factors, for the reasonably foreseeable future.
2. **Alien and noxious plants do not exceed acceptable levels.** – This addition was made in response to BLM policy to address this issue as a critical element of the human environment, in recognition of the many direct and indirect roles these plants have in interfering with the attainment and maintenance of diverse biological communities.
3. ~~Water quality is improved or maintained at the highest level feasible.~~ – This was deleted as it was considered potentially unattainable, based on cost consideration alone. The benefits to wetland systems which would be derived from water quality maintenance or improvements provide the better standard to judge whether the BLM should pursue, them, and these would be based on the indicators outlined.
4. ~~Vegetative cover of no less than 70 percent for a stream reach or the percentage that will adequately protects banks, and dissipates energy during peak water flows~~ – This indicator was twofold, a quantitative indicator that was optional, or a qualitative indicator that was a requirement, i.e. that cover adequately protect banks. It matters as much where as how much cover there is. The qualitative indicator with a site-specific analysis is a more appropriate desert-wide standard (see also next standard).
5. **Shading of stream courses and water sources support riparian vertebrates and invertebrates** – This was added to supplement the vegetative cover indicator to assure optimal temperatures are maintained that sustain biotic communities within wetland systems.
6. ~~If present, point bars are vegetated~~ – This was deleted as it was considered potentially unattainable, based on site potential. Site-specific analysis can more appropriately determine whether point bars will sustain vegetation, given the frequency and size of flooding and soil depositional events.
7. Water Quality will meet State and Federal standards **including exemptions allowable by law.** – This addition acknowledges that various uses of the public lands are covered by exemptions, under certain circumstances, and that those exemptions will be recognized.

Appendix Q

Route Designation Process, Methodology and Results

Changes to this chapter in developing the FEIS

1. Addition of Table with specific route designations
2. Addition of Table with specific waters strategies
3. Made minor edits to the narrative on route inventory and approval process for desert tortoise subregions, including definitions used.

Appendix Q

Q.0 Northern and Eastern Mojave Plan Route Designation Process and Methodology

The Northern and Eastern Mojave Desert (NEMO) Coordinated Management Plan was initiated to address declines in the population of desert tortoises (*Gopherus agassizii*), listed as a threatened species in 1990 pursuant to the Endangered Species Act of 1973, as amended, and other species listed as Threatened or Endangered in the planning area (See Chapter 1, Section 1.3, Purpose and Need and Scope). In 1994, the U.S. Fish and Wildlife Service designated desert tortoise critical habitat and completed a recovery plan, which contains recommendations for protective action. This listing and the need to provide for recovery affects several local, State, and Federal agencies, each with differing mandates for conservation and protection of the tortoise.

Certain decisions at the land-use plan level will constitute amendments to the California Desert Conservation Area (CDCA) Plan (1980), as amended. Other decisions relate to activity-plan level actions of which the designation of routes of travel as “open,” “limited,” or “closed” is a part. Designations within the NEMO planning area will be based, in part, on known or predicted occurrence of special status animals and plants, and an inventory of existing routes of travel. [Note: Throughout the NEMO planning area, numerous washes constituting existing routes of travel in accordance with the CDCA Plan are not individually delineated on route maps given their extensive nature. The current NEMO route inventory depicts 100% of other existing routes within the planning area (to the degree that such an inventory is possible), including primary and major secondary wash routes.]

The CDCA Plan prescribed that motorized vehicles in Multiple-Use Class (MUC) L (Limited) areas be directed to approved routes, that is, routes that have been designated “open” or “limited.” It is proposed as the preferred action of the NEMO Plan that motorized-vehicle access throughout the planning area be addressed in a manner consistent with MUC L areas. In designating routes of travel accordingly, the criteria expressed in Executive Order 11644 (February 9, 1972), thereafter transformed into regulations at 43 CFR 8342.1, must be applied. The regulations require that all designations of areas and trails be based on the protection of the resources of the public lands, the promotion of the safety of all the users of the public lands, and the minimization of conflicts among various uses of the public lands. Of particular relevance to the NEMO Plan are the criteria expressed at 43 CFR 8342.1(a) and (b). The first requires that areas and trails be located to minimize damage to soil, watershed, vegetation, air, or other resources of the public lands. The second requires that areas and trails be located to minimize harassment of wildlife or significant disruption of wildlife habitats, and that special attention be given to protect endangered or threatened species and their habitats.

Q.1 Routes Of Travel: Process

The products of the Northern and Eastern Mojave (NEMO) Plan for the Routes of Travel process would be twofold:

1. To establish the process to be used to designate all routes of travel, inclusive of washes for the NEMO planning area, which would accomplish the objectives established in the California Desert Conservation Area (CDCA) Plan (1980) as amended
2. To designate routes within desert tortoise critical and Category I habitat within the planning area. The scope of inventory and specific route designation is limited to the first two route sub-regions—those routes located within and adjacent to desert tortoise critical habitat and Category I habitat (Piute-Fenner Subregion and Shadow-Ivanpah Subregion). All public lands are currently MUC “L” or “M” in these subregions. Under the Proposed Plan, lands within proposed DWMA would be modified to MUC “L”.

The existing routes in other sub-regions are not included in this inventory or route designation effort. Routes in the remaining sub-regions are generally considered open as existing routes according to the CDCA Plan, pending designations, unless otherwise previously designated (CDCA activity plans, previous route designations by Federal Register) or signed as closed¹, until subsequent route designation in those sub-regions are completed. Route designation for all sub-regions is scheduled for completion no later than June 2004.

Consistent with 43 CFR 8342.1 and CDCA Plan guidance, BLM would approve routes, (including wash routes) to be designated in MUC Limited “L” and Moderate “M” lands. Approved “existing” routes would be designated “open”, “closed” or “limited”. Routes not approved would be closed without further designation effort.

Routes located on private lands or portions thereof are considered outside the scope of BLM approval and route designation efforts. Where the holdings (e.g., rights or interests) of non-BLM parties may be affected adversely by BLM approval and/or route designation determinations, BLM would address the circumstances on a case-by-case basis.

¹ Routes may be closed under provisions of 43 CFR 8341.2, Special Rules, for various purposes and timeframes. This would not interfere with the subsequent route designation for the affected routes.

Q.2 Route Inventory: Method

Q.2.1 Task 1: Identify “Existing” Route Network

The first task was to identify the “existing” route network within Category I habitat. To be “existing”, a route is to have been established before approval of the CDCA Plan (1980), have a width of 2 feet (minimum), and show significant surface evidence of prior use by vehicles, or, for washes, have a history of prior use.

A blue-line vehicle route inventory set of maps for the CDCA was produced in 1980, based on aerial photos taken in the 1977-1979 timeframe, with considerable ground truthing in some areas. The Northern and Eastern Mojave Desert generally was an area that had less ground truthing due to lower use levels and relatively low conflicts in most of the area. Lacking a completely ground-truthed inventory of 1980 routes, the Northern and Eastern Mojave Plan the BLM adopted a “baseline” inventory generated from field verification of routes gathered from multiple sources. Those sources including Interim Critical Management Program (ICMP) maps from 1974², the 1977-1979 CDCA Plan maps that were generated based on the aerial photos for the 1980 CDCA Plan, subsequently updated BLM “Desert Access Guide” maps, 7.5-minute USGS topographical maps, information from BLM field rangers, and almost ten years of route inventory data.

In 1993, with the goal of driving all routes in the planning area and recording their locations, BLM’s Needles Office began its inventory effort by supplementing office staff with a full-time volunteer and using field visits to collect route location data. Initially, the data were transferred to MOSS, an early version of a Geographic Information System Database. However, subsequent conversion to the current GIS Database version, ARC/INFO, resulted in some loss of MOSS data (e.g., route identification numbers). During 1995, BLM phased MOSS out, and data were transferred directly into ARC/INFO.

In 1998, BLM began collection of field-verified data from many of the routes in the largest of the Category I habitat areas (Piute-Fenner). In the three smaller Category I habitat areas (Shadow Valley, North Ivanpah, and Ivanpah), BLM based its information on earlier inventories and office staff knowledge from previous field work. BLM also offered private landowners and organized groups the opportunity to review and comment on early inventories and make recommendations, and, in 1998 and 1999, collected route data from those needing access to continue operating their facilities.

Q.2.2 Task 2: Identify “Existing” Wash Routes

BLM defines a desert “wash” as a watercourse (whether dry, or with running or standing water) having physical characteristics (e.g., width, soil, slope, topography, vegetative cover) that permit the passage of motorized vehicles. BLM recognizes that, within periods of time that can vary substantially, evidence of use in washes (vehicle tracks, as well as more tangible residuals) is erased or relocated by the action of wind and water, particularly in sandy washes. This complicates field surveys intended to determine whether or not motor vehicle use of any given wash is a matter of fact. As a result, some genuine routes in washes go unrecognized during inventory efforts.

² The ICMP maps and designations were invalidated with the adoption of the CDCA Plan and its designations, but were a useful tool for development of the route inventory, as ICMP routes served to confirm routes occurring on CDCA maps. Also, some routes appeared on the ICMP maps, did not appear on the CDCA Plan maps, then appeared again on USGS or DAG maps, indicating potential mapping errors in need of field verification.

Early in this process, BLM found it unrealistic to field verify wash routes in Category I desert tortoise habitat because of their large numbers. As a result, BLM field verified those washes conventionally used as routes of travel on a regular basis. That is, in Category I desert tortoise habitat washes were eliminated from consideration if they could not reasonably meet the biological criteria for washes, i.e., that they were navigable and part of the primary transportation network (See Section Q.2.3, Item A. for wash criteria). If they are in the inventory of existing routes or other evidence was found that they are part of the primary transportation network they were approved for designation. The mileage of Category I wash routes that could potentially meet the biological criteria, based on existing inventories and route maps, as well as evaluating the overall network, was identified. The mileage of Category I wash routes and approach to designation of washes is the same for all alternatives, based on the biological criteria in the desert tortoise sub-regions.

Q.2.3 ROUTE DESIGNATION: Definitions/Criteria

In the NEMO planning area, with the following regulatory (43 CFR 8342.1) criteria, BLM is to designate areas and trails by locating them to minimize:

- Damage to resources of the public lands (e.g., soil, watershed, vegetation, air) and prevent impairment of wilderness suitability
- Harassment of wildlife or significant disruption of their habitats, giving special attention to protecting endangered or threatened species and their habitats
- Conflicts between off-road vehicle use and other existing or proposed recreation uses of the same or neighboring public lands, and ensure the compatibility of such uses with existing conditions in populated areas, taking into account noise and other factors.

BLM also is to locate no areas or trails in officially designated wilderness areas or primitive areas. BLM is to locate areas and trails in natural areas only if the authorized officer determines that off-road vehicle use will not adversely affect the values for which those areas were established (e.g., natural, esthetic, or scenic).

Additional biological parameters to minimize harassment of wildlife and significant disruption of wildlife habitats were considered throughout the designation. They include:

- Washes will be closed unless they provide the major through access in an area and no reasonable alternative exists, or they provide access to a major recreational site and do not result in substantive degradation of habitat
- The route designation process shall consider fragment size
- Closure of routes within ¼ mile of any significant bat roost shall be strongly considered
- Closure of routes within ¼ mile of known prairie falcon or golden eagle eyries (cliff nests) shall be strongly considered
- Closure of routes within ¼ mile of natural or artificial water sources (e.g. springs, seeps, streams, guzzlers) shall be strongly considered
- Closure of “redundant” routes shall be strongly considered

BLM proposes to designate these routes of travel based on the application of the 43 CFR 8342.1 regulations and additional biological criteria for biological and natural resources developed pursuant to these regulations and the Desert Tortoise Recovery Plan, as well as existing CDCA Plan guidance (e.g., limitations on Ivanpah Dry Lake Bed). Throughout the route designation process, BLM recognized specific access requirements granted through formal authorization processes (e.g., rights-of-way) and the value of a motorized recreation-touring network. BLM also recognized that the requirements of both generally are reflected in the existence of current roads, whether paved and/or maintained dirt. As a result, if a designation of “open” is not consistent with regulatory criteria (as set forth above), BLM would designate such roads/routes as “limited” or “closed”, as necessary to protect sensitive values (e.g., biological or cultural resources).

The NEMO planning area includes part of a loosely defined larger network of roads and routes, including those in washes, traditionally used for motorized recreation.

- A. Within the desert tortoise sub-regions, designation criteria generally would result in wash closure. BLM would designate specific washes as “open” or “limited” for motor vehicle use if (1) BLM identifies them as part of the primary recreational touring network, and (2) they generally exhibited significant evidence of motorized vehicle use at the time of the field inventory phase and meet the CDCA Plan’s general definition of navigability, and (3) if motor vehicle use would not complicate BLM land management circumstances unreasonably (e.g., complex situations involving large numbers of distinct and affected parties, such as the “checkerboard” pattern of public and private land ownership). For the Proposed Plan, BLM considered the importance of those washes as desert tortoise habitat and whether or not they were primary recreation access links. For example, a portion of one of the washes that was included in the route inventory was closed—the Southern portion of Bull Run Wash—because it provides one of the few corridors under I-15 for desert tortoise passage and also runs adjacent to Turquoise Mountain Road which offers an alternative to motor-vehicles. The wash is an open route north of Turquoise Mountain Road.
- B. BLM would designate some routes as “limited”, wherein use would be subject to limits on the number and/or type of vehicle used, the time or season of use (e.g., opening day for hunting season in washes in proposed conservation areas), permitting or licensing requirements, and/or speed limits. Also, for wildlife management purposes (e.g., guzzler maintenance), BLM’s designation of a route as “limited” would allow access for authorized users only. Since Ivanpah Dry Lake is a closed area, all routes which lead to, cross, or connect in some way to the area were designated as “limited” and require a permit to use.
- C. In the remainder of the planning area, BLM would designate specific washes as “open” or “limited” for motor vehicle use (1) according to criteria established during the route designation process, consistent with the sensitivity and MUC of the area, and (2) they generally exhibited significant evidence of motorized vehicle use at the time of the field inventory phase and meet the CDCA Plan’s general definition of navigability, and (3) if motor vehicle use would not complicate BLM land management circumstances unreasonably (e.g., complex situations involving large numbers of distinct and affected parties, such as the “checkerboard” pattern of public and private land ownership). BLM would designate some routes as “limited”, wherein use would be subject to limits on the number and/or type of vehicle used, the time or season of use (e.g., opening day for hunting season in washes in proposed conservation areas), permitting or licensing requirements, and/or speed limits. Also, for wildlife or other resource management purposes (e.g., guzzler maintenance), BLM’s designation of a route as “limited” would allow access for authorized users only.

For the purposes of route designation, a “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” (CDCA Plan, App. VI). The implication of this definition is that washes may be considered as routes of travel only if wash banks are not compromised (primarily as a function of width), soil stability is not adversely affected, and vegetation is not destroyed consequent to the passage of vehicles (regional standards may provide some thresholds to evaluate this on a landscape level). 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.

A route designated “closed” by the BLM would occur for a variety of reasons.

- Some routes are in excess, spur, or fragment of what is needed (“redundant”) because its purpose seems the same as an alternative route, and/or it offers the same or very similar recreation opportunities or experiences, and if, upon closure, use of such a route would be displaced to another route(s) satisfying 43 CFR 8342.1 criteria.
- Any route that provides access to a point now within a wilderness area, and now provides access to the boundary of that area, or any route that has become a management issue because motor vehicles continue to use it into or through wilderness and no purpose would be served by establishing a trailhead at the wilderness boundary.
- Any route BLM finds to be non-existent or intermittently visible, i.e., those where vehicle use would require the crushing of substantial vegetation, or those no longer used and substantially reclaimed by natural forces, even if such routes are shown on authoritative maps (e.g., the most recent USGS 7.5-minute quadrangle maps).

Q.3 Sign Strategy for Routes

Wayside exhibits or kiosks would be strategically placed throughout the NEMO planning area. The specific objectives of these exhibits are to:

- Provide an updated map showing the network of open, closed, and limited routes, in public areas that receive moderate to high use

Specific to the Desert Tortoise sub-regions, the following additional objectives would apply:

- Increase public awareness of the need to protect desert tortoises and their habitat on California's public lands
- Educate the public regarding their role in protecting tortoises and tortoise habitat
- Modify social behavior in a manner that benefits desert tortoise populations and their habitat
- Increase public knowledge of and support for agency actions to benefit desert tortoises and their habitat.

Q.4 Monitoring Program Development

Executive Order 11644 requires that the effects of OHV activities be monitored on public lands, and on the basis of the information gathered, the appropriate agency shall from time to time amend or rescind designations of areas or other actions taken pursuant to the order. The regulations at 43 CFR 8342.3 in codifying Executive Order 11644 also require such monitoring and subsequent amendment, revision, revocation, or other action as necessary pursuant to the regulations. The CDCA Plan, as amended, states the following:

A major component of the vehicle-access element is the monitoring of impacts resulting from vehicle use. The analysis of impacts and reassessment of management decisions is an integral part of the Bureau's response to the legislative mandate.

The primary objectives of the motorized-vehicle access monitoring program are to:

- Identify and document when unacceptable levels and kinds of impacts occur on natural, cultural, and historic values.
- Identify when impacts will preclude corrective or rehabilitative actions.
- Identify the type of vehicle equipment and/or related use, which is causing, or likely to cause, impacts.
- Provide the information necessary to make immediate and long-range decisions on the use or prohibition of vehicles on designated or existing access routes.

Recommendations of monitoring efforts must be specific to each individual area, taking into consideration such issues as access needs, use levels, user conflicts, and impacts on resources. Monitoring efforts may vary. Monitoring techniques include field observations, remote sensing, ground photographs, and environmental study plots.

Options to limit, designate or close specific travel routes or areas will be available to the manager. These options will be invoked when monitoring reveals that Plan objectives are not being met because of identified adverse effects resulting from vehicle travel.

Q.4.1 Program Development

An implementation element of the NEMO Plan, inclusive of monitoring, has not yet been fully described, nor have associated costs been determined. A monitoring program for the planning area relative to OHV activities and their impacts would likely be integrated with an overall monitoring program pertaining to changes in biological conditions. In turn, the comprehensive NEMO monitoring plan would be developed in conjunction with an effort by the Desert Managers Group to establish a desert-wide monitoring program. As an overall objective, the monitoring program would provide additional baseline data and resource condition assessments (monitoring of certain resources has been ongoing for many years) for improving ecological conditions consistent with BLM policy relative to Rangeland Standards and Guidelines. With this policy initiated in 1993, all uses of public lands are addressed that affect ecological components which include watersheds, ecological processes, wildlife habitats, soils, and air and water quality.

Specific to the component of the monitoring program addressing OHV activities and their impacts, and related desert tortoise use patterns, identified personnel would be required for implementation. A State Off-Highway Vehicle Grant would be directed for such purposes subsequent to establishing the parameters of the monitoring program by various cooperating agencies and interest groups. Specific monitoring program elements would be developed by BLM and other agency staff. The monitoring program would necessarily be dynamic in response to data gathered and conclusions formulated.

Q.4.2 Monitoring Program Benefits

To date, information pertaining to use levels, user conflicts, and impacts on resources within the CDCA, and in particular in the NEMO planning area, is lacking in specificity to a large degree. The benefits of a targeted monitoring program are several:

- Facilitates Bureau compliance with the Executive Order, regulations, and CDCA Plan requirements pertaining to monitoring and adaptive management, including restoration where appropriate
- Substantiates management decisions which permit the continued use of OHVs where impacts are not significant as well as those which direct use away from areas where the converse is demonstrated
- May provide new data for modification of route and resource management strategies and route designation decisions, particularly in sensitive and higher use areas
- Identifies trends in vehicular use and resource conditions subsequent to which monitoring efforts can be more effectively directed.

Table Q.1 – Routes of Travel Designations

					Proposed Plan Designations
699001	Goffs, Bannock, Homer		PIUTE-FENNER	1, 2, 23	openp
699002	Homer	map error	PIUTE-FENNER	1	closedt
699003	Homer	PVT—map error	PIUTE-FENNER	1	Unclassified
699004	Homer, Bannock	water source sg guzzler	PIUTE-FENNER	1, 2	openr/w
699005	Homer		PIUTE-FENNER	1	openr
699006	Homer, Bannock		PIUTE-FENNER	1, 2	openr
699007	Bannock		PIUTE-FENNER	2	openp
699008	Bannock		PIUTE-FENNER	2	openr
699009	Bannock	BLM/PVT	PIUTE-FENNER	2	opena
699010	Bannock		PIUTE-FENNER	2	openr
699011	Bannock		PIUTE-FENNER	2	openr
699012	Bannock		PIUTE-FENNER	2	openr
699013	Bannock		PIUTE-FENNER	2	openr
699014	Bannock		PIUTE-FENNER	2	openr
699015	Bannock	BLM/PVT	PIUTE-FENNER	2	closeda
699016	Bannock, Homer		PIUTE-FENNER	1, 2	openr/sp
699017	Bannock	wilderness	PIUTE-FENNER	2	openr/partiala
699018	Fenner		PIUTE-FENNER	20	openp
699019	Bannock		PIUTE-FENNER	2	closedg
699020	Bannock	BLM/PVT	PIUTE-FENNER	2	opena
699021	Bannock	BLM/PVT	PIUTE-FENNER	2	closedg
699023	Homer	BLM/PVT	PIUTE-FENNER	1	opena
699024	Homer	BLM/PVT	PIUTE-FENNER	1	opena
699025	Homer	BLM/NPS	PIUTE-FENNER	1	opena
699026	Homer	water source range improv	PIUTE-FENNER	1	openw
699028	Homer, Homer Mountain	water source sg guzzler	PIUTE-FENNER	1, 3	openw/partialg
699029	Homer, Homer Mountain, E Homer Mountain		PIUTE-FENNER	1, 3	openp
699030	E Homer Mountain		PIUTE-FENNER	3	openp
699031	E Homer Mountain, Juniper Mine		PIUTE-FENNER	4, 6	openp
699032	E Homer Mountain	BLM/PVT	PIUTE-FENNER	4	closeda

					Proposed Plan Designations
699033	E Homer Mountain		PIUTE-FENNER	4	closeda
699034	E Homer Mountain	BLM/PVT	PIUTE-FENNER	4	openr/partialg
699035	E Homer Mountain, Homer Mountain		PIUTE-FENNER	3, 4	openr
699036	E Homer Mountain		PIUTE-FENNER	4	openr
699037	E Homer Mountain, Juniper Mine		PIUTE-FENNER	4, 6	openr
699038	E Homer Mountain, Homer	BLM/PVT	PIUTE-FENNER	3, 4	limiteda
699039	E Homer Mountain, Homer Mountain	BLM/PVT	PIUTE-FENNER	3, 4	limiteda
699040	E Homer Mountain, Homer Mountain		PIUTE-FENNER	3, 4	openr
699041	E Homer Mountain		PIUTE-FENNER		closedn
699042	E Homer Mountain, Homer Mountain		PIUTE-FENNER	3, 4	openr
699043	Homer Mountain		PIUTE-FENNER	3	openr
699044	Homer Mountain		PIUTE-FENNER	3	openr
699045	Homer Mountain		PIUTE-FENNER	3	openr
699046	Homer Mountain		PIUTE-FENNER	3	limiteda
699047	Homer Mountain		PIUTE-FENNER	3	openr
699048	Homer Mountain	water source sg guzzler	PIUTE-FENNER	3	openr/w
699049	Homer Mountain, Homer, W Juniper Mine		PIUTE-FENNER	1, 3, 5	openp
699050	E Homer Mountain		PIUTE-FENNER	4	openr
699051	E Homer Mountain	BLM/NV	PIUTE-FENNER	4	closedn/partiala
699052	Juniper Mine	tortoise	PIUTE-FENNER	6	closedt/a
699053	W Juniper Mine, Juniper Mine		PIUTE-FENNER	5, 6	openr/closedn
699054	W Juniper Mine	BLM/NPS	PIUTE-FENNER	5	openr
699055	W Juniper Mine	BLM/PVT	PIUTE-FENNER	5	closedg
699056	W Juniper Mine		PIUTE-FENNER	5	openr
699057	W Juniper Mine		PIUTE-FENNER	5	openr
699058	W Juniper Mine	water source range improv	PIUTE-FENNER	5	closedw
699059	W Juniper Mine	water source range improv	PIUTE-FENNER	5	closedw
699060	W Juniper Mine		PIUTE-FENNER	5	openr
699061	W Juniper Mine		PIUTE-FENNER	5	openr

					Proposed Plan Designations
699062	W Juniper Mine	water source range improv	PIUTE-FENNER	5	openr/w
699063	W Juniper Mine		PIUTE-FENNER	5	closedg/t
699064	W Juniper Mine, Juniper Mine	BLM/NV	PIUTE-FENNER	5, 6	closedn/partiala
699065	Bannock		PIUTE-FENNER	2	openr
699066	Bannock	PVT-map error	PIUTE-FENNER	2	Unclassified
699068	Bannock	BLM/PVT	PIUTE-FENNER	2	opena
699069	Bannock		PIUTE-FENNER	2	closedf
699071	Juniper Mine		PIUTE-FENNER	6	openr
699072	W Juniper Mine		PIUTE-FENNER	5	openr
699073	E Homer Mountain		PIUTE-FENNER	4	openr
699074	E Homer Mountain, Homer Mountain		PIUTE-FENNER	3, 4	openr
699075	E Homer Mountain, Homer Mountain		PIUTE-FENNER	3, 4	openr
699076	E Homer Mountain, Homer Mountain		PIUTE-FENNER	3, 4	openr
699077	Bannock, Homer		PIUTE-FENNER	1, 2	openr
699077	Homer	map error	PIUTE-FENNER	1	closedt/f
699078	Homer		PIUTE-FENNER	1	openr
699079	E Homer Mountain		PIUTE-FENNER	3	openr
699081	E Homer Mountain, Homer Mountain		PIUTE-FENNER	3, 4	openr
699082	E Homer Mountain, Bannock		PIUTE-FENNER	2, 4	openr
699083	Bannock		PIUTE-FENNER	2	openr
699084	Bannock		PIUTE-FENNER	2	openr
699085	Bannock		PIUTE-FENNER	2	openr
699086	Homer, Bannock		PIUTE-FENNER	1, 2	openr
699087	Homer, Bannock		PIUTE-FENNER	1, 2	openr
699088	Homer		PIUTE-FENNER	1	openr
699089	Homer, Bannock		PIUTE-FENNER	1, 2	openr
699090	Homer, Bannock		PIUTE-FENNER	1, 2	openr
699091	Homer		PIUTE-FENNER	1	openr
699092	Bannock		PIUTE-FENNER	2	openr
699093	Bannock		PIUTE-FENNER	2	openr
699094	Bannock		PIUTE-FENNER	2	openr

					Proposed Plan Designations
699097	Bannock		PIUTE-FENNER	2	closedf
699098	E Homer Mountain	BLM/PVT	PIUTE-FENNER	4	limiteda
699100	Homer Mountain		PIUTE-FENNER	3	openr
699101	Homer Mountain, Homer, W Flattop Mountain		PIUTE-FENNER	1, 3, 22	openr
699101	Homer Mountain, W Flattop Mountain		PIUTE-FENNER	3, 22	openp
699102	Homer Mountain, Homer		PIUTE-FENNER	1, 3	closedp
699103	E Homer Mountain		PIUTE-FENNER	4	closedg
699104	Ivanpah Lake, Stateline Pass		IVANPAH	7, 12	openr
699105	Bannock		PIUTE-FENNER	2	closedf
699107	Ivanpah Lake		IVANPAH	7	openr
699108	Homer		PIUTE-FENNER	1	openr
699109	Clark Mountain		IVANPAH	11	closedg
699110	Clark Mountain		IVANPAH	11	closedg
699111	Desert		IVANPAH	8	limitedp
699112	Desert		IVANPAH	8	closedg
699113	Desert		IVANPAH	8	openr
699117	Homer Mountain		PIUTE-FENNER	3	openr/b
699119	Ivanpah Lake	BLM/PVT	IVANPAH	7	closeda
699120	Clark Mountain		IVANPAH	11	openp/sp
699135	Kingston Spring, E Kingston Spring, Ivanpah Lake, Clark Mountain, Turquoise Mountain, Pachalka Spring		SHADOW VALLEY IVANPAH	7, 11, 14, 15, 16,21	openp/b/sp
699144	Bannock		PIUTE-FENNER	2	openr/b
699145	Homer Mountain		PIUTE-FENNER	3	openr
699146	E Kingston Spring	BLM/PVT	SHADOW-VALLEY	14	opena
699181	Ivanpah Lake, Clark Mountain	water source spring	IVANPAH	7, 11	openw
699193	Clark Mountain	water source comment Hackberry Spring	IVANPAH	11	closedw
699194	Ivanpah Lake		IVANPAH	7	closedn
699195	Ivanpah Lake, Clark Mountain		IVANPAH	7, 11	openr
699196	Clark Mountain		IVANPAH	11	openr
699197	Clark Mountain		IVANPAH	11	openr

					Proposed Plan Designations
699198	Ivanpah Lake, Clark Mountain		IVANPAH	7, 11	openr
699199	Clark Mountain	water source in NPS	IVANPAH	11	openr/w
699219	Clark Mountain		IVANPAH	11	openr
699220	Ivanpah Lake, Clark Mountain		IVANPAH	7, 11	openr
699221	Ivanpah Lake, Clark Mountain	water source two springs	IVANPAH	7, 11	openr/w
699222	Clark Mountain	BLM/PVT	IVANPAH	11	openr
699223	Clark Mountain		IVANPAH	11	openr
699224	Clark Mountain	water source in NPS	IVANPAH	11	openr
699225	Clark Mountain		IVANPAH	11	closedn
699226	Ivanpah Lake, Clark Mountain	BLM/PVT	IVANPAH	7, 11	openr
699227	Clark Mountain	BLM/NPS	IVANPAH	11	opena
699228	Desert, Nipton		IVANPAH	8, 10	openr
699229	Desert, Nipton		IVANPAH	8, 10	openr
699230	Desert	water source range improv	IVANPAH	8	limited/closedw
699231	Desert	BLM/PVT	IVANPAH	8	closeda
699232	Ivanpah Lake, Desert, Nipton	BLM/PVT	IVANPAH	7, 8, 10	opena
699233	Clark Mountain	water source comment sg guzzler	IVANPAH	11	openw
699234	Ivanpah Lake		IVANPAH	7	openr
699236	Ivanpah Lake	BLM/PVT	IVANPAH	7	openr/a
699238	Ivanpah Lake		IVANPAH	7	openr
699239	Ivanpah Lake		IVANPAH	7	openr
699241	Ivanpah Lake	BLM/PVT	IVANPAH	7	opena
699242	Ivanpah Lake		IVANPAH	7	openr
699243	Nipton	railroad row	IVANPAH	10	Unclassified
699244	Ivanpah Lake, Mineral Hill		IVANPAH	7, 9	openr
699245	Ivanpah Lake, Mineral Hill	water source sg guzzler	IVANPAH	7, 9	closedw
699246	Mineral Hill	water source sg guzzler	IVANPAH	9	openr/w
699247	Ivanpah Lake, Desert, Nipton		IVANPAH	7, 8, 9	limitedr
699248	Ivanpah Lake	BLM/PVT	IVANPAH	7	limiteda

					Proposed Plan Designations
699249	Ivanpah Lake, Mineral Hill	BLM/PVT	IVANPAH	7, 9	limiteda
699250	Ivanpah Lake		IVANPAH	7	openr
699251	Ivanpah Lake	BLM/PVT	IVANPAH	7	limiteda
699252	Ivanpah Lake	BLM/PVT	IVANPAH	7	limiteda
699253	Ivanpah Lake, Mineral Hill	BLM/PVT	IVANPAH	7, 9	opena
699254	Ivanpah Lake		IVANPAH	7	closedn
699255	Ivanpah Lake, Desert		IVANPAH	7, 8	closedn
699256	Ivanpah Lake, Clark Mountain	water source comment Burro Spring	IVANPAH	7, 11	limitedw
699373	E Kingston Spring, Pachalka Spring	water source Francis Spr	SHADOW-VALLEY	14, 17	openr/w
699375	E Kingston Spring, Valley Wells, Pachalka	BLM/PVT	SHADOW-VALLEY	14, 17, 18	opena
699376	E Kingston Spring, Valley Wells, Pachalka	BLM/PVT	SHADOW-VALLEY	14, 17, 18	openr/limiteda/ closedn
699377	Solomon's Knob		SHADOW-VALLEY	17	openr
699378	Solomon's Knob		SHADOW-VALLEY	17	openr
699379	Solomon's Knob		SHADOW-VALLEY	17	closedg
699379	Solomon's Knob		SHADOW-VALLEY	17	closedg
699380	Ivanpah Lake		IVANPAH	7	closedg
699381	Nipton	Spur off Railroad Right-of-way	IVANPAH	10	closeda
699382	Mineral Hill	BLM/PVT	IVANPAH	9	limiteda
699383	Mineral Hill	BLM/PVT	IVANPAH	9	limiteda
699384	Ivanpah Lake, Mineral Hill		IVANPAH	7, 9	limitedp
699385	Ivanpah Lake	BLM/PVT	IVANPAH	7	limiteda
699386	Ivanpah Lake, Desert, Nipton	BLM/PVT	IVANPAH	7, 8, 10	limiteda
699387	Ivanpah Lake	BLM/PVT	IVANPAH	7	limiteda
699388	Valley Wells, Clark Mountain	BLM/PVT	SHADOW-VALLEY	11,18	limiteda/openp
699389	Valley Wells, Pachalka Spring, Turquoise Mountain		SHADOW-VALLEY	16, 17, 18	openp
699445	Valley Wells		SHADOW-VALLEY	18	closedn
699451	Valley Wells	water source spring	SHADOW-VALLEY	18	openw
699452	Valley Wells	wilderness trailhead access	SHADOW-VALLEY	18	openr
699453	Solomon's Knob		SHADOW-VALLEY	17	openr/t
699454	Solomon's Knob, Valley Wells		SHADOW-VALLEY	17, 18	openr

					Proposed Plan Designations
699456	Solomon's Knob, Valley Wells		SHADOW-VALLEY	17, 18	closedn
699457	Valley Wells	BLM/NPS	SHADOW-VALLEY	18	limiteda
699459	Valley Wells		SHADOW-VALLEY	18	closedn
699460	Valley Wells	BLM/PVT	SHADOW-VALLEY	18	closed/limiteda
699461	Valley Wells	BLM/PVT	SHADOW-VALLEY	18	limiteda
699463	Valley Wells	BLM/PVT	SHADOW-VALLEY	18	limiteda
699472	Solomon's Knob	BLM/PVT	SHADOW-VALLEY	17	limiteda
699473	Solomon's Knob		SHADOW-VALLEY	17	openr
699474	Solomon's Knob		SHADOW-VALLEY	17	openr
699475	Solomon's Knob		SHADOW-VALLEY	17	openr
699476	Solomon's Knob, Turquoise Mountain		SHADOW-VALLEY	16, 17	openr
699477	Solomon's Knob	water source spring	SHADOW-VALLEY	17	openr/w
699478	Solomon's Knob		SHADOW-VALLEY	17	openr
699479	Solomon's Knob, Turquoise Mountain		SHADOW-VALLEY	16, 17	openr
699480	Solomon's Knob	water source spring & corral	SHADOW-VALLEY	17	openr/w
699481	Solomon's Knob	BLM/PVT	SHADOW-VALLEY	17	closeda
699482	Solomon's Knob, Turquoise Mountain		SHADOW-VALLEY	16, 17	closedz
699483	Solomon's Knob, Turquoise Mountain		SHADOW-VALLEY	16, 17	openr
699484	Solomon's Knob, Turquoise Mnt.		SHADOW-VALLEY	16, 17	openr
699486	Solomon's Knob		SHADOW-VALLEY	17	openr
699487	Solomon's Knob	water source sg guzzler	SHADOW-VALLEY	17	openr/w
699488	Solomon's Knob, Turquoise Mountain		SHADOW-VALLEY	16, 17	openr
699489	Solomon's Knob		SHADOW-VALLEY	17	openr
699490	Solomon's Knob		SHADOW-VALLEY	17	closedz
699491	Solomon's Knob	BLM/PVT	SHADOW-VALLEY	17	opena
699492	Solomon's Knob	BLM/PVT	SHADOW-VALLEY	17	opena
699493	Solomon's Knob		SHADOW-VALLEY	17	closedg
699495	Solomon's Knob		SHADOW-VALLEY	17	closedg
699496	Solomon's Knob	BLM/PVT	SHADOW-VALLEY	17	opena

					Proposed Plan Designations
699498	Solomon's Knob		SHADOW-VALLEY	17	closedn
699499	Solomon's Knob		SHADOW-VALLEY	17	closedz
699501	Solomon's Knob		SHADOW-VALLEY	17	openr
699502	Solomon's Knob		SHADOW-VALLEY	17	openr
699503	Solomon's Knob	BLM/PVT	SHADOW-VALLEY	17	opena
699505	Solomon's Knob	comment	SHADOW-VALLEY	17	openr
699507	Solomon's Knob		SHADOW-VALLEY	17	closedz
699508	Solomon's Knob		SHADOW-VALLEY	17	closedn
699509	Solomon's Knob		SHADOW-VALLEY	17	closedn
699510	Solomon's Knob		SHADOW-VALLEY	17	closedn
699511	Solomon's Knob		SHADOW-VALLEY	17	closedn
699512	Solomon's Knob		SHADOW-VALLEY	17	openr
699515	Solomon's Knob		SHADOW-VALLEY	17	openp
699516	Solomon's Knob, Halloran Spring, Turquoise Mountain		SHADOW-VALLEY	16, 17, 19	openp/limiteda
699517	Solomon's Knob		SHADOW-VALLEY	17	closedf
699518	Solomon's Knob		SHADOW-VALLEY	17	openr
699519	Solomon's Knob		SHADOW-VALLEY	17	closedn
699520	Solomon's Knob		SHADOW-VALLEY	17	closedf
699521	Solomon's Knob		SHADOW-VALLEY	17	openr
699522	Solomon's Knob		SHADOW-VALLEY	17	openr
699523	Solomon's Knob		SHADOW-VALLEY	17	openr
699531	Turquoise Mountain		SHADOW-VALLEY	16	openp
699547	Pachalka Spring	BLM/PVT	SHADOW-VALLEY	15	limiteda
699548	Pachalka Spring	BLM/PVT water source sg guzzler	SHADOW-VALLEY	15	opena/w
699552	Pachalka Spring	water source	SHADOW-VALLEY	15	limitedw
699560	Turquoise Mountain		SHADOW-VALLEY	16	openr
699561	Turquoise Mountain		SHADOW-VALLEY	16	openr
699562	Turquoise Mountain		SHADOW-VALLEY	16	closedg
699563	Turquoise Mountain, Halloran Spring	BLM/PVT	SHADOW-VALLEY	16, 19	opena
699564	Turquoise Mountain		SHADOW-VALLEY	16	openr
699565	Turquoise Mountain		SHADOW-VALLEY	16	openr
699566	Turquoise Mountain	BLM/PVT	SHADOW-VALLEY	16	opena

					Proposed Plan Designations
699567	Turquoise Mountain		SHADOW-VALLEY	16	openr
699568	Turquoise Mountain		SHADOW-VALLEY	16	closedg
699569	Turquoise Mountain		SHADOW-VALLEY	16	openr
699570	Turquoise Mountain		SHADOW-VALLEY	16	closedg
699571	Turquoise Mountain	comment	SHADOW-VALLEY	16	closed
699572	Turquoise Mountain	water source sg guzzler	SHADOW-VALLEY	16	openw
699573	Turquoise Mountain		SHADOW-VALLEY	16	openr
699574	Turquoise Mountain		SHADOW-VALLEY	16	closedf
699575	Turquoise Mountain		SHADOW-VALLEY	16	openr
699576	Turquoise Mountain	water source Hytens Well	SHADOW-VALLEY	16	openr/w
699577	Turquoise Mountain		SHADOW-VALLEY	16	openr
699578	Turquoise Mountain		SHADOW-VALLEY	16	closedg
699579	Turquoise Mountain		SHADOW-VALLEY	16	openr
699580	Turquoise Mountain, Halloran Spring		SHADOW-VALLEY	16, 19	openr
699581	Turquoise Mountain	water source sg guzzler	SHADOW-VALLEY	16	openr/w
699582	Solomon's Knob		SHADOW-VALLEY	17	openr
699585	Turquoise Mountain		SHADOW-VALLEY	16	openr
699586	Turquoise Mountain		SHADOW-VALLEY	16	openr
699587	Turquoise Mountain	BLM/PVT	SHADOW-VALLEY	16	limiteda
699588	Turquoise Mountain		SHADOW-VALLEY	16	closedf
699589	Turquoise Mountain		SHADOW-VALLEY	16	openr
699590	Turquoise Mountain		SHADOW-VALLEY	16	openr
699591	Turquoise Mountain	BLM/PVT	SHADOW-VALLEY	16	limiteda
699592	Turquoise Mountain		SHADOW-VALLEY	16	openr
699593	Turquoise Mountain	BLM/PVT	SHADOW-VALLEY	16	limiteda
699594	Turquoise Mountain	BLM/PVT	SHADOW-VALLEY	16	limiteda
699595	Turquoise Mountain	BLM/PVT	SHADOW-VALLEY	16	limiteda
699596	Turquoise Mountain		SHADOW-VALLEY	16	openr
699597	Turquoise Mountain		SHADOW-VALLEY	16	closedf
699598	Turquoise Mountain		SHADOW-VALLEY	16	openr
699599	Turquoise Mountain		SHADOW-VALLEY	16	openr
699600	Turquoise Mountain		SHADOW-VALLEY	16	openr
699601	Solomon's Knob	map error	SHADOW-VALLEY	17	openr

					Proposed Plan Designations
699603	Nipton	BLM/PVT	IVANPAH	10	limiteda
699604	Nipton	BLM/PVT	IVANPAH	10	limiteda
699605	Mineral Hill		IVANPAH	9	closedn
699608	Mineral Hill	comment	IVANPAH	9	closedf
699608	Clark Mountain	map error-duplicate #	IVANPAH	9	n/a
699609	Mineral Hill		IVANPAH	9	closedf
699611	Mineral Hill		IVANPAH	9	openr
699612	Mineral Hill		IVANPAH	9	openr
699613	Mineral Hill		IVANPAH	9	openr
699614	Mineral Hill		IVANPAH	9	openr
699615	Mineral Hill, Clark Mountain		IVANPAH	9, 11	openr
699616	Ivanpah Lake		IVANPAH	7	closedg
699617	Ivanpah Lake		IVANPAH	7	openr
699618	Ivanpah Lake		IVANPAH	7	limitedr
699619	Pachalka Spring		SHADOW-VALLEY	15	openr
699620	Pachalka Spring		SHADOW-VALLEY	15	closedg
699621	Pachalka Spring	water source map error comment range improv.	SHADOW-VALLEY	15	openw
699623	Pachalka Spring	wilderness	SHADOW-VALLEY	15	limiteda
699625	Ivanpah Lake		IVANPAH	7	limitedr
699626	Ivanpah Lake		IVANPAH	7	openr
699628	Valley Wells	BLM/NPS	SHADOW-VALLEY	18	opena
699630	Valley Wells		SHADOW-VALLEY	18	limitedw
699631	Valley Wells, Solomon's Knob		SHADOW-VALLEY	17, 18	closedg
699632	E Kingston Spring, Kingston Spring		SHADOW-VALLEY	14, 21	openr
699700	Goffs		PIUTE-FENNER	23	openp
699701	Goffs		PIUTE-FENNER	23	openr
699704	Goffs	BLM/NPS	PIUTE-FENNER	23	openr
699705	Goffs, Homer		PIUTE-FENNER	1, 23	openr
699706	Fenner Spring		PIUTE-FENNER	24	openr
699707	Fenner Spring		PIUTE-FENNER	24	openr
699708	Fenner Spring		PIUTE-FENNER	24	closeds
699709	Fenner Spring		PIUTE-FENNER	24	closedn

					Proposed Plan Designations
699710	Fenner Spring		PIUTE-FENNER	24	closedn
699711	Fenner Spring		PIUTE-FENNER	24	closedd
699712	Fenner Spring		PIUTE-FENNER	24	closedn
699713	Fenner Spring		PIUTE-FENNER	24	closedn
699714	Fenner Spring	BLM/PVT	PIUTE-FENNER	24	closeda
699715	Fenner Spring	BLM/PVT	PIUTE-FENNER	24	closeda
699911	E Kingston Spring		SHADOW-VALLEY	14	closedg
699913	E Kingston Spring		SHADOW-VALLEY	14	openr
699914	E Kingston Spring	BLM/PVT	SHADOW-VALLEY	14	opena
699914	Solomon's Knob	map error	SHADOW-VALLEY	17	closedg
699915	E Kingston Spring	BLM/PVT	SHADOW-VALLEY	14	opena
699916	E Kingston Spring		SHADOW-VALLEY	14	openr
699917	E Kingston Spring		SHADOW-VALLEY	14	openr
699918	E Kingston Spring	wilderness	SHADOW-VALLEY	14	closeda
699919	E Kingston Spring	BLM/PVT	SHADOW-VALLEY	14	opena
699920	E Kingston Spring		SHADOW-VALLEY	14	openr
699921	E Kingston Spring	BLM/PVT	SHADOW-VALLEY	14	opena
699923	E Kingston Spring		SHADOW-VALLEY	14	closedg
699924	E Kingston Spring		SHADOW-VALLEY	14	openr
699925	Valley Wells, E Kingston Spring		SHADOW-VALLEY	18, 14	closedg
699926	Valley Wells, E Kingston Spring		SHADOW-VALLEY	18, 14	closedg
699927	Solomon's Knob	water source	SHADOW-VALLEY	17	openr/w
699928	Halloran Spring		SHADOW-VALLEY	19	openr
699929	Halloran Spring		SHADOW-VALLEY	19	openr
699930	Halloran Spring		SHADOW-VALLEY	19	openr
699931	Halloran Spring		SHADOW-VALLEY	19	openr
699932	Halloran Spring		SHADOW-VALLEY	19	closedg
699937	Solomon's Knob		SHADOW-VALLEY	17	closedg
699938	Solomon's Knob		SHADOW-VALLEY	17	closedg
699939	Solomon's Knob		SHADOW-VALLEY	17	closedg
699941	Solomon's Knob		SHADOW-VALLEY	17	closedg
699944	Clark Mountain	map error	SHADOW-VALLEY	11	openr
699945	Clark Mountain	map error	SHADOW-VALLEY	11	openr
699946	Clark Mountain		SHADOW-VALLEY	11	openr

					Proposed Plan Designations
699947	Clark Mountain		SHADOW-VALLEY	11	openr
699948	Clark Mountain		SHADOW-VALLEY	11	openr
699949	Clark Mountain	BLM/NPS	SHADOW-VALLEY	11	opena
699950	Pachalka Spring	BLM/NPS	SHADOW-VALLEY	15	limiteda
700001	Turquoise Mountain, Halloran Spring, Solomon's Knob	wash unit	SHADOW-VALLEY	16, 17, 19	openr
700002	Turquoise Mountain, Solomon's Knob, Halloran Spring	wash unit	SHADOW-VALLEY	16, 17, 19	openr
700003	Pachalka Spring, Valley Wells	wash unit water source	SHADOW-VALLEY	15, 18	openr/w
700004	Bannock, W Juniper Mine, E Homer Mountain	wash unit water source	PIUTE-FENNER	2, 4, 5	openr/w
700005	Homer	wash unit	PIUTE-FENNER	1	Openr

Route Designation Definitions:

- a** = route accesses private lands, NPS or Nevada public lands, or wilderness trailhead.
- b** = sensitive bird species found in the area (Bendire's thrasher, golden eagle).
- f** = route fragment or spur.
- g** = redundant route.
- n** = Non-route or partial non-route due to not being an approved part of the inventory.

Unauthorized routes created after the CDCA Plan inventory, are generally not approved in the DWMA's if they are reclaiming, play area or shortcut routes. Exceptions include routes that provide reasonable alternatives to problem routes (e.g. eroding routes) and routes that connect to the open route network, which may be only partial non-routes.

- p** = pipeline, power line gas line, transmission line, communication site.
- r** = popular recreational route used for vehicle touring, rock hounding, hunting, historic mining exploration, camping, hiking and equestrian access, etc.
- s** = sensitive plant species can be found in proximity to the route (Rusby's desert mallow, Howe's hedgehog cactus).
- t** = high-density tortoise area.
- w** = proximity (400 meters) to water source, either natural or artificial, such as spring, small game guzzler, or range improvement.
- z** = non-existent or partially non-existent due to natural reclamation from little or no use; Use may have been precluded by private landowner or mining claimant (fencing).

Table Q.2 –Water Sources

								FY to Finish
700003	springs/small game guzzlers	Install interpretive wayside exhibit near the entrance of the wash unit that would provide information about the area, protection of sensitive resources, and a map of open and closed routes. Delineate a small parking area. Install small signs along wash unit to read: "Help Protect Sensitive Resources - Stay on Open Routes". Reclaim old jeep tracks on closed wash routes to discourage unauthorized use.	Wayside Exhibit: \$1,500 Materials: \$800 Parking: \$1,000 Labor & Per Diem: \$2,700	\$6,000	high	along wash unit	open	FY02-04
699004	small game guzzler	install metal sign:	Materials: \$25, Sign: \$25, Labor & Per Diem: \$100	\$150	low	along wash unit	open	FY08-10
700004	small game guzzler	Install interpretive wayside exhibit near the entrance of the wash unit that would provide information about the area, protection of sensitive resources, and a map of open and closed routes. Delineate a small parking area. Install small signs along wash unit to read: "Help Protect Sensitive Resources - Stay on Open Routes". Reclaim old jeep tracks on closed wash routes to discourage unauthorized use.	Wayside Exhibit: \$1,500 Materials: \$800 Parking: \$1,000 Labor & Per Diem: \$2,700	\$6,000	high	along wash unit	open	FY02-04

³ Water sources will not be signed at the route but at the site itself. It is our intention not to draw attention to small game guzzlers, springs, or range improvements, but to educate those who encounter them. This will be accomplished through education (e.g., signs and markers). Under the NEMO Plan the protection of sensitive resources will be enforced in a lesser restrictive manner. In the event these measures prove ineffective, more restrictive measures will be taken (e.g., barriers, fences, gates).

								FY to Finish
699026	range improv.	Install small metal sign	Materials: \$25 Sign: \$25, Labor: \$100	\$150	low	ends	open	FY08-10
699028	small game guzzler	Install small metal sign at site (not along the route).	Materials: \$25 Sign: \$25, Labor: \$100	\$150	medium	along wash unit	open	FY05-07
699048	small game guzzler	Install small metal sign at site (not along the route).	Materials: \$25, Sign: \$25, Labor: \$100	\$150	medium	intersects	open	FY05-07
699058 699059	range improv.	Water tank currently not being used. Install carsonites at route closure.	Carsonites: \$72, Labor: \$50	\$122	high	058 intersects 059	both closed	FY02-04
699062	range improv.	install carsonite markers at route closure.	Carsonites: \$72, Labor: \$50	\$122	high	ends	closed	FY02-04
699181	spring	Spring is located on NPS, no action	N/A	\$0	none	leads to	open	N/A
699193	spring	Spring is located on NPS, no action	N/A	\$0	none	leads to	open	N/A
699199	spring, range improvement	water source located on NPS lands	N/A	\$0	none	leads to	open	N/A
699221	two springs	Fence spring(s) if necessary to keep burros/cattle/humans out	Materials: \$800, Sign: \$50, Fence: \$1600, Labor & Per Diem: \$2700	\$5,150	high	ends	open	FY02-04
699224	spring	N/A	N/A	N/A	none	leads to	open	N/A
699230	range improv.	install carsonite markers at route closure.	Carsonites: \$72, Labor: \$50	\$122	low	along	closed	FY08-10
699233	small game guzzler	Install small metal sign at site (not along the route).	Materials: \$25 Sign: \$25, Labor: \$100	\$150	high	ends	open	FY02-04
699245	range improv.	install carsonite markers at route closure.	Carsonites: \$72, Labor: \$50	\$122	low	along	closed	FY08-10
699246	small game guzzler	Install small metal sign at site (not along the route).	Materials: \$ Sign: \$50	\$150	medium	along	open	FY05-07
699256	Burro spring	Fence spring(s) if necessary to keep burros/cattle/humans out	Materials: \$800, Sign: \$50 Fence: \$800, Carsonites: \$72, Labor & Per Diem: \$2700	\$4,422	low	along	limited	FY08-10

								FY to Finish
699373	Francis Spring	Fence spring(s) if necessary to keep burros/cattle/humans out	Materials: \$800, Sign: \$50 Fence: \$800, Carsonites: \$72, Labor & Per Diem: \$2700	\$4,422	low	along	open	FY08-10
699451	spring	Fence spring(s) if necessary to keep burros/cattle/humans out	Materials: \$800, Sign: \$50 Fence: \$800, Carsonites: \$72, Labor & Per Diem: \$2700	\$4,422	low	along	open	FY08-10
699477	spring	Fence spring(s) if necessary to keep burros/cattle/humans out	Materials: \$800, Sign: \$50 Fence: \$800, Carsonites: \$72, Labor & Per Diem: \$2700	\$4,422	low	along	open	FY08-10
699480	Bull spring/range improvement	Install carsonite markers at route closure. Fence spring if necessary to keep burros/cattle/humans out	Materials: \$800, Sign: \$50 Fence: \$800, Carsonites: \$72, Labor & Per Diem: \$2700	\$4,422	medium	along	open	FY05-07
699487	small game guzzler	Install small metal sign at site (not along the route).	Materials: \$25 Sign: \$25, Labor: \$100	\$150	high	ends	open	FY02-04
699548	small game guzzler	Install small metal sign at site (not along the route).	Materials: \$25 Sign: \$25, Labor: \$100	\$150	low	along	open	FY08-10
699552	spring	N/A	N/A	\$0	none	leads to	limited	N/A
699572	small game guzzler	Install small metal sign at site (not along the route).	Materials: \$25 Sign: \$25, Labor: \$100	\$150	low	along	open	FY08-10
699576	range improv. Hyten's well	none at this time	N/A	0	none	end	open	N/A
699581	small game guzzler	Install small metal sign at site (not along the route).	Materials: \$25 Sign: \$25, Labor: \$100	\$150	low	along	open	FY08-10
699621	range improv.	water tank is located in the Kingston Range Wilderness	none	0	none	leads to	open	N/A

								FY to Finish
699927	see 699487	the small guzzler at the end of 699487 is near 699927, Install small metal sign at site (not along the route).	Materials: \$25 Sign: \$25, Labor: \$100	\$150	low	along	open	FY08-10
no number	Halloran Spring/ small game guzzler	Halloran spring is located just north of I-15 along Halloran Springs Rd (a paved road). The small game guzzler is located further north off the road. Major work needs to be done at Halloran Springs. Install interpretative kiosk, fence spring and pipe water to a trough for burros, delineate parking area, and install small metal signs at both sites.	Kiosk: \$2500, Parking: \$1000, Materials for Piping/Trough: \$2,500, Materials & Signs: \$400, \$ Fence: \$1,600, Labor & Per Diem: \$10,000	\$18,000	high	along	open	FY02-04

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Appendix R

List of G-E-M Resource Areas

Changes to this chapter in developing the FEIS

1. Minor formatting

Appendix R

R.0 BLM 3031 - Energy and Mineral Resource Assessment

R.1 Mineral Potential Classification System¹

R.1.1 Level of Potential

- O** – The geologic environment, the inferred geologic processes, and the lack of mineral occurrences do not indicate potential for accumulation of mineral resources.
- L** – The geologic environment and the inferred geologic processes indicate **low potential** for accumulation of mineral resources
- M** – The geologic environment, the inferred geologic processes, and the reported mineral occurrences or valid geochemical/geophysical anomaly indicate **moderate potential** for accumulation of mineral resources
- H** – The geologic environment, the inferred geologic processes, the reported mineral occurrences and/or valid geochemical/geophysical anomaly, and the known mines or deposits indicate **high potential** for accumulation of mineral resources. The “known mines and deposits” do not have to be within the area that is being classified, but have to be within the same type of geologic environment.
- ND** – Mineral(s) potential **not determined** due to lack of useful data. This notation does not require a level-of-certainty qualifier.

R.1.2 Level of Certainty

- A** – The available data are insufficient and/or cannot be considered as direct or indirect evidence to support or refute the possible existence of mineral resources within the respective area.
- B** – The available data provide **indirect** evidence to support or refute the possible existence of mineral resources.
- C** – The available data provide **direct evidence** but are quantitatively minimal to support or refute the possible existence of mineral
- D** – The available data provide **abundant direct** and **indirect evidence** to support or refute the possible existence of mineral resources.

For the determination of **No Potential** use O/D. This class shall be seldom used, and when used it should be for a specific commodity **only**. For example, if the available data show that the surface and subsurface types of rock in the respective area is batholithic (igneous intrusive), one can conclude, with reasonable certainty, that the area **does not** have potential for coal.

The following page displays the list of the G-E-M Resource Areas.

¹ As used in this classification, potential refers to potential for the presence (occurrence) of a concentration of one or more energy and/or mineral resources. It does not refer to or imply potential for development and/or extraction of the mineral resource(s). It does not imply that the potential concentration is or may be economic, that is, be extracted profitably.

List R.1 – G-E-M Resource Areas

				Area	
1	Adobe Mountain	26	Fish Lake Valley	51	Palo Verde Mountains
2	Alvord Mountain	27	Granite Mountains	52*	Panamint
3	Avawatz Mountain	28	Greenwater Range	53*	Picacho
4	Bighorn Mountains	29*	Hackberry	54	Piute Mountains
5*	Big Maria Mountains	30	Haiwee Reservoir	55	Providence Mountains
6	Boron	31*	Halloran	56*	Pyramid Peak
7	Borrego Springs	32*	Homer Mountain	57	Red Mountain
8	Bristol Lake	33	Imperial Valley	58*	Resting Springs Range
9*	Bristol Mountains	34*	Inyo Mountains	59	Riverside Mountains
10	Cadiz/Danby Lake	35	Iron Mountain	60*	Rodman Mountains
11*	Cady Mountains	36	Ivanpah Valley	61	Sacramento Mountains
12*	Calico Mountains	37	Jawbone Canyon	62*	Saline Range
13*	Chuckwalla	38	Kingston Range	63*	Saline Mountains
14	Cima Dome	39*	Last Chance Range	64	Saline Mountains
15*	Clark Mountain	40	Marble Mountains	65	Santa Rosa Mountains
16	Coachella	41	Mojave Valley	66*	Searles
17	Copper Mountain	42	Morong Valley	67	Sierra Pelona
18	Dale Lake	43	New York Mountains	68	Soledad/~Osamond
19*	Darwin/Slate Range	44*	Old Dad Mountain	69	Stepladder Mountains
20*	Dumont Dunes	45	Old Woman Mountains	70	Stoddard
21	Eagle Mountain	46	Ord Mountain	71*	Talc City Hills
22	East Mesa-North	47	Orocopia Mountains	72	Turtle Mountains
23	East Mesa-South	48	Owens Peak	73	Vallecito Mountains
24	El Paso Mountains	49*	Owlshead Mountains	74*	Whipple Mountains
25*	Eureka Valley	50*	Palen/~cCoy Mountains	75	Yuha Basin

* GRAs analyzed with a formal mineral report: (7,596,160 acres)

Appendix S

Wild and Scenic River Eligibility Report for Cottonwood Creek

Appendix S

S.0 Cottonwood Creek Wild and Scenic Rivers Eligibility Report

S.1 Introduction

This report presents the results of an eligibility study on potential additions to the National Wild and Scenic Rivers System for an identified riverine system in the Northern and Eastern Mojave Desert Management Planning Area. This eligibility report evaluates Cottonwood Creek in the White Mountains under the guidelines presented in the National Wild and Scenic River Act and within BLM Manual 8351. This report concludes with a discussion of management standards and guidelines applicable to rivers designated under the auspices of the National Wild and Scenic River Act.

S.2 Background

Federal agencies, including the Bureau of Land Management (BLM) have been mandated to evaluate potential additions to the National Wild and Scenic River System (NWSRS) per Section 5(d) of the Wild and Scenic Rivers Act of 1968 (16 United States Code 1271-1287, *et seq.*). Title 36 of the Code of Federal Regulations (CFR), Subpart 297, addresses management of Wild and Scenic Rivers. Title 43 CFR, Subpart 8350, specifically addresses designation of management areas. NWSRS study guidelines have also been published in Federal Register Volume 7, Number 173 (September 7, 1982), for public lands managed by the U.S. Departments of Agriculture and Interior. Additional guidance on wild and scenic rivers (WSR) is provided in BLM Manual 8351.

The NWSRS study process includes three regulatory steps:

1. Determinations of what river(s) and/or river segment(s) are **eligible** for WSR designation.
2. Determination of eligible river(s) and/or segment(s) potential **classification** with respect to wild, scenic, recreational designation, or any combination thereof.
3. Conducting a **suitability** study of eligible river(s) and/or segment(s) for inclusion into the NWSRS, via legislative action. An environmental impact statement (EIS) is commonly prepared to document the analysis needed for this suitability determination/WSR designation.

Any river or river segment on public lands found eligible for inclusion in the NWSRS is to be managed as if this river/segment were designated, until such time as a suitability determination is made. This requires management of public lands within 0.25 mile of the subject river/segment, to conform to management standards and guidelines presented in applicable federal agency manuals for wild and scenic rivers until the suitability determination is completed.

If a river or river segment is found suitable for inclusion to the NWSRS, the U.S. Congress must then pass legislation so designating this river/segment, prior to its formal addition to the NWSRS. In addition to federal agencies, private individuals and/or groups, as well as state governments, can nominate rivers and/or segments for inclusion.

Only the first two determinations, i.e., eligibility and classification, are documented in this report and the impacts evaluated in the attached Northern and Eastern Mojave Desert Proposed Plan and Environmental Impact Statement. The remaining suitability determination would be completed in a separate document, and analyzed in an EIS format. The results of the suitability determination would amend the applicable land use plan, i.e., the California Desert Conservation Area (CDCA) Plan (BLM 1980, as amended).

To meet eligibility criteria for wild and scenic river designation, a river or segment must be free-flowing in nature and must possess one or more outstandingly remarkable cultural, fish/wildlife, geologic, historic, recreational or scenic values within its immediate proximity. Free flowing, as defined in Section 16(b) of the WSRA, reflects water flowing in a natural condition without impoundment, diversion, straightening, or other modification of the waterway. However, the existence of low dams, diversion works, and other minor structures at the time of designation, does not necessarily bar consideration for inclusion on the NWSRS. Nor are there any minimum river or segment lengths necessary for inclusion. Considerations in defining study rivers and/or study river segments should include land ownership patterns, physical changes in the river/segments and their environs, as well as the type and amount of human modification of lands bordering identified rivers/segments.

The term “outstandingly remarkable” is not clearly defined in the NWSRS, necessitating professional judgement by submitting parties. In general, the term is defined as a resource, which is considered more than simply ordinary, in the context of the local region. Examples include areas supporting an “A” Scenic Quality Rating (BLM Manual 8400); habitats for threatened and/or endangered plants/animals; exemplary physiographical, ecological, geological or recreational type locations; and areas where little human modification is evident or where terrain is rugged and physically challenging to traverse.

S.2.1 Description of River Under Consideration

Cottonwood Creek is the longest perennial stream on the East Side of the White Mountains. The headwaters originate at over 11,000 feet in the Inyo National Forest and flow for 17.4 miles before entering the public lands. This initial segment, from the headwaters to the forest boundary, was recommended as eligible for scenic designation by the U.S.F.S. in 1993. The 4.7 miles on public land evaluated in this report runs from the forest boundary to the mouth of Cottonwood Canyon.

The creek segment evaluated in this report is within Inyo County at the far northern edge of the California Desert Conservation Area. The nearest rural communities are Big Pine approximately 25 miles to the southwest and Bishop, California, 30 miles to the west. This segment is completely on lands managed by the BLM, Ridgecrest Field Office.

Modification has occurred at the far eastern boundary of this segment, where Cottonwood Creek has been diverted for agricultural uses.

S.2.2 Description of Segment(s) Under Consideration

Considerations for National Wild and Scenic Rivers System (NWSRS) eligibility are based on resource values, land ownership patterns, shoreline development, proximity of roads and previous river modifications.

As a consequence of the analysis documented herein, an eligibility determination for a 4.7-mile long segment of the Cottonwood Creek occurring in the state of California has been made. The required suitability study on these segments will be deferred until after the Record of Decision for the Northern and Eastern Mojave Desert Plan amendment to the CDCA Plan.

S.2.3 Recommended NWSRS Segment Classification and Land Ownership

Once determined eligible, river segments are tentatively classified for study as either wild, scenic, or recreational, based on the degree of access and amount of development along the river area. If Congress designates a river or segment, the enabling legislation generally specifies the classification.

Accessibility, primitive nature, number and type of land developments, structures, water resource developments, and water quality were all considered in assigning classifications. The primary criteria for the three classifications are outlined below [from *A Compendium of Questions & Answers Relating to Wild & Scenic Rivers* (Technical Report of the Interagency Wild and Scenic Rivers Coordinating Council 1999)]:

Wild River Areas: Those rivers, or sections of rivers, that are free from impoundments, generally inaccessible except by trail (no roads), with watersheds or shorelines essentially primitive, and having unpolluted waters.

Scenic River Areas: Those rivers, or sections of rivers, that are free from impoundments, having shorelines or watersheds largely primitive and undeveloped, but accessible in places by roads (i.e., roads may cross but generally not parallel [in close proximity to] the river. These rivers or segments of rivers are usually more developed than wild and less developed than recreational. This classification may or may not include scenery as a Outstandingly Remarkable Value (ORV).

Recreational River Areas: Those rivers or sections of rivers that are readily accessible by road or railroad, may have had some development of the shoreline, and may have had some impoundment or diversion in the past. This classification, does not, however, imply that recreation is an Outstandingly Remarkable Value.

With these criteria in mind, as well as Outstandingly Remarkable Value data related to differing segments of Cottonwood Creek, the following classifications have been recommended for that portion of the river determined eligible for inclusion to the NWSRS:

Table S.1 – Portion of the River Determined Eligible for Inclusion to the NWSRS

			Private Land Miles
USFS Boundary to Canyon Entrance	Recreational	4.7	0.00

Cottonwood Creek was considered eligible for inclusion in the NWSRS because of values identified by the BLM in the completed CDCA Plan and during development of the ongoing Northern and Eastern Mojave Desert Plan. Outstandingly Remarkable Values for this portion of the Cottonwood Creek include the following:

Animals and Plants

Cottonwood Creek supports Willow/ Cottonwood Riparian Woodland considered an Unusual Plant Assemblage in the California Desert Conservation Area Plan. Wildlife supported by this plant community include a number of special status and/or sensitive bird species such as yellow warbler, yellow-breasted chat, prairie falcon, and sharp-shinned and Cooper's hawk. The basin is potentially suitable habitat for the southwestern willow flycatcher, a Federally endangered species. This segment of Cottonwood Creek supports over 70 species of birds.

The lower segment of Cottonwood Creek is also an important habitat for the spotted bat, which is a federal and California state special concern species.

Paiute cutthroat trout, a federally threatened species, inhabit the north fork of Cottonwood Creek in the Inyo National Forest. The recovery plan for the Paiute cutthroat trout calls for the expansion of the population throughout the Cottonwood basin and into this segment. At present, the segment is habitat for brown trout, a popular game species.

Recreational

The presence of a perennial stream of this size in such an arid region offers visitors a unique and outstanding semi-primitive water-based recreation opportunity. Activities include trout fishing, hiking, bird watching, primitive camping, four-wheel drive exploration, upland game bird, mule deer hunting, photography, mountain biking, and equestrian uses.

Scenic

The Cottonwood Creek segment identified as eligible on public lands has been inventoried as having a Class "A" (Excellent) scenic quality rating, per BLM Visual Resource Management guidelines. The lush riparian plant community along the creek bottom contrasts dramatically with the surrounding stark and primitive White Mountain Wilderness Study Area located to the north and south of the drainage. Designation of these lower 4.7 miles, in addition to the upper segments on the Inyo National Forest, would provide protection for nearly the entire reach of the Cottonwood Creek drainage, a span of over 22 miles. With designation, these two segments of Cottonwood Creek would form the only Wild & Scenic River in the Great Basin Geographic Province protected entirely from the headwaters to its terminus.

S.2.4 Interim Protection

The WSR Act and federal guidelines require federal agencies, upon determination of WSR eligibility, to provide interim protection and management for a river's free-flowing character and any identified outstandingly remarkable values, subject to valid existing rights, until such time as a suitability study is completed. Upon study completion, the federal agency (BLM in this instance) then makes a recommendation to Congress, and Congress then acts on that recommendation.

S.3 Management Standards and Guidelines for National Wild and Scenic Rivers

The Wild and Scenic Rivers Act (Public Law 90-542, as amended) established a method of providing federal protection for certain of our remaining free-flowing rivers, and preserving these locales for the use and enjoyment of present and future generations. Such designated rivers benefit from the protective management, which the act provides. Section 10(a) of the WSR Act states:

“Each component of the NWSRS shall be administered in such a manner as to protect and enhance the values which caused it to be included in said system without, insofar as is consistent therewith, limiting other uses that do not substantially interfere with public use and enjoyment of these values. In such administration, primary emphasis shall be given to protecting its esthetic, scenic, historic, archeologic, and scientific features. Management plans for any such component may establish varying degrees of intensity for its protection and development, based on the special attributes of the area.”

This section is generally interpreted by the Secretary of the Interior as a stated non-degradation and enhancement policy for all designated river areas, regardless of classification.

The following National Standards and Guidelines are summarized from BLM Manual 8351 [Wild and Scenic Rivers-Policy and Program Direction for Identification, Evaluation and Management (1992)]. These standards/guidelines are intended to apply to formally designated rivers through incorporation into, or amendment of, resource or land use management plans. Incorporation or amendment efforts are typically completed within three years of formal WSR designation. However, these guidelines also apply, on an interim basis, as described above. For the sake of clarity, guidelines are presented for each separate river classification (wild, scenic and recreational).

S.3.1 Wild River Areas

Wild river areas are defined by the WSR Act to include “those rivers or sections of rivers that are free of impoundments and generally inaccessible except by trail, with watersheds and shorelines essentially primitive and waters unpolluted. These represent vestiges of primitive America.”

Wild river areas are to be managed with a primary objective of providing emphasis to protection of identified Outstandingly Remarkable Values while providing consistent, river-related, outdoor recreation opportunities in a primitive setting.

Wild river areas are where National Management Standards/Guidelines include allowable practices such as construction of minor structures related to wildlife habitat enhancement, protection from fire, and rehabilitation or stabilization of damaged resources, provided the area will remain natural-looking and the practices or structures will harmonize with the environment. Developments such as trails, bridges, occasional fencing, natural-appearing water diversions, ditches and water management devices, may be permitted if they are unobtrusive and do not have a significant, adverse impact on the natural character of the river area. The following Wild River Program Management Standards apply:

Forestry Practices

Cutting of trees not permitted except when needed in association with a primitive recreation experience (such as clearing trails, for visitor safety purposes, or for fire control). Timber outside the boundary, but within visual corridors, should where feasible, be managed and harvested in a manner designed to provide special emphasis on visual quality.

Water Quality

Conditions will be maintained or improved to meet federal criteria or federally approved state standards. River management plans shall prescribe a process for monitoring water quality on a scheduled basis.

Hydroelectric Power and Water Resource Development

No such development would be permitted in the channel or river corridor. All water supply dams and major diversions are prohibited. The natural appearance and essentially primitive character of the river area must be maintained. Federal agency groundwater development for range, wildlife, recreation or administrative facilities may be permitted if there are no adverse effects on ORVs.

Mining

New mining claims and mineral leases are prohibited within 0.25 mile of the river. Valid existing claims would not be abrogated and, subject to existing regulations, e.g., 43 CFR 3809, and any future regulations the Secretary of the Interior may prescribe to protect the rivers included in the NWSRS, existing mining activity would be allowed to continue. All mineral activity on federally administered land must be conducted in a manner that minimizes surface disturbance, water sedimentation, pollution and visual impairment. Reasonable mining claim and mineral lease access will be permitted. Mining claims beyond 0.25 mile of the river, but within the wild river boundary, and perfected after the effective date of designation, can be patented only as to the mineral estate and not the surface estate.

Road and Trail Construction

No new roads or other provisions for overland motorized travel would be permitted within a narrow incised river valley or, if the river valley is broad, within 0.25 mile of the river bank. A few inconspicuous roads leading to the boundary of the river area and unobtrusive trail bridges may be permitted.

Agricultural Practices and Livestock Grazing

Agricultural use is restricted to a limited amount of domestic livestock grazing and hay production to the extent currently being practiced. Row crops are prohibited.

Recreation Facilities

Major public use areas, such as campgrounds, interpretive centers, or administrative headquarters are located outside of wild river areas. Simple comfort and convenience facilities, such as toilets, tables, fireplaces, shelters and refuse containers may be provided as necessary within the river area. These should harmonize with the surroundings. Unobtrusive hiking and equestrian trail bridges could be allowed on tributaries, but would not normally cross the designated river.

Public Use and Access

Recreational use including, but not limited to, hiking, fishing, hunting and boating is encouraged in wild river areas to the extent consistent with the protection of the river environment. Public use and access may be regulated and distributed where necessary to protect and enhance wild river values.

Rights-of-Way

New transmission lines, natural gas lines, water lines, etc., are discouraged unless specifically prohibited outright by other plans, orders or laws. Where no reasonable alternative exists, additional or new facilities should be restricted to existing rights-of-way. Where new rights-of-way are unavoidable, locations and construction techniques will be selected to minimize adverse effects on wild river area-related values and fully evaluated during the site selection process.

Motorized Travel

Although this use can be permitted, it is generally not compatible with this river classification. Normally, motorized use will be prohibited in a wild river area. Prescriptions for management of motorized use may allow for search and rescue/emergency situations.

S.3.2 Scenic River Areas

Scenic rivers are defined by the WSR Act to include “those rivers or sections of rivers that are free of impoundments, with shorelines or watersheds still largely primitive and shorelines largely undeveloped, but accessible in places by roads.”

Scenic rivers are to be managed with a primary objective of maintaining and providing outdoor recreation opportunities in a near-natural setting. The basic distinctions between “wild” and “scenic” classifications, involve varying degrees of development, types of land use, and road accessibility. In general, a wide range of agricultural, water management, silvicultural and other practices could be compatible with scenic classification values, providing such practices are carried out in a manner not resulting in a substantial adverse effect on the river and its immediate environment.

Scenic rivers are where National Management Standards/Guidelines include the same considerations set forth for wild rivers, except that motorized vehicle use may in some cases be appropriate and that development of larger scale public-use facilities within the river area, such as moderate-sized campgrounds, interpretive centers, or administrative headquarters would be compatible, if such facilities were screened from the river. The following Scenic River Program Management Standards apply:

Forestry Practices

Silvicultural practices, including timber harvesting could be allowed, provided that such practices are carried out in such a way that there is no substantial adverse effect on the river and its immediate environment. The river should be maintained in its near-natural condition.

Timber outside the boundary, but within the visual screen area, should be managed and harvested in a manner designed to provide special emphasis on visual quality. Preferably, reestablishment of tree cover would be through natural revegetation. Cutting of dead and down materials for fuel wood will be limited. Where necessary, restrictions on the use of wood for fuel may be prescribed.

Water Quality

Conditions will be maintained or improved to meet federal criteria or federally approved state standards. River management plans shall prescribe a process for monitoring water quality on a scheduled basis.

Hydroelectric Power and Water Resource Development

No such development would be permitted in the channel or river corridor. Flood control dams and levees would be prohibited. All water supply dams and major diversions are prohibited. Maintenance of existing facilities and construction of some new structures would be permitted, provided that the area remains natural in appearance and the practices or structures harmonize with the surrounding environment.

Mining

Subject to existing regulations, e.g. 43 CFR 3809, and any future regulations the Secretary of the Interior may prescribe to protect the rivers included in the NWSRS, new mining claims and mineral leases can be allowed. All mineral activity on federally administered land must be conducted in a manner that minimizes surface disturbance, water sedimentation, pollution and visual impairment. Reasonable mining claim and mineral lease access will be permitted. Mining claims within the wild river boundary, and perfected after the effective date of designation, can be patented only as to the mineral estate and not the surface estate.

Road and Trail Construction

Roads may occasionally bridge the river and short stretches of conspicuous or lengthy stretches of inconspicuous and well-screened roads would be allowed. Maintenance of existing roads and any new roads will be based on the type of use for which the roads are constructed and the type of use that will occur in the river area.

Agricultural Practices and Livestock Grazing

In comparison to wild river areas, a wider range of agricultural and livestock grazing uses are permitted, to the extent currently being practiced. Row crops are not considered as much of an intrusion of the “largely primitive” nature of scenic corridors, as long as there is not a substantial adverse effect on the natural-like appearance of the river area.

Recreation Facilities

Larger-scale public use areas, such as moderate-sized campgrounds, interpretive centers, or administrative headquarters, are allowed if such facilities are screened from the river.

Public Use and Access

Recreational use including, but not limited to, hiking, fishing, hunting and boating is encouraged in scenic river areas to the extent consistent with the protection of the river environment. Public use and access may be regulated and distributed where necessary to protect and enhance scenic river values.

Rights-of-Way

New transmission lines, natural gas lines, water lines, etc., are discouraged unless specifically prohibited outright by other plans, orders or laws. Where no reasonable alternative exists, additional or new facilities should be restricted to existing rights-of-way. Where new rights-of-way are unavoidable, locations and construction techniques will be selected to minimize adverse effects on scenic river area-related values and fully evaluated during the site selection process.

Motorized Travel

This use, on land or water, could be permitted, prohibited or restricted to protect river values. Prescriptions for management of motorized use may allow for search and rescue/emergency situations.

S.3.3 Recreational River Areas

Recreational river areas are defined by the WSR Act to include “those rivers or sections of rivers that are readily accessible by road or railroad that may have some development along their shorelines, that may have undergone some development along their shorelines, and that may have undergone some impoundment or diversion in the past.”

Recreational river areas are to be managed with an objective of protecting and enhancing existing recreational values. The primary objective is to provide opportunities for the public to participate in recreation activities dependent on, or enhanced by, the largely free-flowing nature of the river.

Recreational river areas are where National Management Standards/Guidelines include allowable practices such as construction of recreation facilities in proximity to the river, although recreational river classification does not require extensive recreational developments. Such facilities are still to be kept to a minimum, with visitor services provided outside the river area. Future construction of impoundments, diversions, straightening, riprapping and other modification of the water way or adjacent lands would not be permitted, except where such developments would not have a direct and adverse effect on the river and its immediate environment. The following Recreational River Program Management Standards apply:

Forestry Practices

Silvicultural practices, including timber harvesting could be allowed under standard restrictions to avoid adverse effects on the river environment and its associated values.

Water Quality

Conditions will be maintained or improved to meet federal criteria or federally approved state standards. River management plans shall prescribe a process for monitoring water quality on a scheduled basis.

Hydroelectric Power and Water Resource Development

No such development would be permitted in the channel or river corridor. Existing low dams, diversion works, riprap and other minor structures may be maintained, provided the waterway remains generally natural in appearance. New structures may be allowed, provided that the area remains natural in appearance and the practices or structures harmonize with the surrounding environment.

Mining

Subject to existing regulations, e.g. 43 CFR 3809, and any future regulations the Secretary of the Interior may prescribe to protect the rivers included in the NWSRS, new mining claims and mineral leases can be allowed. All mineral activity on federally administered land must be conducted in a manner that minimizes surface disturbance, water sedimentation, pollution and visual impairment. Reasonable mining claim and mineral lease access will be permitted. Mining claims within the wild river area boundary perfected after the effective date of designation can be patented only as to the mineral estate and not the surface estate.

Road and Trail Construction

Existing parallel roads can be maintained on one or both riverbanks. There can be several bridge crossings and numerous river access points.

Agricultural Practices and Livestock Grazing

In comparison to scenic river areas, lands may be managed for a full range of agricultural and livestock grazing uses, consistent with current practices.

Recreation Facilities

Interpretive centers, administrative headquarters, campgrounds and picnic areas may be established in proximity to the river. However, recreational classification does not require extensive recreation development.

Public Use and Access

Recreational use including, but not limited to, hiking, fishing, hunting and boating is encouraged in recreational river areas to the extent consistent with the protection of the river environment. Public use and access may be regulated and distributed where necessary to protect and enhance recreational river values.

Rights-of-Way

New transmission lines, natural gas lines, water lines, etc., are discouraged unless specifically prohibited outright by other plans, orders or laws. Where no reasonable alternative exists, additional or new facilities should be restricted to existing rights-of-way. Where new rights-of-way are unavoidable, locations and construction techniques will be selected to minimize adverse effects on recreational river area-related values and fully evaluated during the site selection process.

Motorized Travel

This use, on land, will generally be permitted, on existing roads. Controls will usually be similar to that of surrounding lands. Motorized travel on water will be in accordance with existing regulations or restrictions.

S.3.4 Management Objectives Common to All Wild, Scenic and Recreational Rivers

Wilderness and Wilderness Study Areas

Management of river areas that overlap designated wilderness areas or wilderness study areas will meet whichever standard is highest. If an area were released from wilderness study area status and the associated Interim Management Policy, the applicable river classification standards and guidelines would then apply.

Fire Protection and Suppression

Management and suppression of fires within a designated river area will be carried out in a manner compatible with contiguous Federal lands. On wildfires, suppression methods will be utilized that minimizes the long-term impacts on the river and river area. Pre-suppression and prevention activities will be conducted in a manner that reflects management objectives for the specific river segment. Prescribed fire may be utilized to maintain or restore ecological condition or meet objectives of the river plan.

Insects, Diseases and Noxious Weeds

The control of forest and rangeland pests, diseases and noxious weed infestations will be carried out in a manner compatible with the intent of the WSR Act and management objectives of contiguous federal lands.

Cultural Resources

Historic and prehistoric resource sites will be identified, evaluated and protected in a manner compatible with the objectives of the river and in accordance with applicable regulations and policies. Where appropriate, historic or prehistoric sites will be stabilized, enhanced and interpreted.

Fish and Wildlife Habitat Improvement

The construction and maintenance of minor structures for the protection, conservation, rehabilitation and enhancement of fish and wildlife habitat are acceptable, provided they do not affect the free-flowing characteristics of the river, are compatible with the classifications, that the area remains natural in appearance and the practices or structures harmonize with the surrounding environment.

Appendix T

Wild and Scenic River Eligibility Report for Surprise Canyon Creek

Appendix T

T.0 Wild and Scenic Rivers Eligibility Report for Surprise Canyon Creek

T.1 Introduction

This report presents the results of an eligibility study on potential additions to the National Wild and Scenic Rivers System for an identified riverine system in the Northern and Eastern Mojave Desert Management planning area. This eligibility report evaluates Surprise Canyon Creek in the Panamint Mountains under the guidelines presented in the National Wild and Scenic River Act and within BLM Manual 8351. This report concludes with a discussion of management standards and guidelines applicable to rivers designated under the auspices of the National Wild and Scenic River Act.

T.2 Background

The Bureau of Land Management (BLM) has been mandated to evaluate potential additions to the National Wild and Scenic River System (NWSRS) per Section 5(d) of the Wild and Scenic Rivers Act of 1968 (16 United States Code 1271-1287, *et seq.*). Title 36 of the Code of Federal Regulations (CFR), Subpart 297, addresses management of Wild and Scenic Rivers. Title 43 CFR, Subpart 8350, specifically addresses designation of management areas. NWSRS study guidelines have also been published in Federal Register Volume 7, Number 173 (September 7, 1982), for public lands managed by the U.S. Departments of Agriculture and Interior. Additional guidance on wild and scenic rivers (WSR) is provided in BLM Manual 8351.

The NWSRS study process includes three regulatory steps:

1. Determinations of what river(s) and/or river segment(s) are **eligible** for WSR designation.
2. Determination of eligible river(s) and/or segment(s) potential **classification** with respect to wild, scenic, recreational designation, or any combination thereof.
3. Conducting a **suitability** study of eligible river(s) and/or segment(s) for inclusion into the NWSRS, via legislative action. An environmental impact statement (EIS) is commonly prepared to document the analysis needed for this suitability determination/WSR designation.

Any river or river segment on public lands found eligible for inclusion in the NWSRS is to be managed as if this river/segment were designated, until such time as a suitability determination is made. This requires management of public lands within 0.25 mile of the subject river/segment, to conform to management standards and guidelines presented in applicable federal agency manuals for wild and scenic rivers until the suitability determination is completed.

If a river or river segment is found suitable for inclusion to the NWSRS, the U.S. Congress must then pass legislation so designating this river/segment, prior to its formal addition to the NWSRS. In addition to federal agencies, private individuals and/or groups, as well as state governments, can nominate rivers and/or segments for inclusion.

Only the first two determinations, i.e., eligibility and classification, are documented in this report and the impacts evaluated in the attached Northern and Eastern Mojave Desert Proposed Plan and Environmental Impact Statement. The remaining suitability determination would be completed in a separate document, and analyzed in an EIS format. The results of the suitability determination would amend the applicable land use plan, i.e., the California Desert Conservation Area (CDCA) Plan (BLM 1980, as amended).

To meet eligibility criteria for wild and scenic river designation, a river or segment must be free-flowing in nature and must possess one or more outstandingly remarkable cultural, fish/wildlife, geologic, historic, recreational or scenic values within its immediate proximity. Free flowing, as defined in Section 16(b) of the WSRA, reflects water flowing in a natural condition without impoundment, diversion, straightening, or other modification of the waterway. However, the existence of low dams, diversion works, and other minor structures at the time of designation, does not necessarily bar consideration for inclusion on the NWSRS. Nor are there any minimum river or segment lengths necessary for inclusion. Considerations in defining study rivers and/or study river segments should include land ownership patterns, physical changes in the river/segments and their environs, as well as the type and amount of human modification of lands bordering identified rivers/segments.

The term “Outstandingly Remarkable” is not clearly defined in the NWSRS, necessitating professional judgement by submitting parties. In general, the term is defined as a resource, which is considered more than simply ordinary, in the context of the local region. Examples include areas supporting an “A” Scenic Quality Rating (BLM Manual 8400); habitats for threatened and/or endangered plants/animals; exemplary physiographical, ecological, geological or recreational type locations; and areas where little human modification is evident or where terrain is rugged and physically challenging to traverse.

T.2.1 Description of River Under Consideration

Surprise Canyon Creek is the longest perennial stream in the Panamint Mountains, a region known for its extreme aridity. The upper basin for Surprise Canyon Creek originates within Death Valley National Park where the watercourse is an intermittent stream, appearing and disappearing beneath the canyon surface. At Brewery Spring, just within the National Park, the flow reappears and flows essentially as a perennial stream to the mouth of the canyon below Chris Wicht Camp. The stream flow is often 100-150 cubic feet per minute (cfm) in the canyon narrows, which is a substantial flow for a watercourse in the Mojave Desert. The 5.0 miles of stream evaluated in this report, runs from the National Park boundary west to the mouth of Surprise Canyon.

The stream is within Inyo County and the California Desert Conservation Area and is entirely on lands managed by the BLM, Ridgecrest Field Office. The nearest rural community is Trona, approximately 25 miles to the southwest.

T.2.2 Description of Segment(s) Under Consideration

Considerations for National Wild and Scenic Rivers System (NWSRS) eligibility are based on resource values, land ownership patterns, shoreline development, proximity of roads and previous river modifications.

As a consequence of the analysis documented herein, an eligibility determination for two segments of Surprise Canyon Creek have been made. These segments cover a total distance of 5.0 miles and are entirely within the state of California. The required suitability study on these segments will be deferred until after the Record of Decision for the Northern and Eastern Mojave Desert Plan amendment to the CDCA Plan.

T.2.3 Recommended NWSRS Segment Classification and Land Ownership

Once determined eligible, river segments are tentatively classified for study as wild, scenic, or recreational, based on the degree of access and amount of development along the river area. If Congress designates a river or segment, the enabling legislation generally specifies the classification.

Accessibility, primitive nature, number and type of land developments, structures, water resource developments, and water quality were all considered in assigning classifications. The primary criteria for the three classifications are outlined below [from *A Compendium of Questions & Answers Relating to Wild & Scenic Rivers* (Technical Report of the Interagency Wild and Scenic Rivers Coordinating Council 1999)]:

Wild River Areas: Those rivers, or sections of rivers, that is free from impoundments, generally inaccessible except by trail (no roads), with watersheds or shorelines essentially primitive, and having unpolluted waters.

Scenic River Areas: Those rivers, or sections of rivers, that are free from impoundments, having shorelines or watersheds largely primitive and undeveloped, but accessible in places by roads (i.e., roads may cross but generally not parallel [in close proximity to] the river. These rivers or segments of rivers are usually more developed than wild and less developed than recreational. This classification may or may not include scenery as an Outstandingly Remarkable Value (ORV).

Recreational River Areas: Those rivers or sections of rivers that are readily accessible by road or railroad, may have had some development of the shoreline, and may have had some impoundment or diversion in the past. This classification, does not, however, imply that recreation is an Outstandingly Remarkable Value.

With these criteria in mind, as well as Outstandingly Remarkable Value data related to differing segments of Surprise Canyon, the following classifications have been recommended for that portion of the river determined eligible for inclusion to the NWSRS:

Table T.1 – Portion of the River Determined Eligible for Inclusion to the NWSRS

			Private Land Miles
Death Valley National Park Boundary to Chris Wicht Camp	Scenic	4.0	0.00
Chris Wicht Camp to Surprise Canyon ACEC West Boundary	Recreational	1.0	0.00

Surprise Canyon Creek was considered eligible for inclusion in the NWSRS because of values identified by the BLM in the completed CDCA Plan and during development of the ongoing Northern and Eastern Mojave Desert Plan. Outstanding remarkable values for this portion of the stream include the following:

Animals and Plants

Surprise Canyon was designated as an Area of Critical Environmental Concern in the California Desert Conservation Area Plan in recognition of the area's significant natural and cultural resources. The area is also within the larger West Panamint Mountains Wildlife Habitat Management Area identified in the CDCA Plan.

Surprise Canyon supports extensive Cottonwood/Willow Streamside Woodland, considered an Unusual Plant Assemblage in the CDCA Plan. This multistoried woodland covers approx. 2.0 miles of the total stream reach and is the most extensive riparian system in the Panamint Mountains. The remaining three miles of the stream reach is composed of other riparian/wetland dependant vegetation.

The Canyon also supports a Basic Saxicole Plant Assemblage, another Unusual Plant Assemblage identified in the CDCA Plan. The component species of this UPA are calciphytes, plants found almost exclusively on calcareous substrates, usually dolomites or limestones. Several federal sensitive species have been located in Surprise Canyon in these limestone outcrops including Panamint dudleya (*Dudleya saxosa ssp. saxosa*) and Death Valley round-leaved phacelia (*Phacelia mustelina*).

The talus slopes in the canyon also support another federal sensitive species endemic to the Panamint Mountains, the Panamint daisy (*Enceliopsis covillei*).

The diversity of vegetative communities in Surprise Canyon contributes to providing niches for a diverse wildlife community, “perhaps one of the most diverse and significant in the California Desert Conservation Area” (Surprise Canyon ACEC Plan pg. 20). Important species of wildlife include:

Reptiles

The Panamint alligator lizard (*Gerrhonatus panamintinus*) inhabits the rocky canyon bottom near permanent water overgrown with riparian vegetation. This lizard is a California BLM sensitive species and a California Department of Fish & Game special concern and protected species. The Panamint alligator lizard population in Surprise Canyon is a relict population, having been isolated here since the Pleistocene epoch.

Birds

Bird species inventories conducted in 1978 and 2000 have reported a rich assemblage of species for this five-mile long canyon bottom. Over 70 species have been reported in the Surprise Canyon riparian area including several California BLM sensitive species - yellow warbler and prairie falcon. The canyon is also potentially suitable habitat for the southwestern willow flycatcher, a federal endangered species.

Mammals

The desert bighorn sheep, a California BLM sensitive species and California Department of Fish & Game fully protected species, inhabits the region surrounding the canyon. The water sources in Surprise Canyon are an essential resource for the desert bighorn sheep population in the Panamints.

The canyon also provides excellent foraging and roosting habitat for a variety of bat species, which are California BLM, and California D.F.G. sensitive species. These include the spotted bat, western mastiff bat, Townsend’s big-eared bat, pallid bat, fringed myotis, Western small-footed myotis and long-eared myotis. A rarely seen mammal, the ringtail cat - a CDFG protected species, occurs in the rocky portions of the canyon.

Recreational

Surprise Canyon provides an exceptional semi-primitive recreation opportunity. The canyon bottom forms a corridor through the rugged 29,180-acre Surprise Canyon Wilderness. The eligible segments of Surprise Canyon offer outstanding hiking, bird watching, botanizing, photography and backpacking opportunities. The hike from Chris Wicht Camp along this perennial stream and through the narrow slot canyon to the abandoned ghost town of Panamint City is one of the most outstanding treks in the California Desert.

Scenic

Using the Bureau's Visual Resource Management System, Surprise Canyon received the highest Scenic Quality Rating available (Class A). This was a reflection of the continued stream flow and riparian vegetation and the narrow slot canyon and waterfalls. At the far eastern edge of this eligible segment, along the north wall of the canyon, is a remarkable seep formation known as Limekiln Spring. This spring has a shaded grotto that is covered with thick growths of maidenhair fern and moss and is fed by a steady dripping curtain of water - a spectacular verdant feature set against the rough and parched canyon wall.

Interim Protection

The WSR Act and federal guidelines require federal agencies, upon determination of WSR eligibility, to provide interim protection and management for a river's free-flowing character and any identified outstandingly remarkable values, subject to valid existing rights, until such time as a suitability study is completed. Upon study completion, the federal agency (BLM in this instance) then makes a recommendation to Congress, and Congress then acts on that recommendation.

T.3 Management Standards and Guidelines for National Wild and Scenic Rivers

The Wild and Scenic Rivers Act (Public Law 90-542, as amended) established a method of providing federal protection for certain of our remaining free-flowing rivers, and preserving these locales for the use and enjoyment of present and future generations. Such designated rivers benefit from the protective management, which the act provides. Section 10(a) of the WSR Act states:

Each component of the NWSRS shall be administered in such a manner as to protect and enhance the values which caused it to be included in said system without, insofar as is consistent therewith, limiting other uses that do not substantially interfere with public use and enjoyment of these values. In such administration, primary emphasis shall be given to protecting its esthetic, scenic, historic, archeologic, and scientific features. Management plans for any such component may establish varying degrees of intensity for its protection and development, based on the special attributes of the area.

This section is generally interpreted by the Secretary of the Interior as a stated non-degradation and enhancement policy for all designated river areas, regardless of classification.

The following National Standards and Guidelines are summarized from BLM Manual 8351 [Wild and Scenic Rivers-Policy and Program Direction for Identification, Evaluation and Management (1992)]. These standards/guidelines are intended to apply to formally designated rivers through incorporation into, or amendment of, resource or land use management plans. Incorporation or amendment efforts are typically completed within three years of formal WSR designation. However, these guidelines also apply, on an interim basis, as described above. For the sake of clarity, guidelines are presented for each separate river classification (wild, scenic and recreational).

T.3.1 Wild River Areas

Wild river areas are defined by the WSR Act to include "those rivers or sections of rivers that are free of impoundments and generally inaccessible except by trail, with watersheds and shorelines essentially primitive and waters unpolluted. These represent vestiges of primitive America."

Wild river areas are to be managed with a primary objective of providing emphasis to protection of identified Outstandingly Remarkable Values while providing consistent, river-related, outdoor recreation opportunities in a primitive setting.

Wild river areas are where National Management Standards/Guidelines include allowable practices such as construction of minor structures related to wildlife habitat enhancement, protection from fire, and rehabilitation or stabilization of damaged resources, provided the area will remain natural looking and the practices or structures will harmonize with the environment. Developments such as trails, bridges, occasional fencing, natural-appearing water diversions, ditches and water management devices, may be permitted if they are unobtrusive and do not have a significant, adverse impact on the natural character of the river area. The following Wild River Program Management Standards apply:

Forestry Practices

Cutting of trees not permitted except when needed in association with a primitive recreation experience (such as clearing trails, for visitor safety purposes, or for fire control). Timber outside the boundary, but within visual corridors, should where feasible, be managed and harvested in a manner designed to provide special emphasis on visual quality.

Water Quality

Conditions will be maintained or improved to meet federal criteria or federally approved state standards. River management plans shall prescribe a process for monitoring water quality on a scheduled basis.

Hydroelectric Power and Water Resource Development

No such development would be permitted in the channel or river corridor. All water supply dams and major diversions are prohibited. The natural appearance and essentially primitive character of the river area must be maintained. Federal agency groundwater development for range, wildlife, recreation or administrative facilities may be permitted if there are no adverse effects on ORVs.

Mining

New mining claims and mineral leases are prohibited within 0.25 mile of the river. Valid existing claims would not be abrogated and, subject to existing regulations, e.g., 43 CFR 3809, and any future regulations the Secretary of the Interior may prescribe to protect the rivers included in the NWSRS, existing mining activity would be allowed to continue. All mineral activity on federally administered land must be conducted in a manner that minimizes surface disturbance, water sedimentation, pollution and visual impairment. Reasonable mining claim and mineral lease access will be permitted. Mining claims beyond 0.25 mile of the river, but within the wild river boundary, and perfected after the effective date of designation, can be patented only as to the mineral estate and not the surface estate.

Road and Trail Construction

No new roads or other provisions for overland motorized travel would be permitted within a narrow incised river valley or, if the river valley is broad, within 0.25 mile of the riverbank. A few inconspicuous roads leading to the boundary of the river area and unobtrusive trail bridges may be permitted.

Agricultural Practices and Livestock Grazing

Agricultural use is restricted to a limited amount of domestic livestock grazing and hay production to the extent currently being practiced. Row crops are prohibited.

Recreation Facilities

Major public use areas, such as campgrounds, interpretive centers, or administrative headquarters are located outside of wild river areas. Simple comfort and convenience facilities, such as toilets, tables, fireplaces, shelters and refuse containers may be provided as necessary within the river area. These should harmonize with the surroundings. Unobtrusive hiking and equestrian trail bridges could be allowed on tributaries, but would not normally cross the designated river.

Public Use and Access

Recreation use including, but not limited to, hiking, fishing, hunting and boating is encouraged in wild river areas to the extent consistent with the protection of the river environment. Public use and access may be regulated and distributed where necessary to protect and enhance wild river values.

Rights-of-Way

New transmission lines, natural gas lines, water lines, etc., are discouraged unless specifically prohibited outright by other plans, orders or laws. Where no reasonable alternative exists, additional or new facilities should be restricted to existing rights-of-way. Where new rights-of-way are unavoidable, locations and construction techniques will be selected to minimize adverse effects on wild river area-related values and fully evaluated during the site selection process.

Motorized Travel

Although this use can be permitted, it is generally not compatible with this river classification. Normally, motorized use will be prohibited in a wild river area. Prescriptions for management of motorized use may allow for search and rescue/emergency situations.

T.3.2 Scenic River Areas

Scenic river areas are defined by the WSR Act to include “those rivers or sections of rivers that are free of impoundments, with shorelines or watersheds still largely primitive and shorelines largely undeveloped, but accessible in places by roads.”

Scenic river areas are to be managed with a primary objective of maintaining and providing outdoor recreation opportunities in a near-natural setting. The basic distinctions between “wild” and “scenic” classifications, involve varying degrees of development, types of land use, and road accessibility. In general, a wide range of agricultural, water management, silvicultural and other practices could be compatible with scenic classification values, providing such practices are carried out in a manner not resulting in a substantial adverse effect on the river and its immediate environment.

Scenic river areas are where National Management Standards/Guidelines include the same considerations set forth for wild rivers, except that motorized vehicle use may in some cases be appropriate and that development of larger scale public-use facilities within the river area, such as moderate-sized campgrounds, interpretive centers, or administrative headquarters would be compatible, if such facilities were screened from the river. The following Scenic River Program Management Standards apply:

Forestry Practices

Silvicultural practices, including timber harvesting could be allowed, provided that such practices are carried out in such a way that there is no substantial adverse effect on the river and its immediate environment. The river should be maintained in its near-natural condition.

Timber outside the boundary, but within the visual screen area, should be managed and harvested in a manner designed to provide special emphasis on visual quality. Preferably, reestablishment of tree cover would be through natural revegetation. Cutting of dead and down materials for fuel wood will be limited. Where necessary, restrictions on the use of wood for fuel may be prescribed.

Water Quality

Conditions will be maintained or improved to meet federal criteria or federally approved state standards. River management plans shall prescribe a process for monitoring water quality on a scheduled basis.

Hydroelectric Power and Water Resource Development

No such development would be permitted in the channel or river corridor. Flood control dams and levees would be prohibited. All water supply dams and major diversions are prohibited. Maintenance of existing facilities and construction of some new structures would be permitted, provided that the area remains natural in appearance and the practices or structures harmonize with the surrounding environment.

Mining

Subject to existing regulations, e.g. 43 CFR 3809, and any future regulations the Secretary of the Interior may prescribe to protect the rivers included in the NWSRS, new mining claims and mineral leases can be allowed. All mineral activity on federally administered land must be conducted in a manner that minimizes surface disturbance, water sedimentation, pollution and visual impairment. Reasonable mining claim and mineral lease access will be permitted. Mining claims within the wild river boundary, and perfected after the effective date of designation, can be patented only as to the mineral estate and not the surface estate.

Road and Trail Construction

Roads may occasionally bridge the river and short stretches of conspicuous or lengthy stretches of inconspicuous and well-screened roads would be allowed. Maintenance of existing roads and any new roads will be based on the type of use for which the roads are constructed and the type of use that will occur in the river area.

Agricultural Practices and Livestock Grazing

In comparison to wild river areas, a wider range of agricultural and livestock grazing uses are permitted, to the extent currently being practiced. Row crops are not considered as much of an intrusion of the “largely primitive” nature of scenic corridors, as long as there is not a substantial adverse effect on the natural-like appearance of the river area.

Recreation Facilities

Larger-scale public use areas, such as moderate-sized campgrounds, interpretive centers, or administrative headquarters, are allowed if such facilities are screened from the river.

Public Use and Access

Recreation use including, but not limited to, hiking, fishing, hunting and boating is encouraged in scenic river areas to the extent consistent with the protection of the river environment. Public use and access may be regulated and distributed where necessary to protect and enhance scenic river values.

Rights-of-Way

New transmission lines, natural gas lines, water lines, etc., are discouraged unless specifically prohibited outright by other plans, orders or laws. Where no reasonable alternative exists, additional or new facilities should be restricted to existing rights-of-way. Where new rights-of-way are unavoidable, locations and construction techniques will be selected to minimize adverse effects on scenic river area-related values and fully evaluated during the site selection process.

Motorized Travel

This use, on land or water, could be permitted, prohibited or restricted to protect river values. Prescriptions for management of motorized use may allow for search and rescue/emergency situations.

T.3.3 Recreational River Areas

Recreational river areas are defined by the WSR Act to include “those rivers or sections of rivers that are readily accessible by road or railroad that may have some development along their shorelines, that may have undergone some development along their shorelines, and that may have undergone some impoundment or diversion in the past.”

Recreational river areas are to be managed with an objective of protecting and enhancing existing recreational values. The primary objective is to provide opportunities for the public to participate in recreation activities dependent on, or enhanced by, the largely free-flowing nature of the river.

Recreational river areas are where National Management Standards/Guidelines include allowable practices such as construction of recreation facilities in proximity to the river, although recreational river classification does not require extensive recreational developments. Such facilities are still to be kept to a minimum, with visitor services provided outside the river area. Future construction of impoundments, diversions, straightening, riprapping and other modification of the water way or adjacent lands would not be permitted, except where such developments would not have a direct and adverse effect on the river and its immediate environment. The following Recreational River Program Management Standards apply:

Forestry Practices

Silvicultural practices, including timber harvesting could be allowed under standard restrictions to avoid adverse effects on the river environment and its associated values.

Water Quality

Conditions will be maintained or improved to meet federal criteria or federally approved state standards. River management plans shall prescribe a process for monitoring water quality on a scheduled basis.

Hydroelectric Power and Water Resource Development

No such development would be permitted in the channel or river corridor. Existing low dams, diversion works, riprap and other minor structures may be maintained, provided the waterway remains generally natural in appearance. New structures may be allowed, provided that the area remains natural in appearance and the practices or structures harmonize with the surrounding environment.

Mining

Subject to existing regulations, e.g. 43 CFR 3809, and any future regulations the Secretary of the Interior may prescribe to protect the rivers included in the NWSRS, new mining claims and mineral leases can be allowed. All mineral activity on federally administered land must be conducted in a manner that minimizes surface disturbance, water sedimentation, pollution and visual impairment. Reasonable mining claim and mineral lease access will be permitted. Mining claims within the wild river area boundary perfected after the effective date of designation can be patented only as to the mineral estate and not the surface estate.

Road and Trail Construction

Existing parallel roads can be maintained on one or both riverbanks. There can be several bridge crossings and numerous river access points.

Agricultural Practices and Livestock Grazing

In comparison to scenic river areas, lands may be managed for a full range of agricultural and livestock grazing uses, consistent with current practices.

Recreation Facilities

Interpretive centers, administrative headquarters, campgrounds and picnic areas may be established in proximity to the river. However, recreational classification does not require extensive recreation development.

Public Use and Access

Recreational use including, but not limited to, hiking, fishing, hunting and boating is encouraged in recreational river areas to the extent consistent with the protection of the river environment. Public use and access may be regulated and distributed where necessary to protect and enhance recreational river values.

Rights-of-Way

New transmission lines, natural gas lines, water lines, etc., are discouraged unless specifically prohibited outright by other plans, orders or laws. Where no reasonable alternative exists, additional or new facilities should be restricted to existing rights-of-way. Where new rights-of-way are unavoidable, locations and construction techniques will be selected to minimize adverse effects on recreational river area-related values and fully evaluated during the site selection process.

Motorized Travel

This use, on land, will generally be permitted, on existing roads. Controls will usually be similar to that of surrounding lands. Motorized travel on water will be in accordance with existing regulations or restrictions.

T.3.4 Management Objectives Common to All Wild, Scenic and Recreational Rivers

Wilderness and Wilderness Study Areas

Management of river areas that overlap designated wilderness areas or wilderness study areas will meet whichever standard is highest. If an area were released from wilderness study area status and the associated Interim Management Policy, the applicable river classification standards and guidelines would then apply.

Fire Protection and Suppression

Management and suppression of fires within a designated river area will be carried out in a manner compatible with contiguous federal lands. On wildfires, suppression methods will be utilized that minimizes the long-term impacts on the river and river area. Pre-suppression and prevention activities will be conducted in a manner that reflects management objectives for the specific river segment. Prescribed fire may be utilized to maintain or restore ecological condition or meet objectives of the river plan.

Insects, Diseases and Noxious Weeds

The control of forest and rangeland pests, diseases and noxious weed infestations will be carried out in a manner compatible with the intent of the WSR Act and management objectives of contiguous federal lands

Cultural Resources

Historic and prehistoric resource sites will be identified, evaluated and protected in a manner compatible with the objectives of the river and in accordance with applicable regulations and policies. Where appropriate, historic or prehistoric sites will be stabilized, enhanced and interpreted.

Fish and Wildlife Habitat Improvement

The construction and maintenance of minor structures for the protection, conservation, rehabilitation and enhancement of fish and wildlife habitat are acceptable, provided they do not affect the free-flowing characteristics of the river, are compatible with the classifications, that the area remains natural in appearance and the practices or structures harmonize with the surrounding environment.

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Appendix U

Public Concern Statements and Analysis

New Appendix

Appendix U

U.0 Public Comments and Responses

U.1 Public Review of DEIS

U.1.1 Introduction

The public review period of the Draft Plan and Environmental Impact Statement began on April 13, 2001, and ended six and one-half months later on November 1, 2001. Notice of the public review period was initially announced on April 2, 2001 by BLM and subsequently on April 13, 2001, by the Environmental Protection Agency in the Federal Register to begin the public review period. The public was notified of the following dates and venues for public meetings through news releases, public service announcements, and the BLM California website. Public comments were received and recorded in these meetings. The public meetings were held from 6:30 p.m. to 9:30 p.m., unless otherwise specified, on the following dates (in 2001) at the following locations:

Monday, June 4 (9am-11am)
San Bernardino Co. Hearing Chambers
SBCO Government Center
385 N. Arrowhead Avenue
San Bernardino CA

Monday, June 4
Bureau of Land Management
California Desert District Office
6221 Box Springs Blvd.
Riverside, CA

Tuesday, June 5
Yucca Valley Community Center
Yucca Room
Dumosa Ave. (Behind Super 8 Motel)
Yucca Valley, CA

Wednesday, June 6
Bureau of Land Management
4765 Las Vegas Drive
Las Vegas, NV

Thursday, June 7
Needles Council Chambers
City/County Administration Bldg.
1111 Bailey Street
Needles, CA

Monday, June 11
Sheraton Hotel
Cypress Room
303 E. Cordova Street
Pasadena, CA

Wednesday, June 13
Tecopa Community Center
Tecopa Hot Springs Road
Tecopa, CA

Thursday, June 14
Ridgecrest City Council Chambers
Kerr-McGee Bldg.
100 W. California Avenue
Ridgecrest, CA

Friday, June 15
Barstow City Council Chambers
220 E. Mountain View Avenue
Barstow, CA

On one occasion the review period was extended, resulting in the six-month period noted above. Many in the public who felt that the document was too complex and proposals too important to be adequately reviewed in 90 days requested the extended review period.

On numerous occasions, in addition to the above noted public meetings, BLM provided overviews on the DEIS to individuals, interest groups, local governments, citizens of Trona, BLM's Desert Advisory Council, Death Valley National Park's Commission, Mojave National Preserve representatives, and tribal councils.). The Desert Advisory Council also identified a subcommittee to work with the planning team to evaluate existing and identify potential additional alternatives for grazing management. In addition, BLM notified the public that the Preferred Alternative routes of travel designations proposal was available for review on 7.5 minute quad maps covering the entire planning area. By the end of the public comment period approximately 1200 comments were received. These comments were in the form of letters, faxes, email, and public meeting comments.

U.1.2 Desert Advisory Council Resolutions and Responses

The following resolutions from BLM's Desert Advisory Council were developed at the Council's meeting on December 8, 2001, and are included with the set of public comments on the DEIS. These resolutions were developed following the Council's review of NECO and NEMO DEIS proposals and the public comments on each DEIS. BLM has responded to these resolutions and these are also included below. Resolutions numbered 1, 2, 5 and 7 do not apply in the NEMO planning area

1. The Council recommends that all uses within the Imperial Dunes planning area affected by decisions in the Final Recreation Area Management Plan be mitigated.

Response: The Imperial Sand Dunes (ISDRA) is a unique, world class OHV recreation site that possesses unique features and vastness that is not available anywhere else for mitigation in kind. Further, the multiple use mandate that BLM operates under provides for other uses in addition to motorized recreation, and these needs must also be considered. The Draft Plan includes an array of alternatives that address the impacts of management actions. Those impacts are characterized in terms of loss and gain of opportunities within the ISDRA. The BLM is still receiving public comment on the draft and will fully consider all comments received before issuing a final plan later this year.

2. The Council requests assistance from the State of California and the Department of the Interior in providing law enforcement in the Imperial Sand Dunes.

Response: We believe that this important recommendation from the DAC has been addressed. In response to lawlessness over the 2001 Thanksgiving weekend, BLM joined forces with the Imperial County Sheriff, the Imperial County Board of Supervisors, and the California Highway Patrol to dramatically increase law enforcement during the Christmas holiday weekend. On December 4, 2001, the Imperial County Board of Supervisors passed a resolution requesting that the State of California assist the BLM and County Sheriff's Department in providing law enforcement at the Dunes. During the New Year's holiday weekend, BLM initiated a multi-agency Incident Command System to provide adequate support personnel and necessary law enforcement presence to support a declared Zero Tolerance policy.

The Incident Command System has significantly decreased lawlessness as evidenced over the New Years, Martin Luther King, President's Day, and Easter holiday weekends. The California State Parks and Recreation, Off-Highway Motor Vehicle Recreation Commission, awarded a \$1.2 million grant to provide law enforcement and logistical support to the Dunes.

- 3. The Council recommends that grazing continue to be authorized at current levels and with current terms and conditions until BLM conducts studies relative to the impacts of livestock grazing on desert tortoise. The Council recommends that BLM actively pursue funding for such studies.**

Response: The forage competition study in the Eastern Mojave Desert ended in 1995. Currently no further studies are being conducted. Starting such studies would require the participation of a willing owner of a grazing allotment and the U.S. Fish and Wildlife Service, and long-term funding, which is not currently available, would need to be secured.

In developing the CDCA amendments, BLM has considered the best and latest information and analyses in a forum of cooperating agencies and interests. The proposals contained in the amendments reflect independent consideration of the best science available and conclusions that are independent of the recommendations contained in the Desert Tortoise Recovery Plan. The U.S. Fish and Wildlife Service will do the same in rendering its biological opinion to the amendments. Upon concluding the planning process, BLM and other land managing agencies will monitor desert tortoise population trends, as well as other related factors noted in the plan amendments, and will adjust its management as a part of its commitment to adaptive management. BLM and the U.S. Fish and Wildlife Service have already agreed to consider some experimental grazing proposals.

- 4. The Council recommends BLM pursue the Freeman exchange proposal.**

Response: (Applicable to the NEMO Planning Area only.) This exchange would facilitate community expansion for Nipton. Based upon this resolution, a review of the U.S. Fish and Wildlife Service *Desert Tortoise Recovery Plan*, and the intended use of the lands for public education, BLM has incorporated the proposal into the Proposed Plan/Final EIS.

- 5. The Council supports the NECO proposal for additional wildlife guzzlers.**

Response: Based upon this resolution and a considerable number of other public comments, the proposal on artificial waters has been expanded for the 24 waters proposed in wilderness areas to address phasing and the need for additional biological information.

- 6. The Council recommends that BLM request the U.S. Fish and Wildlife Service to update the Desert Tortoise Recovery Plan and the BLM not implement the Recovery Plan or NEMO and NECO until the revision is complete and the on-going GAO audit completed and the report filed.**

Response: BLM wrote to the U.S. Fish and Wildlife Service on March 15, 2002, to request information on whether or not the Desert Tortoise Recovery Plan has been reevaluated, if there is a plan to do so in the future, and, if so, what the date is for a reevaluation. No response has been received to date. However, court stipulation deadlines and other factors require BLM to stay on schedule to issue final decisions on these plans by the end of the year.

7. The Council recommends the five open areas recommended for closure in the NECO plan remain open in the final NECO Plan.

Response: The NECO Plan actually proposes to close only two OHV open areas: Ford Dry Lake and Rice Dunes. The other three areas mentioned – Palen Dunes, Palen Dry Lake, and Ford Dunes – were closed in the 1980 CDCA Plan, but the closures were not as clearly defined as they were for other dunes and playas. The proposal to close Ford Dry Lake and Rice Dunes focuses primarily on three factors: (1) dunes and playas are relatively rare in the western United States and contain specialized and often endemic species; (2) while these two were designated open in 1980, they have remained relatively unused for the past 20 years; (3) due to a variety of factors--size, configuration, topography, and location--they do not have significant value for the OHV use intended and would not be expected to see increased use in the future. Consequently, they are proposed for closure in the preferred alternative of the Proposed Plan/FEIS.

8. The Council recommends that all uses within the NECO and NEMO planning area affected by decisions in the Final NECO and NEMO Plans be mitigated.

Response: As an amendment to the 1980 CDCA Plan, the focus of NECO and NEMO Plan amendments are species and habitats. Those aspects of the CDCA Plan not addressed in NEMO continue to apply to BLM's long range and every day multiple use management activities. Developing the CDCA Plan involved consideration of many values and conflicts and making many difficult trade-offs. As much as possible, competing values with inherent conflicting applications were emphasized in different areas to reduce conflicts and restrictions. However, where many conservation and use values are co-located, the mix is considered compatible and acceptable.

Much the same consideration has applied in developing the NECO and NEMO Plan amendments. High value desert tortoise and high value recreation and mineral areas were made as mutually exclusive as possible. For instance, Highway 78 defines a portion of the boundary for the Chuckwalla DWMA. This line divides the DWMA and the area to the southeast, which is valuable for both recreation and mineral uses. In the Shadow Valley DWMA, an area immediately south of Turquoise Mountain and adjacent peaks that provides access to the area was excluded from the proposed plan ACEC because of its recreational and mineral value.

Another consideration relates to the goal of having very large DWMA's and the inclusion of 80 percent of the ranges of special status species in some kind of conservation emphasis area. With this high degree of inclusion, it was felt that little change to casual use recreation would be required. Vehicle-related recreation values were prominent in developing these and other proposals and through this approach are as minimally affected as possible.

U.1.3 Public Comments Analysis and Response

The U.S. Forest Service's Content Analysis Team (CAT) specializes in analyses of public comments. They were contracted to analyze and synthesize public comments into concise "public concern" statements. These public concern statements were grouped into topics and subject groupings through a process developed by the USFS and provided for a number of federal agencies over recent years. The advantages of going to this team are two-fold: professional expertise using sophisticated methodology, and independent review. Following is a description of the methodology.

U.1.4 USFS Content Analysis

Public comments on the NEMO DEIS were documented and analyzed using a process called content analysis. This process provides a systematic method of compiling and categorizing the full range of public viewpoints and concerns. Content analysis is intended to facilitate good decision-making by helping the planning team to clarify, adjust, or incorporate technical information in preparing the Proposed Plan/Final EIS. All comments (i.e., letters, emails, faxes, and public meeting comments) were included in this analysis.

In the content analysis process used for this project, each comment was given a unique identifying number, which allows analysts to link specific comments to original letters. Commenters' names and addresses were then entered into a project-specific database program, enabling the creation of a complete mailing list of all commenters on the NEMO Draft Plan/DEIS. The database is also used to track pertinent demographic information, such as comments received from organizations such as federal, state, tribal, county, and local governments or government associations, business and industry groups, recreational organizations, preservation, conservation and multiple use organizations-

All input was considered and reviewed by a group of analysts. Each comment on the NEMO Draft Plan/DEIS was first read by one analyst and then separated into comments addressing various concerns and themes. Comments were then entered verbatim into a database. A second analyst reviewed a printed report of the sorted comments to ensure accuracy and consistency while preparing the summary analysis. These reports allow analysts to identify a wide range of public concerns, analyze the relationships among them, and summarize comments into "public concern statements".

A public concern statement is just that, a statement of a public concern. It can represent one unique comment from an individual, or a common concern from numerous commenters. The planning staff, who ultimately respond to these public concerns, do not know how many people shared this concern, but rather evaluate the public concern on its merit. It is important for the public and project team members to understand that this process does not treat comments as votes and thus cannot sway decision makers toward the opinion of individuals, groups, or pluralities. Content analysis ensures that every comment is considered with equal merit in the decision process. For each public concern statement, a supporting sample statement is presented. A sample statement is a quote from one comment received that best represents the public concern. The final product includes a list of public concern statements (and associated sample statements) organized by general subjects in the Content Analysis Report (USFS 2002). This report along with the back-up full-text comments, were provided to BLM to serve in preparing responses to comments.

This process and the resulting summary are not intended to replace comments in their original form. Rather, they provide a map to the letters and other input on file with BLM and greatly facilitate the review and responses to concerns.

U.1.5 Responses to Public Concerns

Over 420 public concern statements were provided to BLM by the above-described process. BLM's project management personnel reviewed this list of public concern statements and associated sample statements and assigned appropriate staff to each public concern. In making these assignments, it became clear that some of the public concerns could be combined. Assigned staff evaluated the public concern statements and associated sample statements. They made revisions to this Plan and FEIS as appropriate, and prepared written response to public concern statements that are presented below.

Responses to public concerns are provided below. In reviewing the public concerns and responses, readers should note the following:

- To the extent that two or more public concern statements are the same or very similar they are grouped together and addressed in one response.
- For public concern statements that were characterized as applause, no response was prepared.
- For comments that only cast a preference for a particular alternative or proposal with no justification, no response was prepared.
- For public concern statements for areas well beyond the geographic range of this plan and/or and subjects not pertinent to this plan, no response was prepared.
- For comments which are the same or similar to topics in both the NECO and NEMO plans, responses are the same or very similar.
- The public concern statements which follow are grouped by subject. Choice was necessary in placing some statements into groups. Therefore, the reader is encouraged to review all the groupings to fully understand public concerns on particular subjects.

In the following section, Public Concern is abbreviated PC. The public concern statements are presented in bold text and the planning team response is in normal text.

Planning Process – Public Participation and Cooperation

PC 1: The BLM should extend the comment period to allow for adequate review of proposed plans.

Response: A variety of media are used to notify and involve the public in land use planning and other action proposals: the Federal Register, public service announcements in local and regional newspapers and radio stations, mailings to BLM mailing lists, and the BLM website. In the case of newspaper and radio stations BLM can only hope that the announcements are carried and in places/at times to be most communicated. In some cases BLM has returned to communities to repeat the opportunity. In all it is unfortunate that some people still do not get the word and are left out of the process. The extension of the public review period from July 13, 2001 to November 1, 2001 hopefully has mitigated this issue.

PC 2: The BLM should adequately notify the public regarding opportunities for participating in the planning process.

PC 3: The BLM should advertise and schedule public meetings to enhance attendance.

PC 5: The BLM should respond to requests for information.

PC 11: The BLM should ensure that affected parties are consulted during the planning process.

PC 13: The BLM should use effective outreach methods for informing motorized users about the proposed Travel Plan.

Response: Public notification in the planning process included several regional public-scoping meetings published in local publications and the Federal Register. The meetings were held at the outset of the process and later in the process as the range of alternatives were being developed. Highlights of this process are outlined in Chapter 5 Consultation and Coordination, Sections 5.1 Public Involvement and 5.2 Planning Process. Public newsletters that summarized the outcome of scoping efforts were provided to the mailing list specifically developed for this planning effort and other interested publics, agencies, and interested parties. A web page was also developed and placed on the Bureau of Land Management California State server as a supplementary source of information on upcoming meetings, contacts, key dates, and documents when released.

PC 4: The Final EIS should be clearly structured and designed to inform the general public.

Response: The document is clearly structured and designed to inform the public, as evidenced by the detailed scope and depth of public comment received. The Executive Summary also provides a concise overview of the Proposed Plan. Issues are not linked throughout the entire document when unrelated, but the summary table in Chapter 2 of the Final EIS provides a comprehensive overview of the Proposed Plan and of the environmentally preferred alternative for ease of comparison as part of an overall summary of all alternatives. In addition, some detailed activity plan-level information is provided in appendices and only major elements are summarized in the main body of the document.

PC 6: The BLM should simultaneously provide all relevant planning information to facilitate meaningful public comment.

Response: Land use plan amendments of the nature of NEMO are difficult to describe. Since it is not practical to bring forward the full 1980 CDCA Plan that is being amended, not to mention similar and pertinent documents of other agencies, BLM must extract and summarize information from other documents, policies, and laws to the extent necessary to state proposals, develop the EIS, and provide context for understanding. BLM feels that the NEMO Plan brings forward adequate general and current management information from the CDCA Plan, other agencies plans and policies, and the Desert Tortoise Recovery Plan to achieve the need, and that the document itself is complete with rationale, criteria, and analysis to support proposals contained in the alternatives. All the copies of NEMO that were mailed to the public, as well as the electronic copy on the BLM California website, contain the same identical information. To the extent that individuals in the public wants to better understand the nature and context of proposals, it is incumbent upon them to obtain the documents they are interested in.

PC 7: The BLM should provide accurate maps and route closure information to encourage public participation.

PC 8: The BLM should provide maps that are sufficient to allow site-specific analysis of every motorized route.

Response: The Bureau of Land Management has made 7.5 minute maps of the subregions proposed for routes of travel designations within NEMO available upon request (about 70 maps), and some members of the public have requested sets of these maps. In addition, the routes of travel maps in the FEIS have been improved to provide additional detail on routes of travel, route attributes, and rationales for proposed route-specific decisions.

PC 9: The BLM should conduct Section 7 consultation with the U.S. Fish and Wildlife Service prior to the close of the public comment period to ensure adequate opportunity for public review.

Response: The BLM initiated consultation on the CDCA Plan and the proposed amendments on January 31, 2001, well prior to the close of the public comment period. At the date of publication, the BLM has received a final biological opinion from USFWS on the effects of the CDCA Plan and proposed amendments, including the Proposed NEMO Plan, on the desert tortoise and two listed plants. The BLM is awaiting a final biological opinion on migratory birds and the Amargosa vole..

If the USFWS finds that the proposed action will “jeopardize the continued existence” of a listed species or will “adversely modify critical habitat,” then reasonable and prudent alternatives must be presented by USFWS. Because the USFWS has been involved in the development of the Proposed Plan, we do not anticipate a jeopardy or adverse modification opinion.

If a non-jeopardy opinion is prepared, USFWS will issue an “incidental take authorization” in the biological opinion. This would allow a specified level of harm or mortality to the listed species or of impact to habitat. The biological opinion may include “reasonable and prudent measures” to minimize the take of listed species. The biological opinion may then include a list of “terms and conditions” to implement the reasonable and prudent measures. The BLM must comply with these terms and conditions. However, these terms and conditions may not substantially alter the proposed action. If the proposed action would require substantial modification to receive an incidental take authorization, then USFWS must issue a jeopardy or adverse modification opinion.

PC 10: The BLM should eliminate bias against motorized recreationists in the planning process.

PC 313: The BLM should provide information on who was consulted regarding route closure decisions.

PC 315: The BLM should involve the public in the decision-making process regarding road closure.

Response: The NEMO planning team did not select the travel plan process that is referred to in this comment. NEMO and NECO planners worked closely together to achieve consistency in route designation methodologies. During Plan development, individuals representing diverse interest groups (working through the District Advisory Council) participated in the development and review of route network proposals and alternatives, provided feedback on issues to be resolved, and fostered support from their constituencies for the Plan. Other groups and individuals participated in the process and provided general on-the-ground route information or information specific to their user interests.

During the designation process in each desert tortoise subregion, each existing route was evaluated against the criteria in 43 CFR 8342.2 (see Chapter 4, Section 4.9), including each route proposed for closure. The overall route network in each desert tortoise subregion was also evaluated to ensure that both proposed networks—the one north of I-15 and the one south of I-15—would adequately serve local residents and visitors, both in terms of general transportation access and recreational needs

PC 12: The BLM should address the perception that local concerns have been ignored in the planning process.

PC 254: The BLM should hold public forums to address concerns of local residents regarding land-use management decisions.

PC 255: The BLM should consider the needs of local residents when making land-use decisions.

Response: Chapter 5 of the FEIS describes in detail the public involvement process that included public outreach and meetings, legally required public involvement steps and comment periods. The planning process for this plan amendment has included numerous public meetings and an extended comment period in which citizens were provided opportunities to be involved in the planning process and to share local knowledge. All public comments received during the extended comment period were analyzed and categorized by an independent team from outside the California Desert District. Following the independent comment analysis, the public concerns were analyzed and addressed by resource specialists and considered by BLM managers. The comments were not weighted by the number received or counted as votes, nor was special consideration given to comments received from a particular geographic region, organization, or individual.

Planning Process – National Environmental Policy Act Compliance

PC 14: The Final EIS should disclose all information relevant to issue identification, planning criteria, management situation analysis, and alternative selection.

Response: Issue identification, planning criteria, management situation analysis and alternative selection are based on BLM planning regulations contained in 43 CFR 1610. These planning steps have been followed by the BLM in the development of this plan amendment and are contained in associated documents such as the Draft and Final EIS. Because of a variety of circumstances, the planning process for this amendment has extended over several years. Further information regarding these planning steps is contained in Chapter 1 of the Proposed Plan/FEIS and the administrative record for this planning effort.

PC 15: The BLM should justify how the scoping process was conducted and how issues were selected from scoping comments.

Response: The public scoping process for this planning effort is described in Chapter 5 of the Proposed Plan/FEIS, with a detailed description of issues. The issues that were identified for analysis and additional information regarding the issues are summarized in Chapter 1 and Chapter 2 of the FEIS.

PC 16: The BLM should comply with NEPA regulations to ensure that public comments are not considered as votes during the planning process.

PC 17: The BLM should comply with NEPA regulations to ensure that public comments are not considered as votes during the planning process.

Response: Chapters 1 and 5 of the Proposed Plan/FEIS describes in detail the public involvement process that included public outreach and meetings, legally required public involvement steps and comment periods. All public comments received during the extended comment period were analyzed and categorized by an independent team from outside the California Desert District. Following the independent comment analysis, the public concerns were analyzed and addressed by resource specialists and considered by BLM managers. The comments were not weighted by the number received or counted as votes, nor was special consideration given to comments received from a particular geographic region, organization, or individual.

PC 18: The BLM should include motorized recreation planners on the Interdisciplinary Team to ensure a balanced perspective on the Travel Plan.

Response: The primary recreation planner on the planning team and involved in the development of the route network in the DWMA's and associated route designation process is an outdoor recreation planner heavily involved with motorized recreation issues (see also response to PC #10).

PC 19: The BLM should evaluate how nationally funded environmental groups have influenced the NEPA process regarding motorized recreation.

Response: The BLM followed all applicable laws and regulations regarding FLPMA, NEPA and the BLM planning process to amend the CDCA Plan for the NEMO planning area. The investigation of nationally funded environmental groups is beyond the legal authority of the BLM and beyond the scope of this plan amendment.

PC 21: The BLM should use an independent scientific panel for objective rangeland assessments.

Response: At a regional level, NEMO team planners participated in the overall review that was conducted for shared NECO/NEMO strategies during the NECO planning process.. Specific to rangeland assessments, as outlined in Section 2.1 of the NEMO document, Standards are expressions of the physical and biological condition or degree of function required for sustainable, healthy rangelands. They are not intended to provide site-specific thresholds with scientific methods for measurements. It is generally guidelines rather than standards that provide measurable assessments and methodologies, based, again, on the definition of guidelines in Section 2.1. The question is therefore applicable to guidelines, i.e., specific to grazing use, in this planning effort.

Scientists as well as the public, ranchers and other interested individuals from outside the Bureau of Land Management may provide input to, participate in field reviews, review data associated with and give feedback to rangeland assessments. It is not cost-effective, nor would it guarantee independence, to hire another panel to do what the Bureau of Land Management has already been delegated the responsibility to do -- to make the final decisions based on the assessment data in terms of needed management changes, using whichever set of guidelines are ultimately adopted in this planning effort.

PC 22: The BLM should establish a Multiple-Use Review Board to assure that the Final EIS reflects multiple-use management goals and the needs of the public.

Response: A Multiple-Use based advisory board already exists in the California Desert Conservation Area. It is the California Desert District Desert Advisory Council (DAC), established during the development of the California Desert Conservation Area Plan in 1978. This Council has 15 members that represent specified multiple-use interests, including Off-road Vehicle representation, Renewable and Non-renewable Resources, Environmental representation, Utility interests, Tribal representation, Local government representation, and At-large public membership.

PC 23: The BLM should base the Final EIS upon the best available science.

Response: The managers and resource professionals involved in the EIS for this plan amendment used the best science that was reasonably available. The EIS contains a substantial number of citations and referenced literature to provide the public with information about the science on which analysis was based. Notwithstanding the science utilized in the EIS, it is acknowledged that a great deal of professional judgment was relied upon in assessing the effects of the alternatives. This reliance is not a flaw,. f-irst, because the judgments are generally well informed given the data upon which they are based. second, the judgments are of experienced resource professionals with educational credentials and years of on-the-ground experience, and third, a degree of professional technical judgment is inevitable in evaluations and predictions based on the available science and is primarily relied upon in conducting the assessments of effects of this FEIS.

PC 24: The BLM should re-circulate a revised DEIS that provides adequate environmental impact analysis and complies with relevant statutory requirements.

Response: The BLM has followed all procedural steps required by law and regulation. Changes between the Draft EIS and Final EIS, which result from both public comments and internal agencies' reviews, have strengthened the document by the addition of information, facts, scientific and technical evidence, and logic to support conclusions regarding impact analysis of the alternatives.

PC 25: The BLM should ensure that planning staff meets State of California professional credential standards prior to conducting NEPA analyses.

Response: The analysis of the alternatives was conducted by BLM resource professionals who have met educational and experience requirements for their positions. Their analysis and conclusions are based on a combination of scientific and technical information and professional judgment and are therefore a valid basis upon which the responsible official may make a reasoned choice among the alternatives. There is no legal or regulatory requirement that BLM professionals must meet the State of California professional credential standards in order to conduct NEPA analyses.

Planning Process – Implementation, Monitoring, Adaptive Management

PC 26: The Final EIS should provide data supporting the BLM’s identification of potential causes of resource decline.

Response: Public land health assessments are conducted with an interdisciplinary team of BLM staff and those members of the public wishing to participate. The assessment team identifies the geographical area to be reviewed. The field specialists of the team evaluate, describe, and photograph resource conditions (soil conditions, plant vigor, etc.) and activities occurring within the selected area. After the area has undergone field assessment, one or more members of the team draft a skeleton determination based on team discussions to be routed among team members for their specialized input. That input plus existing monitoring data and other relevant resource data forms the basis for the final determination. The determination identifies the area assessed and provides relevant related information, lists names of participants, identifies information reviewed, summarizes the rationale for the determination, summarizes contributing factors for not meeting standards, provides recommendations from BLM staff for development and implementation of appropriate actions, documents public involvement, and identifies Authorized Officer’s priorities for action and implementation of the determination.

A determination is based upon review of field data and existing records. Review of standards would occur planning area-wide and recommended prescriptions would be made for those areas that do not meet the standards. By regulation standards are being reviewed in grazing allotments, and have been completed in most of the allotments. At this point, no other areas have been assessed in the planning area. The addition of public lands for field assessment would mean more BLM staff and interested members of the public would become involved after finalization of the Proposed Plan in implementation of this action.

PC 27: The BLM should conduct a cumulative impact analysis of other projects on the NEMO planning area.

Response: The FEIS contains cumulative impact analysis in Section 4.12. This cumulative impact analysis, because of the broad landscape nature of the Proposed Plan and the millions of acres involved in the region surrounding the planning area, must by necessity be somewhat general in nature. The FEIS cumulative effects analysis addresses the incremental impacts of the Proposed Plan when added to other past, present, and reasonably foreseeable future actions.

PC 28: The BLM should coordinate NEMO planning and implementation with related plans to ensure consistency.

PC 29: The BLM should revise the NEMO and NECO planning documents for consistency.

PC 32: The Final EIS should correctly relate the NEMO plan with the National Park Service's plans regarding the Desert Tortoise Recovery Plan and the Joshua Tree Plan.

PC 51: The Proposed Plan should comply with local government land use designations and management prescriptions to assure consistency.

Response: From these and other public comments, BLM has made considerable improvements to Chapter 4 effects analysis and other subjects. Regarding cumulative affects and agency-agency conflicts, the opportunities are provided in these plans and their implementation to bring the mandates, plans, and project actions of many agencies into larger contexts than are possible with single-agency planning. Considerable coordination of planning processes has occurred among adjacent plans, as well as on a California Desert-BLM basis, given the fact that each plan is a plan amendment to the 1980 CDCA Plan. On the other hand, each plan's approach to the desert tortoise and many species are also unique in that they are tied to the unique qualities of place and combinations of uses. Future implementation of any land acquisitions or conveyance will require environmental analysis, which would include a discussion of local land use plans. The Proposed Plan affects the multiple-use designation; it does not authorize or approve a particular development. In the case of DWMA's, a "stand alone" management is required. Some actions are plan amendments; others are prescriptions to ACEC plans for desert tortoise and other species.

PC 30: The BLM should integrate NEMO, NECO, and WEMO planning documents into one California Desert Conservation Area Plan Revision.

PC 48: The BLM should initiate one amendment for all California Desert Conservation Area planning units.

Response: NEMO and other planning efforts currently being developed each amend the 1980 CDCA Plan. They are unique and complex enough to warrant a separate plan amendment effort. The nature of values and levels of uses throughout the CDCA vary and do not necessarily invalidate separate plan amendments. Separate plan amendment decisions are being scrutinized to ensure that they are the same as, or are consistent with, common CDCA Plan themes and programs and that cumulative impacts analyses consider the CDCA as a whole. At the conclusion of these plan amendments, there will still be the one CDCA Plan.

PC 31: The BLM should suspend the NEMO planning process until a decision is made in the proposed Yucca Mountain nuclear waste repository.

Response: The Bureau of Land Management would not indefinitely delay the important decisions of this planning effort based on what may happen in the Yucca Mountain or another planning effort. If it were appropriate to do so, the information would be factored into the reasonably foreseeable effects in the Northern and Eastern Mojave planning effort as is provided for in the National Environmental Policy Act (40 CFR 1508.8).

There is concern that a new, upgraded railroad will be built to service the Yucca Mountain facility along the existing Tonopah & Tidewater Railroad in the NEMO planning area. The Final Yucca Mountain EIS (February, 2002) in Figure S-13 has not identified a new railroad through this area as one of the transportation alternatives under consideration. No facts or evidence are provided to indicate it is under consideration as an alternative. In addition, there are substantial conflicts that would need to be addressed through an environmental analysis process – natural and cultural resource as well as historical and recreational conflicts – before this alternative could be selected. Therefore it is not appropriate to factor it into the reasonably foreseeable future.

PC 33: The BLM should update the Final EIS to reflect the National Park Service's general management plans for Death Valley National Park and Mojave National Preserve.

Response: The Bureau of Land Management agrees that the Proposed Plan decisions in the CDCA's Northern and Eastern Mojave Desert depend upon, and are related to, decisions made by the National Park Service on adjacent park lands, and editorial changes have been made to reflect the releases of the final General Management Plans as provided by NPS comments. The planning area and its park and public land resources are bound together by geographic and biologic values that do not recognize jurisdictional boundaries. Most compelling of the common goals in these planning efforts is the need to conserve and recover the desert tortoise, and provide for continued public access and sustainable use. However, the Bureau of Land Management does not manage National Park Lands, nor does the National Park Service manage public lands.

PC 34: The Final EIS should clarify that the responsible land management agencies cannot abdicate responsibilities to the Desert Managers Group.

Response: The Desert Managers Group is comprised of the various agencies in the desert that utilize this forum to discuss desert-wide issues and concerns; it does not mean that any agency abdicates its responsibility.

PC 35: The BLM should reduce the amount of agency resources it commits to develop the Final EIS.

Response: The personnel, funding and time that are committed to a BLM planning effort and associated NEPA compliance is relative to the scope, the sensitivity and the complexity of the plan. The NEMO Plan encompasses 2.7 million acres of public lands and addresses many issues of high interest to the public and of vital importance to the BLM's mission. The laws, resources and social context are varied and complex. As such, it would be expected that the planning effort that would accompany an EIS of the breadth and importance of the NEMO Proposed Plan would be of significance.

PC 36: The BLM should ensure that it has the funding and resources to meet multiple-use mandates while protecting the environment.

PC 37: The Proposed Plan should clearly identify monitoring objectives and future actions for correcting plan implementation.

PC 39: The BLM should address the availability of funds to provide effective monitoring.

Response: BLM and other cooperating agencies have very limited funds with which to conduct monitoring tasks. At this time, however, there are many unknowns such as agency capability, costs, grant opportunities, and volunteerism. Chapter 7 outlines the current monitoring and implementation strategy, and provides the mechanisms to further refine tasks and priorities as new information is provided.

PC 38: The BLM should consider the negative impacts of monitoring.

Response: By tailoring the action to the monitoring need, BLM would discharge its oversight responsibilities with a minimum of disruption. Though the type and method of monitoring may be altered, the size and nature of the areas monitored would not change. There should be no need for circumvention of closed routes, including those in washes, because BLM expects the public to help in striking the balance appropriate to the genuine needs of users and the fundamental survival needs of plant and animal species in a very challenging environment. BLM would install and maintain a minimum of signs. The purpose of most signs would be to assure the public that a given route is “open” for use. A number of those routes would be in washes.

PC 40: The BLM should clarify the number of acres potentially affected by the proposed projects.

Response: The entire planning area is approximately 3.3 million acres..

PC 41: The BLM should provide visitor education programs to help conserve the desert environment while allowing recreational use.

PC 179: The BLM should provide public education opportunities pertaining to desert vegetation.

PC 204: The BLM should continue to educate people about the desert tortoise.

Response: The BLM agrees. Visitor education and outreach, including strong volunteer programs, are essential components of successful conservation efforts. Two examples in the planning area include: (1) the privately run desert education center that is proposed for Nipton and is one element of the program for the Desert Tortoise Strategy; (2) recent Sperry Wash signing and marking efforts to address conservation issues and still permit access through the area.

PC 42: The Final EIS should recognize the U.S. Fish and Wildlife Service as the agency responsible for desert tortoise habitat category decisions.

Response: The habitat categories are BLM designations. The requirement for their designation, definitions for the three categories, goals for each category, and criteria for the categories were specified in the BLM's *Desert Tortoise Habitat Management on the Public Lands: A Rangeland Plan*, which was signed by the Director in 1988. After operating under an interim desert tortoise habitat category map for several years, the BLM amended the CDCA Plan in 1993 to incorporate the official map.

In the Desert Tortoise Recovery Plan, USFWS indicated general areas where desert wildlife management areas or DWMA's should be established. However, the USFWS specifically left the designation of boundaries to the land management agencies (Recovery Plan, p. 48, item 1.b.). The USFWS has participated in the development of the Proposed Plan, including proposed DWMA boundaries and management actions. BLM would manage its DWMA's under the CDCA Plan as ACECs. In addition, USFWS will review the Proposed Plan formally through the consultation process defined in the Endangered Species Act.

PC 43: The Proposed Plan should require site-specific review of projects that disturb 10 or more acres of public land.

PC 54: The Proposed Plan should retain current requirements for site-specific project review and consultation for mining disturbances greater than 10 acres.

PC 124: The BLM should evaluate ground disturbance in Desert Wildlife Management Areas.

PC 184: The Proposed Plan should retain requirements for site-specific project review and consultation for mining disturbances greater than 10 acres.

PC 388: The BLM should allow a greater than one percent disturbance limit for mining operations.

PC 389: The Proposed Plan should adopt a 10 acre disturbance area, rather than 100 acres, which can be evaluated without an Environmental Impact Statement.

Response: All projects will receive site-specific review under the National Environmental Policy Act (NEPA). The proposed action is that actions up to 100 acres and meeting the stated criteria will not require a separate consultation with USFWS under Section 7 of the Endangered Species Act. Rather, a programmatic biological opinion from USFWS will be applied to qualifying projects. We are proposing to do this based on many years of application of a well-tested set of mitigation measures.

Even then, each project affecting desert tortoise will have site-specific review by both BLM, and then USFWS through a reporting and review process. This will ensure that BLM has properly applied the programmatic biological opinion. More specifically, USFWS will ensure that the project under review qualifies for the programmatic and that the appropriate terms and conditions (i.e. mitigation measures) are being applied.

Statutory Authority

PC 44: The Final EIS should identify how changes on public lands meet the legal standard for triggering the proposed plan amendments.

PC 45: The Final EIS should identify the new BLM policies that were adopted and/or implemented and justify how these policies trigger the proposed plan amendments.

PC 46: The Final EIS should disclose the BLM's authority to amend the CDCA Plan. The Final EIS should justify how particular threatened and endangered species status changes are legitimate triggers for the proposed plan amendments.

Response: For the California Desert Conservation Area, Section 601 of the Federal Land Policy and Management Act (FLPMA) provided for the protection of resources as well as provide for use and recreation while recognizing valid existing rights and initiated the California Desert Conservation Area Plan of 1980. FLPMA (Sections 201, 202) also recognized the need to revise land use plans owing to new needs and information. The utilization of plan amendments is defined in 43 CFR Part 1610.5-5.

Pursuant to 43 CFR 1610.5-5, monitoring and evaluation findings, new data, new or revised policy, a change in circumstances or a change in circumstances or a proposed action that may result in a change in the scope of resource uses or change in terms, conditions and decision of the approved plan initiated a plan amendment. The listing of the desert tortoise through the Endangered Species Act and the resulting development of a recovery plan and identification of critical habitat is an example of events that call for modifying the CDCA Plan through a plan amendment process. These triggers are identified in Chapter 1 of the NEMO FEIS document, and further discussed and clarified under Section 1.3 Purpose and Need. The basis for change in status (i.e., population declines, threats, etc.) rather than the status itself provides the need and is the basis of choice for the proposed strategy.

PC 50: The BLM should examine proposed route closures for compliance with RS2477.

PC 326: The Final EIS should clarify that the BLM has no authority to close county roads.

PC 327: The Final EIS should ensure the preservation of RS 2477 rights-of-way for future generations.

Response: BLM is not proposing to close any county road in the planning area. Revised Statute 2477 (R.S. 2477) was passed by Congress as Section 8, of the Mining Act of 1866. It was repealed when the Federal Land Policy and Management Act (FLPMA) was passed on October 21, 1976. However, FLPMA did not terminate any existing "rights-of-way" granted under R.S. 2477. The Mining Act established the first system for patenting lode-mining claims and provided for access. R.S. 2477 said: "The right-of-way for the construction of highways over public lands, not reserved for public uses, is hereby granted."

There are often questions of what was offered under R.S. 2477, to whom, and how the rights-of-way were to be perfected. These questions have not been answered in a clear and consistent manner either locally or nationally. Many routes across public land came into existence with no documentation of the public land records. Routes across public land after 1866, but before withdrawal, patent, mining claim, or reservation for a specific purpose, and before the passage of FLPMA may be R.S. 2477 rights-of-way.

In an attempt to clear up these ambiguities, Congress directed the Department of the Interior to study the history, impacts, status, and alternatives to R.S. 2477 rights-of-way and to make recommendations for processing claims (assertions). This process began in November 1992. Public meetings were held to assist in preparing a report that was submitted to Congress in May 1993. The Report stated that, until completion of the report, the Department “deferred processing pending claims unless there is an immediate and compelling need to recognize or deny any claims.”

The BLM was directed to prepare regulations to guide the process of reviewing R.S. 2477 claims. Draft regulations were published in 1994. Three terms are important in determining which roads are R.S. 2477 rights-of-way: (1) “construction,” (2) “highways,” and (3) “not reserved for public uses.” The terms “construction” and “highways” are among the most controversial provisions of R.S. 2477 and the regulations. On November 19, 1995, Congress approved a moratorium on the regulations. Because there are no final regulations that provide criteria for processing claims under R.S. 2477, the policy of deferring processing claims unless there is a compelling need remains in place.

The route network identified under the Proposed Plan was developed through a route designation process that considered resource management issues and regulatory and statutory closures (such as in designated wilderness). This process did not make any determinations under R.S. 2477. If a route is designated as “closed,” that designation is not a determination that an R.S. 2477 right-of-way does not exist. Such a closure does not extinguish any R.S. 2477 right-of-way that may exist. Conversely, a route designated “open” does not mean that the route was determined to be an R.S. 2477 right-of-way.

PC 51: The Proposed Plan should comply with local government land use designations and management prescriptions.

PC 52: The BLM should comply with the Regulatory Flexibility Act.

PC 391: The BLM should evaluate their definition of a “small entity” within NEMO.

PC 392: The BLM should provide documentation that the Initial Regulatory Flexibility Analysis was conducted for the NEMO Planning Area.

Response: The NEMO plan is not rule making, therefore, the regulatory flexibility analysis is not required.

PC 53: The BLM should review proposed route closures for accordance with multiple-use management directions.

Response: The Federal Land Policy and Management Act (FLPMA), in requiring that development and revision of land use plans use and observe the principles of multiple use and sustained yield (Sec. 202(c)(1)), defines “multiple use,” in part, as the management of public lands and their various resource values in such manner that “takes into account the long-term needs of future generations for renewable and nonrenewable resources, including, but not limited to, recreation, range, timber, minerals, watershed, wildlife and fish,” and allows “the use of some land for less than all of the resources” (Sec. 103(c)).

In developing the NEMO Plan alternatives, BLM staff observed the principles of multiple use and sustained yield. Within the desert tortoise subregions a particular consideration was providing for protection of special status species, in particular for the recovery of the desert tortoise, while not significantly constraining opportunities for a diversity of recreation and other casual use activities, including those that are motorized-vehicle based. Limiting vehicle access to a greater extent in some areas than others to achieve such goals as recovery of threatened and endangered species conforms with the multiple-use mandate established by FLPMA, that is, some public lands need not accommodate all resource uses.

The analysis regarding impacts to recreation resulting from designating routes of travel as “open,” “limited,” and “closed” under the Proposed Plan has been strengthened for the Final Environmental Impact Statement. The effects on vegetation and related issues; wildlife; and soils and air quality from designating routes as “open,” “limited,” and “closed” under the Proposed Plan are described briefly in the FEIS in Sections 4.2.5.1, 4.2.5.2, specific to their effects on desert tortoise conservation and recovery, and again under the route designation impacts analysis in 4.9.5.1, 4.9.5.2, and 4.9.5.3, respectively.

The effects on Recreation and Motorized-Vehicle Access consequent to such actions are described in Sections 4.2.5.9 and 4.2.5.11, respectively in the discussion of desert tortoise conservation and recovery and subsequently in 4.9.5.5 and 4.9.5.8 under the overall route designation discussion. The effects of different route designation scenarios proposed under other alternatives are also provided in Chapter 4 (Environmental Consequences—Third number gives the alternative number, i.e., 4.9.1.1 is alternative 1, 4.9.2.1 is alternative 2, etc.). These analyses form the analytic basis for comparison of the alternatives (40 CFR 1502.16). Specific references to hunting opportunities have been included.

The analysis in Chapter 4 concluded that such limitations, overall, do not result in a substantial change in recreational opportunities or access within the desert tortoise subregions.. However, some groups, including hunters, are more affected than others because, in the MUC L desert tortoise subregions, washes would not be approved as routes of travel unless they provide primary transportation access (see Routes of Travel designation criteria in Chapter 2.10.2 as modified by Alternative 5. and Sections 4.9.5.5 and 4.9.5.8, Impacts to Recreation Resources and Activities and to Vehicle Access, respectively). The cumulative effects of limitations on vehicle-based recreation, including those stemming from the designation of wilderness upon passage of the California Desert Protection Act of 1994 (Public Law 103-433), are discussed in the cumulative effects section in Chapter 4, Section 4.12. The conclusions of the analysis find that the cumulative affects are not significant.

PC 55: The BLM should ensure adequate supervision of planning documents with regard to statutory requirements, standard resource classifications, and information accuracy.

PC 383: The Final EIS should clarify NEMO active mines and mineral potential maps, and correct false and missing information.

Response: Appendix K has been modified to include a summary on the 1872 Mining Law and other statutes. Regarding BLM's position on R.S. 2477 the reader is referred to the response to Public Comment #327. Regarding resource classifications, the mineral potential map of Figure 3a has been modified to clarify the relationship of the coverages to well-recognized CDCA Plan mineral terms, and the symbols used have been likewise modified. Areas having potential for leasable industrial mineral resources (mostly sodium resources) and locatable minerals (mostly nonmetallic) are now included.

Consideration of Alternatives

PC 56: The BLM should draft and implement a new preferred alternative providing reservation of valid existing property and access rights.

PC 251: The BLM should ensure recreation access to public lands in spite of private inholdings.

Response: Valid existing rights are recognized, and cannot be either modified or voided by an alternative. Routes of Travel designations (i.e., "open", "closed", and "limited") were not made across private lands. Upon assertion of rights by private landowners to restrict access across their lands, the BLM will address the issue of public access to public lands on a case-by-case basis. BLM will work cooperatively with land owners and local governments, and may pursue easement, cooperative agreement, or other instrument to provide public access.

Generally, in the NEMO Plan, assuring access to public lands across private inholdings has not been a major issue, and there is not a need to address it strategically. Some larger private landowners with relatively many inholdings (e.g., Union Pacific, Cadiz Land Company, Catellus) were specifically consulted during the route designation process. In instances where a route traversed public and private lands, the portion of the route that crossed public land was given a designation. The portion traversing private lands was not designated. See Chapter 8 Routes of Travel designation maps, Figures 4a–4h.

PC 57: The Final EIS should include clear language to establish one consistent, Proposed Plan.

Response: In response to these concerns BLM has modified Table 2.1 at the beginning of Chapter 2 that describes how the NEMO issues are to be addressed in the planning effort. In addition, the Proposed Plan, as selected, is described in the Executive Summary of the document. For goals and objectives for the full set of recreation and other major elements of public lands management in the California Desert the reader is referred to the overall CDCA Plan.

- PC 59:** The BLM should implement Alternative 2 only if it is strengthened to better protect endangered plants and animals.
- PC 60:** The BLM should implement Alternative 2 to protect environmental resources.
- PC 61:** The Final EIS should not include additional land use restrictions within the Preferred Alternative.
- PC 63:** The BLM should draft and implement an alternative that includes all provisions of the Desert Tortoise Recovery Plan.
- PC 64:** The Final EIS should include a Proposed Plan for routes of travel that preserves multiple-use principles including motorized recreation.
- PC 66:** The Final EIS should include a Travel Plan Alternative that supports motorized recreation.
- PC 68:** The Proposed Plan should consider the boundaries as identified in the Fish and Wildlife Service Recovery Plan as desert tortoise ACECs.
- PC 71:** The Proposed Plan should uphold all current Multiple Use Classifications.
- PC 75:** The BLM should conduct studies to establish credible evidence of vehicle route impacts on flora and fauna.
- PC 206:** The BLM should protect the desert tortoise by adopting Alternative 2 as its Preferred Alternative.
- PC 210:** The BLM should consider that it is not required to adopt all aspects of the Desert Tortoise Recovery Plan.
- PC 400:** The BLM should preserve desert resources for the well-being, enjoyment and education of future generations
- PC 401:** The BLM should preserve motorized access to public lands for the enjoyment of future generations.

Response: These comments provide a preference for an alternative only; do not provide enough specificity in describing the changes to an alternative desired; and/or have not provided further facts and evidence to support a change in the Proposed Plan or another alternative, as appropriate.

- PC 62:** The Final EIS should incorporate all CDCA lawsuit settlement conservation measures within Alternative 2.

Response: The CDCA lawsuit settlement conservation measures were aimed at interim steps while the BLM completed consultation with the US Fish and Wildlife Service on the CDCA Plan. The Proposed Plan incorporates an overall strategy to accomplish the Purpose and Need set forth in Chapter One of the FEIS. The Purpose and Need of this plan provides for the conservation and reduction of threats to species listed under the Endangered Species Act including the desert tortoise, Amargosa niterwort, Ash Meadows gumplant, and other species. The focus of this plan was developed, including a range of alternatives, prior to the lawsuit. The design of the Proposed Plan had objectives that were similar in intent as many of the conservation measures in the CDCA lawsuit, but more focused in some respects, and more landscape-level in other respects. The environmental consequences analysis contained in Chapter 4 of the FEIS provides evidence that the plan goals and objectives for listed species will be met.

PC 65: The Final EIS should include an education alternative designed to reduce and mitigate motorized recreation impacts.

Response: An education plan addressing motorized recreation as well as other issues will be included in the implementation of this plan. Leave No Trace and Tread Lightly programs are an integral part of this plan along with interpretation, signing, maps (e.g., Desert Access Guides), and the development of brochures and web pages. BLM will be doing extensive education and outreach in addition to the closures to protect sensitive resources. Briefings on the need and methods to protect desert tortoise and its habitat will continue to be presented to participants at organized events, clubs, and school. It is also anticipated that through monitoring efforts, BLM will have the ability to collect data to assist them in identifying alternative measures to protect the tortoise and other sensitive resources. Education alone would not be substantive enough to be considered as an alternative to closing or limiting routes since route designation was an objective of the California Desert Conservation Area (CDCA) Plan (1980) as amended.

General Desert Environment

PC 69: The Proposed Plan should provide protection and management for botanically unique regions within the NEMO area.

Response: The Vegetation Element of the CDCA Plan defines Unusual Plant Assemblages (UPAs) as “those strands of vegetation within the CDCA which can be recognized as extraordinary due to one or more factors. The UPAs are shown on Map 6 of the CDCA Plan. UPAs are to be considered in site-specific environmental analyses for proposed actions.

In 1980, many of the most significant UPAs were designated as areas of environmental critical concern (ACEC); since then, many of these have been transferred to National Park Service units (e.g., Clark Mountain, New York Mountains, Eureka Dunes, Saline Valley Marsh and Dunes). Some other UPAs are now being proposed in the NEMO Proposed Plan as new ACECs. Among these UPAs are Carson Slough Salt and Brackish Water UPA (Carson Slough ACEC) and Valley Well Shadscale Scrub UPA (Shadow Valley DWMA ACEC).

PC #: 70 Public Concern: The Proposed should incorporate an ecosystem approach and fully protect and restore native biodiversity within the NEMO area.

Response: Some aspects of the Proposed Plan address the needs of specific threatened or endangered species (e.g., desert tortoise, Amargosa vole, Amargosa niterwort, Ash Meadows gumplant). Because, the ecosystems upon which these species depend are of fundamental importance, the Proposed Plan addressing these species’ needs incorporates an ecosystem approach. So, proposed measures address a wide range of uses (e.g., livestock grazing, vehicle access, off-road recreation, landfills, highways) and ecosystem processes (e.g., raven predation, watershed function, disease, fire, and noxious weeds) in riparian and uplandland systems.

The Proposed Plan would adopt a set of Standards for Public Land Health addressing four environmental components (soils, native species, riparian/wetland, and stream function. The Standards express “the levels of physical and biological condition or degree of function required for healthy, sustainable rangelands” (Sec. 2.1). The Native Species standard states, “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 unusual plant assemblages) are maintained in places of natural occurrence.” (Sec. 2.1.2.1.) Eight indicators for the Native Species Standard are given.

PC 73: The Final EIS should acknowledge potential negative effects of foot travel on habitat.

Response: Due to the remoteness and climate of the NEMO Planning Area in particular and the California desert in general, visitors use motorized vehicles to engage in most desert recreational activities, whether as the primary recreational activity (e.g., vehicle touring) or for transit to recreation destinations (e.g., designated wilderness areas). Hence, the impacts from vehicle use, whether legally traveling on existing routes or traveling cross-country where not allowed, have been the primary focus of attention relative to recovery of the desert tortoise and protection of other special status species and their habitats.

To date, substantive impacts have not been identified from non-motorized activities, such as a proliferation of trails created by hikers, equestrians, and mountain bicyclists, affecting resources associated with the NEMO Proposed Plan and alternatives. There are some specific threats, and these are outlined in Chapter 4—a few of them are summarized below. Illegal activities facilitated by motorized-vehicle access, such as disturbance or the shooting of desert tortoises, have been an issue and occurred in the desert, but are not a known factor in the NEMO planning area (see Sec. 4.2.1.2 Impacts to Wildlife). Illegal dumping (which contributes to the raven population, and resulting predation on juvenile tortoises) has been a factor throughout the CDCA, and is not specifically attributable to one user group in NEMO. Hikers, cavers and climbers are specific threats to bat maternity sites, including sensitive bat species. The nesting sites for these species are usually in caves. Parents of these species are easily disturbed during nesting and rearing, especially by people on foot (see Sec. 4.5.1).

PC 74: The Proposed Plan should designate and enforce travel routes within NEMO to meet ecological standards and restrictions.

Response: BLM is obligated under regulations and Executive orders to designate routes as described in the introduction to Section 2.10. To implement the requirement criteria were developed for the Planning Area for designating routes on BLM lands that reflect the general intent of regulation. These criteria are listed in Chapter 2, Section 2.10. Routes are proposed closed only where the criteria apply; however, in some cases, depending on the alternative, the use need of a route was more compelling than applying the criterion and the route was designated open. The other values weighed in the decisions are given for each alternative. For the Proposed Plan, consideration was given to establishing a primary transportation network and providing access to recreation destinations, and within this context, considering some washes for the transportation network. Chapter 4.12 describes the cumulative affects desert-wide from designation of routes. In designating routes no distinction is made for class of vehicle, as there are few, if any, vehicle-type conflicts in the Planning Area. Adaptive management is part of land use planning and plan change. Changes to route and area designations can occur based upon local and regional desert tortoise conservation and uses trends and changes.

PC 76: The Final EIS should not show bias towards motorized recreation in desert washes, which should be considered as desert watersheds.

PC 352: The Proposed Plan should allow recreational activity in desert washes.

Response: If motorized vehicle use of a wash damages natural features (e.g., destroys vegetation, disturbs the integrity of wash banks, or erodes soil to an unacceptable degree), BLM would not view that wash as a route of travel. A species of concern must not necessarily be documented as occurring in specific washes in order to support the closure of those specific washes to motorized vehicles. See discussion in Chapter 4 under Impacts to Special Status Animals for Routes of Travel Designations, especially for the No Action Alternative, 4.9.1. In the case of the two desert tortoise subregions, routes that did not meet certain thresholds were closed, since protection of desert tortoise habitat was paramount. In other areas of the Northern and Eastern Mojave Desert planning area, route closures and limitations through application of the 43 CFR 8342.1 criteria could lead to different conclusions, based on a different resource base, uses and conflicts. The planning process will establish the specific network for each area, and BLM encourages you to provide specific public input as the best opportunity to ensure a network that continues to meet your recreational needs. See Appendix VI of the CDCA Plan (1980) for the accepted definition of a “wash”, and the FEIS (Appendix Q, Route Designation Methodology, Sec. 2.3 Definitions) for BLM’s view of “navigability”.

PC 77: The BLM should consider permanently retiring select grazing allotments within the desert environment.

PC 95: The BLM should consider retirement of Kessler Springs triangle and retention of Valley Wells, as they are both critical to desert tortoise habitat.

PC 134: The BLM should allow third party acquisitions with permanent retirement, in particular where lands border the National Park Service.

PC 217: The BLM should protect the desert tortoise by permanently retiring the Pahrump, Valley View, Valley Wells, and Horsethief Springs Allotment, and the BLM portion of Kessler Springs and Hunter Mountain, from grazing.

PC 242: The BLM should phase out grazing allotments to reduce impacts to wildlife and habitat.

PC 375: The Final EIS should include a provision that facilitates voluntary relinquishment and retirement of grazing allotments.

PC 376: The BLM should support any request to permanently retire allotments.

PC 377: The BLM should work with the National Park Service to acquire and permanently retire cattle grazing permits from willing sellers.

Response: The grazing of livestock on BLM-administered lands is governed and administered under numerous laws, regulations, policies, land use plans, and activity plans. The NPS does not share the same set of governing directions. There are nine grazing allotments where BLM and NPS share or have shared grazing administration between Ridgecrest Field Office and Death Valley National Park, and Needles Field Office and Mojave National Preserve that include portions of the NEMO planning area.

The Proposed Plan provides for voluntary relinquishment of grazing leases inside desert wildlife management areas (DWMAs) where desert tortoise recovery is emphasized. Significant changes to grazing management, such as the one being proposed, occur and have occurred through land use plans where public involvement is required. Discontinuation of use or modification of a grazing lease is a land use plan decision that cannot be circumvented by BLM management.

Separate from the Nemo planning effort, Granite Mountain, Kessler Springs, and Lanfair Valley Allotments were analyzed for potential cancellation in the 1999 Proposed Plan and Decision Record. This analysis was prompted by the NPS canceling or proposing to cancel Granite Mountain, Kessler Springs, and Lanfair Valley Allotments inside the Mojave National Preserve. Analysis demonstrated that Kessler Springs Allotment was found to be a manageable grazing unit without the NPS-administered portion while Lanfair Valley and Granite Mountain Allotments were not. Shortly, after the decision record for the environmental assessment was signed, Granite Mountain and Lanfair Valley Allotments were retired at the lessee's request.

Under the Proposed Plan, the lessees for Valley Wells, Jean Lake (includes lands and is managed by Las Vegas FO, BLM), Kessler Springs, and Valley View Allotments would be afforded the same opportunity to voluntarily relinquish the lease as did the lessees for Granite Mountain and Lanfair Valley Allotments. However, unlike Granite Mountain and Lanfair Valley Allotments lack of manageability for grazing use, relinquishment of the four allotments would devote these lands to desert tortoise conservation and recovery. Upon written receipt of relinquishment from lessee, the manager would delete grazing use and other authorizations for the allotment with a grazing decision. No timetable has been established to relinquish grazing leases since it is voluntary by the owner as it is on NPS lands. As of the publish date of the MNP GMP (April, 2002), the Kessler Springs allotment is the only of these remaining allotments which has been voluntarily relinquished on NPS lands.

All but one of the four allotments has corresponding portions found inside the Mojave National Preserve. Crescent Peak and Clark Mountain Allotments are jointly administered by BLM and NPS and they are located nearby but are not within the Proposed Plan DWMA and lessees for these allotments would not be afforded the opportunity to relinquish their lease. Grazing activities for these two allotments would continue under current authorities and biological opinions. Last Chance, Lacey-Cactus-McCloud, Hunter Mountain, and Eureka Valley Allotments are jointly administered by BLM-Ridgecrest Field Office and NPS-Death Valley National Park, but are not within desert tortoise habitat and discontinuation of grazing use on the allotments is not part of the Proposed Plan.

Clark Mountain, Horsethief Springs, and Pahrump Allotments have desert tortoise habitat within their boundaries. The FWS determined that these areas were not critical habitat. The BLM would manage these areas of habitat for the continued existence of desert tortoises. Other areas critical to the survival and recovery of the desert tortoise are consolidated in DWMA and would be managed as ACECs, with changes to grazing management as summarized above. Consultation with the FWS would also occur for grazing activities that may affect the desert tortoise in these three allotments, in the context of the overall strategy for desert tortoise conservation and recovery in the planning area, and management is not proposed to change substantially from existing strategies to address desert tortoise conservation and recovery. .

PC 78: The BLM should restrict car camping to previously disturbed sites to protect critical habitat.

PC 328: The Proposed Plan should not include a 15 foot single-width road standard for pull-off parking and camping in ACECs and DWMA.

PC 354: The Proposed Plan should establish a standard of allowing camping only on previously disturbed areas. See Ch2-21, 2.2.4.3. Camping within 50 feet of routes within DWMA is recommended. Will this disturb the vegetation? Signs and public education are recommended. USNPS suggests 50 feet as the allowable maximum limit from routes for camping and parking.

Response: Camping is only allowed on previously disturbed areas under all alternatives—Chapter 2 has been clarified. The currently existing and Proposed Plan provides for the conservation of sensitive elements including the restriction of vehicles to designated routes and major navigable washes within DWMA. The basis of conservation of biodiversity does not necessarily require pristine environments (i.e., designated wilderness) but does consider arrays and complexities of managed uses. The 100-foot limit for stopping, parking, and vehicle camping in sensitive areas such as Areas of Critical Environmental Concern was established after considerable analysis through the California Desert Conservation Area Plan. Elsewhere in the planning area, the limit is 300 feet (see Chapter 2, Sec. 2.10.1, Motorized-Vehicle Access/Routes of Travel Designations). The only change prescribed under the Proposed Plan is that limits for these activities be measured from the centerline of a route (versus measurements from a route's edge) to establish consistency in expressing the limitations (see Chapter 2, Sec. 2.10.5).

For routes twelve feet wide, for example, the area for vehicle camping to each side of the route is reduced by six feet; for routes sixteen feet wide, by eight feet; and so forth. The effects of adjusting the existing 100 foot limits to centerline instead of edge of routes in sensitive areas are minor.

Vehicle camping alongside routes with few restrictions as to location (except as regards distance from a route) has long been a recreational opportunity unique to public lands. Over the years, hundreds of vehicle campsites (generally recognized by the presence of fire rings and evidence of vehicular access) have been established throughout the California desert (pers. comm., BLM staff). Although it is not known how many campsites have been established beyond the 100- and 300-foot limits, observations by BLM staff support a conclusion that such occurrences are not wide-ranging in the NEMO Planning Area. It is probably reflective of the amount of overall use of the area.

Restricting car camping to within 15 feet of route would result in certain intensively used areas, which could potentially expand. Route edges would become less distinct. Discriminated camping tends to distribute use and often results in use of existing disturbed areas, consistent with the guidance.

Identifying established camping areas in Areas of Critical Environmental Concern would do little to enhance opportunities for vehicle camping. The BLM is fulfilling a unique need with the route-side camping opportunity it currently provides. ACECs may also designate campgrounds to protect sensitive areas, as appropriate. These should be designated to supplement other camping opportunities or replace them in localized areas where specific resources provide evidence of impacts, or use is high enough to support the campground. The use levels throughout NEMO are generally low and well dispersed, and do not justify additional camping areas. If use and associated impacts to habitat increase, the issue can be further evaluated, consistent with the ACEC provisions for the DWMA..

PC 79: The BLM should address the issue of nuclear waste dumping within NEMO.

Response: BLM does not intend to authorize disposal of nuclear wastes on public lands within the NEMO planning area. It would not be consistent with current BLM policies. That is why the issue is not addressed in the Proposed Plan.

Molycorp's P-16 pond is located on private land and is not regulated by BLM. The wells and the water pipeline on Ivanpah Dry Lake leading to Molycorp's facilities at Mountain pass were approved in 1955. The water from these wells is not of drinking water quality. Molycorp began processing bastnasite, a source of rare earths (lanthanides), in 1977. A wastewater pipeline and disposal of liquid wastes was not permitted by BLM until January 30, 1980. The California Water Quality Control Board, Lahontan Region (RWQCB) had issued waste discharge requirements on January 10, 1980. Those waste discharge requirements did not recognize that the wastes would be radioactive in nature. The wastes were handled by the RWQCB as Class B Mining Wastes.

A 1981 Plan of Operations submitted to BLM also did not mention radioactive wastes. A Revised Plan of Operations, submitted in 1986, also did not mention radioactive wastes. This plan resulted in a permit for the pipeline and evaporation ponds in the private lands on Ivanpah Dry Lake. In November 1994, BLM and Molycorp completed a land exchange for the remaining 879.93 acres of public land within Molycorp's facility. This resulted in the permitting authority for the mine residing completely with San Bernardino County. It was not until several unauthorized releases from that pipeline in 1996 that BLM, the National Park Service and State and County regulatory agencies recognized the nature of the wastes and ordered a cleanup of the released materials. BLM assisted the California Department of Fish and Game with the service of a Search Warrant on Molycorp (September 1996). In November 1998, Molycorp decided to cease using the pipeline and Ivanpah Evaporation Ponds, on land patented to Molycorp in 1988. They planned to dispose of waste materials onsite or at permitted facilities offsite (not on public lands). This left BLM with no regulatory authority over Molycorp's waste disposal practices. The RWQCB is responsible for regulating discharges. More recent developments relating to Molycorp's waste disposal practices were not under the authority of BLM.

The plumes from the P-16 pond were recognized in 1987. The RWQCB Order regulating them was issued in May 1994. Although there were radiological issues with some of Molycorp's wastes stored onsite in 1993 and with the wastes stored in some of their onsite storage ponds, Molycorp's applications to BLM and to the RWQCB prior to 1996 characterized their wastes as Anon-hazardous. Any BLM permits issued prior to that time were issued without the knowledge of the true nature of the wastes. In September 1993, BLM wrote to the RWQCB stating our unwillingness to be listed as co-discharger on their waste discharge permit. The aquifer potentially affected by the Ivanpah evaporation ponds is not of drinking water quality. In addition, there has been a long-standing dispute among agencies including BLM, then U.S. Environmental Protection Agency, the California Department of Toxic Substances Control and the RWQCB over whether Molycorp's wastes are exempt from regulation under the Bevill amendment.

At BLM's request, the U.S. Public Health Service prepared a report (1993) which addressed the potential environmental hazards in and around BLM's Resident Ranger housing at Mountain Pass, as well as the California Highway Patrol (CHP) R&PP lease and the CalTrans facility. As a result of this report, BLM discontinued using the site housing for their employee and his family. The November 1996 Draft Environmental Impact Report, prepared by the County, addresses health risks associated with the elementary school and the CHP facility. In February 1997, BLM met with representatives of the CHP and Caltrans to discuss the potential health risks associated with their facilities at Mountain Pass. An April 1997 follow-up letter encouraged them to consider relocating their facilities and stated BLM would be happy to work with them in identifying alternative sites. In January 1998, agencies involved in the cleanup of Molycorp's pipeline releases met with the California Department of Health Services, Environmental Health Investigations Branch - EHIB and U.S. Public Health Service, Agency for Toxic Substances and Disease Registry - ATSDR to discuss health issues and a draft risk assessment which addressed health issues at Mountain Pass. This became a component of the Environmental Impact Report prepared by the County for the Molycorp's mine expansion proposal.

PC 81: The BLM should address daily cover on landfills to deal with raven populations.

PC 214: The BLM should analyze and address landfills that attract ravens as a potential threat the desert tortoise.

Response: In San Bernardino County, in the vicinity of critical and Category I desert tortoise habitat, local dumpsites are being closed in favor of regional landfills. Among the local dumps being closed and rehabilitated are dumps at Nipton, Goffs, Mountain Pass, and Charleston View within the Planning Area, and Essex, Vidal, Vidal Junction, Amboy, and Chambliss immediately south of the Planning Area. Further north in Inyo County, the Shoshone landfill is currently only accepting construction waste from Caltrans.

Regional landfills are operated with daily covers, and most are effective in reducing raven use (William Boarman, raven ecologist with USGS, pers. comm.). Transfer stations have been established at some locations to provide local deposition of trash.

The California Integrated Waste Management Board (IWMB) regulates the management of landfills. The counties conduct inspections with IWMB oversight.

PC 82: The Proposed Plan should require significant reduction of bat populations to restore balance to the ecology of the desert environment.

Response: Altenbach and Pierson (1995, p. 9) addressed the question of why bats cannot return to roosts used before mines were available and why we should maintain "artificial" mine roosts. They respond that much of the original habitat is no longer available. Recreational caving and commercialization have driven bats from many natural caves. Natural caves have been lost through modification (especially from mining), flooding, and quarrying. Many apparently abandoned mines were founded upon natural caves. Also, large diameter trees used as roosts have been eliminated in many areas. Even in the southwestern deserts, trees in local mountains have been harvested for use in nearby mining and railroad construction. Urban encroachment has added to the loss of habitat. In many areas, abandoned mines provide the only remaining viable roosting, nursery, or hibernating habitat. Contrary to the implication in the comment, bat abundance and diversity have greatly decreased nationwide and regionally.

PC 83: The Final EIS should detail the Public Land Health Standards proposed for the NEMO planning area.

Response: A standard is an expression of the level of physical and biological condition or degree of function required for healthy, sustainable rangelands. On the other hand, 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. Guidelines can vary in degree of management direction and emphasis or may not be needed at all. Proposed Plan Standards and Guidelines can be found in Chapter 2, Section 2.1.2.

The discussion for standards and guidelines starts under section 2.1 of the FEIS. The grazing regulations under Title 43 Code of Federal Regulations Subpart 4180 direct the State Director to formulate State or regional standards, but until those regional standards take effect the National Fallback Standards listed under 43 CFR 4180.2(f)(1) are to be used. The four existing fallback standards have been in effect for many years on grazing allotments in the planning area and are part of the No Action Alternative of the FEIS.

There are ongoing health assessments of public land to qualitatively review resource conditions. The assessment team composed of two or more BLM resource staff and members of the public examine field conditions and their qualitative appraisal of conditions establishes whether standards have or have not been met. Assuming standards were not met, for example, for riparian/wetland and stream function, BLM management then may choose to monitor resource conditions or change management or both. This process is designed to focus BLM's limited staff and resources to maintaining healthy lands or identifying areas that may need change.

Land Designations

PC 84: The BLM should develop sensible and objective criteria for special area protections.

Response: The BLM has developed criteria for special area protections and these are built primarily using the conservation and recovery needs of species and their underlying habitat needs. Issues that make a difference in the future of the species form the basis of the criteria. Other important factors that are considered include the level of conflicts, whether or not we have control over the issue (e.g., the weather) or the land base, and the potential for effecting positive change.

PC 85: The Final EIS should include detailed maps depicting the segments of streams considered for Wild and Scenic River eligibility.

Response: These maps have been added in the FEIS; Figure 15a, 15b, and 15c, for the Amargosa, Surprise Canyon Creek, and Cottonwood Creek segments, respectively. As for defining the segments start and endpoints, Appendix O, Appendix T, and Appendix S details information on each stream, including the tentatively eligible-segment(s) and its classification.

PC 86: The Proposed Plan should address special designation of the Silurian Hills as an Area of Critical Environmental Concern.

Response: The bat habitat features in the Silurian Hills (e.g., caves, abandoned mines, buildings, and other roost sites) and their abundance are described in section 1.3.5. For ACEC designation, an area must meet criteria for both “relevance” and “importance.” Relevance refers to whether the resource is one of the kinds of resources included in the definition of ACECs in the Federal Land Policy and Management Act. The Silurian Hills would qualify for relevance. A resource can be found to be “important” if it a) has special distinctiveness or cause for concern and b) has more-than-local significance. The bat resources in the Silurian Hills do not meet the importance standard because they are only of local significance.

PC 87: The Final EIS should include a comprehensive management plan for the Grimshaw Lake Natural Area.

Response: A comprehensive management plan for the Grimshaw Lake Area of Critical Environmental Concern exists. It was completed in June 1983. The Amargosa River Watershed ACEC proposed in the Northern and Eastern Mojave plan would evaluate the measures of the Grimshaw Lake ACEC and update them as appropriate, in the context of the additional issues and larger landscape being addressed in this planning effort. This would take place within three years of the signing of the Record of Decision.

PC 89: The Proposed Plan should designate the Greenwater Canyon Road as Multiple Use.

PC 91: The BLM should classify part of Greenwater Valley as multiple-use class Limited to protect Desert Tortoise habitat.

PC 411: The BLM should protect cultural resources by retaining Area of Critical Environmental Concern status for the Greenwater Canyon area adjacent to Death Valley National Park.

Response: Congress has already released these lands from wilderness consideration, and BLM is currently addressing the Multiple Use Class of these lands. National Park Service lands are outside the scope of this document, and have been addressed in the Death Valley National Park General Management Plan. The Record of Decision was released in late 2001, and the General Management Plan was published and made available to the public in May, 2002.

Eliminating the Greenwater Canyon ACEC designation recognizes that most of the former ACEC, as well as the significant resource values, have been incorporated into Death Valley National Park with the transfer of lands authorized by the California Desert Protection Act. The remaining resources will still continue to be managed as MUC "L" lands, which would provide adequate protection and preservation to sensitive cultural resources while recognizing that the area no longer meets both the "importance" and the "relevance" standards for an ACEC within the CDCA.

PC 92: The Final EIS should delineate specific route(s) of vehicular travel to the Dumont Dunes area while protecting natural resources and habitat within the river and riparian corridor.

Response: Routes of travel have been designated through the land use planning process for many routes in the Central Amargosa Canyon. These are listed in the Amargosa Canyon and Grimshaw Lake Natural Area ACEC Plans. Under the Proposed Plan, additional route designation for the Amargosa watershed area would occur subsequent to the Record of Decision for the Northern and Eastern Mojave planning effort, and no later than June, 2004. Access to the Dumont Dunes OHV Open Area will be a major consideration in that effort, including Sperry Wash, the northeast access to Dumont Dunes.

PC 93: The Proposed Plan should allow public use of Rice Valley Dunes, Ford Dry Lake, and Dumont Dunes.

Response: There are no proposals or alternatives to close the Dumont Dunes OHV Open Area in the Northern and Eastern Mojave Plan. There are also no other current proposals considering any closure of the Dumont Dunes OHV Area. The other two areas are located in the Northern and Eastern Colorado Planning Area and you are referred to the NECO planning effort, which is also currently underway.

PC 94: The BLM should consider fencing and maintenance of the Last Chance Allotment if it is contiguous with the Mojave National Preserve.

Response: The Last Chance Allotment is not contiguous with the Mojave National Preserve. However, the allotment is contiguous with the Death Valley National Park. The BLM and NPS have dual administration of this as an allotment as a result of the passage of the California Desert Protection Act of 1994. The lessee for the allotment has not grazed cattle in the last few years due to poor forage conditions and financial concerns. After these concerns are resolved, the cattle would graze the allotment. When grazing use does occur, cattle need to graze all of the allotment not just the BLM or the NPS portion. Fencing the boundary is not necessary and would hinder grazing management actions on BLM and NPS portions of the allotment.

PC 96: The BLM should clarify designated land areas within NEMO.

Response: Many places are signed and many are not. See Appendix A for discussion of signing strategy in DWMA's. The Bureau suggests the purchase of maps to assist users driving in the correct places. The Bureau works with a variety of media (e.g., wayside exhibits, press releases, AAA maps, brochures, flyers, web pages) to help assure that the changes to public lands are provided to the public. It is not the BLM's intention to have so many signs that the public land touring experience and/or the opportunities for backcountry exploration is substantially affected.

Wild and Scenic Rivers

PC 97: The BLM should evaluate the impacts of water diversion at Novak Camp.

PC 101: The Proposed Plan for the Northern and Eastern Mojave planning area should classify the Amargosa River, Surprise Canyon and Cottonwood Creek as eligible for Wild and Scenic River designation.

PC 104: The Final EIS should include a suitability study of the Amargosa River, Surprise Canyon, and lower Cottonwood Creek.

Response: The NEMO Plan had determined 6 segments eligible on these 3 rivers for consideration as part of the Wild and Scenic Rivers System. The tentative schedule for Suitability Analyses and accompanying Environmental Impact Statements will be included with the record of decision for the NEMO planning effort. Water diversion is an issue that would be appropriate to consider during the suitability phase. Timing may be based on available funds, the levels of controversy and types of issues, other resource availability, and opportunities to do joint planning and/or environmental impact statement analysis with related efforts.

PC 99: The BLM should address how Wild and Scenic River designations will impact river crossings.

Response: BLM's Sperry Wash project includes a portion of the Amargosa River section from Sperry Siding to State Highway 127. BLM has determined that that section of the river is eligible for inclusion in the National Wild & Scenic River System (NWSRS), and recommended that it be classified "recreational". [See NEMO Appendix O, p. O-5].

The Wild & Scenic Rivers Act (WSR) defines "recreational" rivers as "those rivers or sections of rivers that are readily accessible by road or railroad, that may have some development along their shorelines, that may have undergone some development along their shorelines, and that may have undergone some impoundment or diversion in the past."

For the Dumont Dunes access road, BLM currently views the Amargosa River crossing (existing concrete ford) as a shoreline development of the past. As for the other crossings upstream, BLM does not expect management changes grounded in the WSR classification, though these may arise from another source (e.g., maintenance of riparian/wetland standards).

PC 100: The BLM should consider water supply and power generation proposals when defining Wild and Scenic River recommendations for the Panamint Valley.

Response: This issue will be forwarded to the team that is addressing wild and scenic river suitability, for inclusion in scoping comments. The wild and scenic river suitability process would first determine if a particular segment meets the other criteria for inclusion in the National Wild and Scenic Rivers System. If it does so and is regionally significant, the suitability analysis would determine, with public input, wild and scenic classification. Classification reflects existing conditions. It would also consider reasonably foreseeable conditions or developments. Information that a future proposal is reasonably foreseeable would be considered in that process. The Bureau of Land Management is not the agency to apply to for application for one or more reservoirs. The State of California (Mojave Water Agency) is responsible for overseeing water rights in the State, and should be your first point of contact.

PC 102: The Final EIS should delineate proposed river corridors for all eligible streams, and prioritize private lands for acquisition, exchanges, or scenic easement purchase.

Response: For information on proposed river corridors for all eligible streams, see Appendices “O”, “S” and “T”, as updated in the Final EIS and Figures 15a, 15b, and 15c of Chapter 8. Prioritization of private land holdings changes would be expected to depend on the suitability determinations and would be coordinated with potentially affected interests, local jurisdictions, and other interested publics [See FEIS, Section 2.12.5, which provides that suitability determinations for these segments would be subsequently analyzed and completed in an EIS format.].

PC 103: The Final EIS should clarify the Amargosa River descriptions to better define segment starts and endpoints and to provide appropriate and accurate segment classification.

Response: See Figure 15a in Chapter 8 for a map. As for defining the segments start and endpoints, see Appendix O – *Wild and Scenic Rivers Eligibility Report For The Amargosa River* in the FEIS for additional detail about each segment and its classification.

PC 105: The BLM should eliminate motor vehicle use within the riparian area of Amargosa River.

Response: The central Amargosa Canyon has been closed to motorized vehicular use since 1974. Route designations for the Amargosa Canyon area within the Amargosa Natural Area Area of Critical Environmental Concern were designated in 1983, with the development of the ACEC plan. Other routes that include portions of the Amargosa Canyon, including Sperry Wash to the south of the Amargosa ACEC, are currently managed under the existing routes network.

Routes will be designated for this area within the next three years. At the time of route designation for this area, this issue will be addressed. You are encouraged to:

1. Participate in the route designation process for the Amargosa watershed
2. Identify specific routes
3. Indicate why you think this is the action that should be taken

PC 106: The BLM should reconsider the proposed Recreations classification for the portion of the Amargosa River Segment 3 downstream of the Dumont Dunes OHV Area access road.

Response: Appendix O of the NEMO DEIS identifies tentative classification for segments of the Amargosa River determined eligible for inclusion in the NWSRS. These tentative boundaries have been identified in accordance with BLM Manual 8351.31(A) Basis for Determination. The BLM Manual provides for eligibility determinations and tentative segment classifications no later than the DEIS. Consideration of alternative combinations of eligibility designations/classifications would be done through EIS alternatives prepared during the Suitability Analysis, which BLM has deferred to a later planning process; see 8351.33(C). This BLM Manual section 8351.33(C) also specifies that a river must be afforded the protection at the tentative classification level it was given when determined eligible, even if another classification is considered as an alternative in the RMP during suitability. This would be the case until the Record of Decision for the suitability analysis.

There are minor differences between the length of the segments in the NEMO DEIS and the length of the segments in the NEMO FEIS. These changes are a result of improved accuracy with GIS software and measurements. Initial segment lengths were determined by drawing a line parallel to (and .5 mile from) the river using GIS software. The lines were then measured with GIS measuring tool. The new segment lengths were computed by measuring the actual hydrology shapefile.

PC 107: The BLM should acquire inholdings and conservation easements along the Amargosa River to protect the riparian corridor.

Response: The preferred alternative calls for the BLM to acquire the State and private lands inside the proposed Amargosa River Area of Environmental Concern (ACEC).

PC 108: The BLM should consider a separate EIS for Wild and Scenic River designation of the Surprise Canyon area.

Response: The NEMO Management Plan/DEIS identifies Surprise Canyon as being eligible for inclusion in the National Wild & Scenic River System. The determination of whether or not the segment is suitable for designation will be made at a later date through a separate EIS. This environmental document will assess whether or not Surprise Canyon is suitable for inclusion in the National Wild and Scenic River System and will also examine the other potentially eligible streams in the region to determine if any of these are eligible/suitable and address regional significance. The issue of motorized access through Surprise Canyon is currently being examined through a completely separate EIS.

PC 109: The Proposed Plan should classify the upper section of Surprise Canyon as Wild instead of Scenic.

Response: BLM Manual provides for eligibility determinations and tentative segment classifications no later than the DEIS. Consideration of alternative combinations of eligibility designations/classifications would be done through EIS alternatives prepared during the Suitability Analysis, which BLM has deferred to a later planning process; see 8351.33(C). This BLM Manual section 8351.33(C) also specifies that a river must be afforded the protection at the tentative classification level it was given when determined eligible, even if another classification is considered as an alternative in the RMP during suitability. This would be the case until the Record of Decision for the suitability analysis. When the EIS for the suitability analysis begins, the public will be given the opportunity to participate, during public scoping and throughout the analytical process. BLM encourages meaningful public input in the planning process.

PC 110: The Proposed Plan should permanently close Surprise Canyon to vehicle traffic to protect sensitive aquatic habitat.

Response: The route through Surprise Canyon from Chris Wicht Camp to the boundary of Death Valley National Park will remain closed to motorized vehicle use under the current interim lawsuit closure until a final determination on route designation is made. The interim closure was not made through the NEMO plan, and it will be resolved separately. The final route determination for Surprise Canyon will be established through a separate EIS that will examine a range of alternatives for motorized access in the Canyon and assess the environmental impacts of these options. This EIS and the subsequent Record of Decision will formally designate this route as open, limited or closed to motorized vehicle use.

PC 111: The BLM should evaluate the impacts of water diversion on aquatic and riparian habitat in Surprise Canyon.

Response: The water diversion at Chris Wicht Camp in Surprise Canyon is currently being examined to determine if the diversion exceeds allowable levels provided for under current permits and water rights.

PC 112: The BLM should conduct a scientific watershed analysis on Surprise Canyon.

Response: A more thorough watershed analysis for Surprise Canyon will be prepared when the suitability determination is made through another Environmental Impact Statement to be prepared at a future date.

PC 113: The Proposed Plan should classify lower Cottonwood Creek as Scenic.

Response: The recreational classification for lower Cottonwood Creek was made because of the close proximity of the road to the creek for most of this segment's run.

PC 114: The BLM should clarify the end point of lower Cottonwood Creek and mark such location.

Response: The eastern boundary of the lower Cottonwood Creek segment will be mapped in preparation for the EIS to be prepared to determine if this creek is suitable for inclusion in the National Wild & Scenic River System.

PC 115: The BLM should assess vehicular route crossings in lower Cottonwood Creek to avoid adverse impacts to the environment.

Response: Vehicle crossings of lower Cottonwood Creek will be examined in the future to determine if these routes are causing excessive erosion and sedimentation. The installation of hardened stream crossings will be considered in the future if warranted.

Wilderness, Recommended Wilderness, and Released Wilderness

PC 116: The Proposed Plan should adhere to the California Wilderness Act pertaining to wilderness designations within NEMO planning area.

Response: The California Wilderness Act of 1984 [P. L. 98 – 425] was responsive to the Forest Service Roadless Area Review and Evaluation [RARE] II effort. That statute and the lawsuit cited above refer to lands administered by the Secretary of Agriculture through the Forest Service. As such, they are not relevant to these land use plans being prepared by the Bureau of Land Management.

PC 117: The BLM should implement a management plan regarding the wilderness portion of the NEMO planning area.

Response: The issue of wilderness management plans was not identified as a significant issue in scoping and so it is not appropriate to prepare them as part of this Proposed Plan. The preparation of wilderness management plans is a function of issues needing resolution through planning and the availability of budget and staff resources to prepare such plans. Currently, BLM only has funding to manage the wilderness areas to the required regulatory, manual, and Wilderness Implementation Schedule standards.

PC 118: The BLM should not create or expand wilderness areas or de facto wilderness areas.

Response: Wilderness areas are managed so that mineral development, commercial enterprise, permanent roads, structures and the use of mechanical transport and motorized equipment are generally prohibited by law. There is nothing proposed in this Proposed Plan for which management is essentially equivalent to wilderness. If recommendations were formulated for designation of areas as wilderness, then they would be explicitly so identified in the Notice of Intent to prepare an EIS and this document. Also, a legislative EIS would be prepared.

PC 119: The BLM should reduce or eliminate grazing in wilderness if ecosystems are being damaged.

Response: Grazing established prior to designation of wilderness shall be permitted to continue subject to reasonable regulations. The standards to reduce grazing in order to protect ecosystems are identical in or out of wilderness. The analysis of projects to mitigate impacts of grazing on ecosystems in wilderness will be analyzed in site-specific environmental assessments as provided for by the Proposed Plan. Grazing activities found to be impacting wilderness values would be modified or eliminated.

PC 120: The Proposed Plan should protect released Wilderness Study Areas.

PC 121: The Proposed Plan should classify all lands released from Wilderness Study Areas as Limited Use.

PC 122: The BLM should return released Wilderness Study Areas to full multiple use status.

PC 356: The Final EIS should ensure protection of released wilderness study areas.

Response: Under the California Desert Protection Act (CDPA,1994), WSA public lands not designated as wilderness (an aggregate total estimated at 475,000 acres) have been returned to BLM (“released”). Under current CDCA management, whether or not BLM recommended these lands as “suitable” or “not suitable” for wilderness designation, BLM no longer is to view these lands as being subject to FLPMA Section 603 review. [CDPA, Section 104.(a)]. WSAs BLM recommended as suitable are to be the subject of further MUC decisions, and, until those decisions, BLM is to manage them under MUC L guidelines. [CDCA Plan, 1980, March 1999 reprint, p.49; Proposed Plan #53 (1982)] Determining the MUC of non-suitable lands is also considered in NEMO, since for approximately half of all released parcels some change of circumstance has occurred since 1983.

Under the Proposed Plan, BLM would classify released lands consistent with existing CDCA Plan guidance, except when surrounding MUC have changed and/or new information is provided to warrant a change. With reference to FEIS Table 2-10, for forty-one (41) parcels of released land, comparing No Action to the Proposed Plan, BLM would change five areas from Multiple Use Class Moderate to Limited, four areas from M & L to L, and two areas from L to M & L. Other areas would be the same for both alternatives. Both MUC Moderate and Limited provide for multiple uses within the CDCA (see definitions p. 13 and Table 1-Multiple Use Guidelines, pp. 15-20, in 1999 reprint of CDCA Plan). The Proposed Plan provides for the protection of sensitive resources (e.g. critical desert tortoise habitat) and/or uses where information has improved since 1983 at the time of the WSA inventory and original MUC classifications.

Desert Wildlife Management Areas

PC 123: The Proposed Plan should expand Desert Wildlife Management Areas within NEMO so that 1) the DWMA are 1,000 square miles as prescribed by the Recovery Plan, and 2) the DWMA include all desert tortoise critical habitat.

Response: The three DWMA units in the Proposed Plan are discussed in Appendix A, sections A.1.2.1 (Piute Valley Unit), A.1.2.2 (Ivanpah Valley Unit), and A.1.2.3 (Shadow Valley Unit). The these three BLM DWMA (see Chapter 8, Figure 6.e) would include all desert tortoise critical habitat except the area west of Bull Spring Wash in the Shadow Valley Unit. That area was excluded because it has numerous routes and disturbance from historic mining.

BLM-managed public lands within the planning area do not include sufficient high-quality habitat suitably to meet minimum DWMA requirements, taken in isolation. Section A.1.3 gives a regional perspective for the three proposed units. Including adjacent critical habitat within the Mojave National Preserve, the Ivanpah Valley Unit and Shadow Valley Unit combine to form a DWMA of about 620,000 acres. This is near the minimum size of 640,000 acres recommended in the Desert Tortoise Recovery Plan. Including contiguous critical habitat within the Mojave National Preserve and the Piute-El Dorado ACEC (DWMA) in Nevada, the Piute Valley Unit combines to form a DWMA of about 730,000 acres. This exceeds the minimum acreage requirement for a DWMA by 90,000 acres.

The only other area considered for inclusion for DWMA designation was the Northern Ivanpah Valley Unit. It was not included because it is a relatively small area (29,110 acres) that is isolated from other tortoise populations by Ivanpah Dry Lake, Interstate 15, and casino development at Primm. Furthermore, adjacent areas in Nevada were not designated DWMA in Nevada, and the Unit was not designated critical habitat.

PC 125: The BLM should reevaluate the policy to allow surface disturbing project activities only between November 1 and March 1 within Desert Wildlife Management Areas.

Response: Measure (1) in section A.2.1 indicates that in tortoise ACECs (i.e., DWMA), “ground-disturbing activities shall normally be authorized only between November 1 and March 1.” It adds that if they “must be authorized outside this window, an on-site biological monitor shall be required...” This is consistent with mitigation measures commonly applied in desert tortoise habitat at the present time. It does not constitute a prohibition on activities from March 1 to November 1.

PC 126: The BLM should work with the Mojave National Preserve on adjoining Desert Wildlife Management Area.

Response: The BLM will continue to work with the Mojave National Preserve on issues of common concern in the management of tortoise habitat. Among these issues are livestock grazing, burro herd management, utility construction and maintenance, raven control, tortoise diseases, monitoring of tortoise populations, and other project activities. The units proposed by BLM as ACECs can only meet the DWMA goal (and Category I goal) of maintaining viable tortoise populations if they are managed successfully together with adjacent units on the Mojave National Preserve and on BLM lands in Nevada. Section A.1.3 in Appendix A discusses this further.

PC 127: The BLM should fully withdraw all mining activities in Desert Wildlife Management Areas and Areas of Critical Environmental Concern.

Response: The approach taken in the proposed management for the DWMA is not to prohibit specific classes of activities (e.g., mining), but rather to limit the cumulative total of all new surface disturbances regardless of the type of activity.

Land Acquisitions and Disposals

PC 128: The Final EIS should reflect changes to the Catellus land acquisitions within the NEMO planning area.

Response: The land ownership layer for public lands is current as of May 31, 2002, and includes Phase I and II Catellus acquisitions and exchanges (See Chapter 8, Figure 1). This layer is provided to local offices by the California State Office to assure consistency. Updates from other agencies should be provided to the California State Office, 2800 Cottage Way, Suite 1834, Attn: Jeff Owyang, Mapping Sciences, Sacramento, CA, 95825-1886.

PC 129:

The BLM should not dispose of or release any public land within NEMO.

PC 130: The BLM should have legal justification before any disposal or release of public lands.

Response: The BLM has the authority under the Federal Land Policy and Management Act to dispose of public lands where it has been determined that it would be in the public interest. All actions are reviewed under the National Environmental Policy Act.

The BLM will dispose of public lands where it is in conformance with BLM's land use plans, primarily through land exchanges to block up lands for better resource management. No disposal of public lands would be allowed within an established Desert Wildlife Management Area (DWMA) under the Proposed Plan.

PC 131: The BLM should support acquiring private lands with occurrence of sensitive plant species.

Response: This proposal was not considered and evaluated in the NEMO Plan because it is beyond the scope of the proposed action as defined by the purpose and need of the EIS (see Section 1.1). It should be noted, however, that with recent acquisitions of Catellus lands, the BLM now is the land manager of the vast majority of lands in the Planning Area (see Chapter 8, Fig. 1). The next largest landowner is the State Lands Commission.

PC 132: The BLM should clarify the acquisition of private property within the NEMO planning area.

Response: All designations in the NEMO planning area are subject to valid existing rights. Land acquisitions would be on willing seller basis. The BLM has no plans on acquiring any land through condemnation.

PC 133: The BLM should collaborate with Inyo and San Bernardino Counties and affected property owners on the development of management standards for private lands, unpatented mining claims, BLM leases, and special use permits within the county.

PC 136: The BLM should collaborate with Inyo County on any release of property, including the Tecopa and Shoshone landfills.

Response: Inyo County would be a signatory to any land patent instrument. The NEMO proposal does not release (i.e., patent) any properties, but does make such a release feasible. Dialogue has been ongoing with the Inyo County planning department for several years on this issue. A patent cannot be approved until additional steps are completed. If the land is suitably zoned (the proposal now under consideration in the NEMO plan), local authorities will review it, BLM and Inyo County will complete a Land Transfer Audit report, a mineral potential report, and cultural resource report. This data will be evaluated to determine the cost/benefit analysis of transfer. If Inyo County and the BLM determine it is in their mutual interest, a R&PP patent instrument will be approved by both.

PC 135: The BLM should consider proposed land acquisitions within the NEMO area.

Response: BLM can acquire lands only if sellers are willing their land. The acres of State Lands Commission (SLC) lands in DWMAs are noted in Appendix O. The number of acres of SLC lands in Wildlife Habitat Management Areas (WHMAs) is not specified in NEMO because these lands are not proposed for acquisition. If the SLC is interested in exchanging its lands out of WHMAs, BLM would entertain such proposals, but the priority is lower than for wilderness areas, DWMAs, and other ACECs, and need is not considered compelling.

Soil, Water, and Air Quality Resources

PC 137: Most desert dirt roads in the planning area are compacted and stable with little soil erosion occurring.

Response: Continual driving over vehicle routes does cause soil compaction. Depending on the texture of the compacted soil, native plants have difficulty establishing in compacted soils. Water holding capacity in compacted soils is reduced (Brown 2001). Roads created by passage of vehicle tend to be stable when conditions are dry and dry conditions persist most of the year in the planning area. Whether wind or water creates more erosion from roads in the planning area is unknown.

Fortunately, most soils adjacent to roads provide good water infiltration due to sandy to gravelly textures. However, as roads are hardened with compaction from vehicle use, rainfall is not readily absorbed into soil on the roadbed and eventually water begins to flow downhill until exiting the road or forming a puddle. The exiting water takes with it fine soil particles and moves some of the soil contacting the watercourse. The rivulet winds its way downhill until absorbed into soil or joins another watercourse on its way to a puddle. Small channels are cut in the low road berm as water exits the road. The collection of water on the road forms puddles that drivers may enjoy or avoid hitting with vehicles. Impacts to the road occur either way when the width of the road increases as drivers swerve off road to avoid getting stuck in a puddle or the road depth (channel) increases when the vehicle is driven so as to hit a puddle with sufficient force to splash water and mud off the road. This disturbed soil would be susceptible to wind erosion once dried.

PC 138: The Final EIS should evaluate soil erosion and air quality impacts caused by concentrating vehicle use to a fewer number of roads.

Response: Alternative 1 (No Action) would close and limit almost 6% of routes, including routes limited to non-motorized use onto Ivanpah Dry Lakebed of the approximately 850 miles of routes in Category 1 desert tortoise habitat (desert tortoise subregions). Alternative 2 would close or limit about 26% of the routes in Category I habitat, including DWMA's under this alternative. Alternatives 3, 4, and 5 would close or limit about 19 %, 18 % and 19 %, successively (refer to Chapter 4, Section 4.9 for additional information). The Proposed Plan closure of 11% of routes would not cause substantial shift in vehicle use to routes that remain open. There are 354,300 acres in desert tortoise subregions and roughly every 505 acres there is a mile of road that can be used. Even with the 19% reduction in miles of routes in the Proposed Plan, due to terrain in the planning area most routes are not spread equally over subregions, including proposed DWMA's, and a portion of the routes end up at the same place or nearby (see Figures 4.a-4.h. of Chapter 8, including the fold-out map at the back of Volume 1 in the-Final Plan/FEIS). Routes may be closed based on the following considerations; plant and animal species, cultural resources, erosion potential, wildlife water source, and redundant transportation network, or a combination of these factors, depending on the alternative (see Chapter 4, Section 4.9). Soil and air impacts are discussed in this section.

PC 140: The Final EIS should include an objective or numerical landmark to facilitate soil infiltration and permeability rate determinations.

Response: The incorporation of additional values for a type or series of soil would be premature since many soils in the planning area are not known. Some of the rangeland health assessments completed during 1999 within the planning area utilized permeability and infiltration tests. These tests were inconclusive since knowledge or data on the type of soil tested was lacking. Different parameters for soils must be investigated and determined to effectively inventory soils and this process takes many years for an area as large as the planning area. Soil inventory is underway within high priority locations of the planning area, but a systematic inventory of the planning area is not occurring.

PC 143: The Final EIS should provide a rationale for closing dry lakebeds to motorized access.

Response: The Proposed Plan does not close any dry lakebeds or make changes to the CDCA Plan designations for these areas in the planning area. The lands surrounding these dry lakes are home to many threatened, endangered, or sensitive species of plants and wildlife along with cultural resources. Specifically, Ivanpah Dry Lake was closed to motorized vehicles in the CDCA Plan to preserve the integrity of the resources and to provide an obstructed area for wind dependent recreation activities and other activities requiring wide-open spaces. Access is authorized under permit. Seven of the seventeen dry lakes identified in the California Desert Conservation Area (CDCA) Plan, 1980, as amended were designated as open. Out of the remaining ten dry lakes, five offer access under permit or access on approved routes of travel. Vehicle restrictions were placed in these areas because of their unique geography. Specific route designations are made in the Proposed Plan, consistent with area designations for the Ivanpah lakebed. Under different alternatives, limitations are pulled back either at or near shoreline (No Action), or first reasonable cross-access route (Proposed Plan) off of the lakebed itself. The Proposed Plan strategy for the lakebed and routes surrounding the lakebed is intended primarily to limit conflicts between different classes of recreational users (i.e., casual users and permitted wind-based users) and also to limit lakebed damage from turnarounds on the lakebed itself.

PC 147: The BLM should request a NEPA-compliant analysis of UNOCAL's water extraction and transportation proposal in order to assess impacts to the planning area.

Response: This project is outside the Scope of the planning effort. It involves private lands, is a single project, and contributes minimally to cumulative impacts (See Chapter 4, Section 4.12). No evidence is provided to the contrary.

PC 148: The Final EIS should outline a comprehensive groundwater protection strategy for all areas of the lower Carson Slough Area of Critical Environmental Concern.

PC 149: The Final EIS should analyze the relationship between riparian flows and groundwater sources.

Response: The strategy in the Proposed Plan for Lower Carson Slough is described in Chapter 2, Section 2.4.2. Item four includes “a strategy for conservation...of ephemeral wetlands, mesquite *bosques* and riparian areas in cooperation with adjacent private landowners and other Federal, State, and local agencies.” In addition, the last item calls for “a strategy in cooperation with other Federal, State, and local agencies to safeguard surface and groundwater flows.” As stated in the first paragraph of Section 2.4.2, this strategy will be integrated with the strategy for the Amargosa River ACEC. Elements of the management plan for the Amargosa River ACEC are listed in Section 2.3.3. BLM considers that the suggestions and concerns of the comments are adequately addressed in the descriptions for the proposed ACECs.

PC 150: The BLM should discuss and commit to protecting spring sources by excluding cattle and burros.

Response: Sources of water are valuable in the Mojave Desert. The BLM recognizes the need to protect springs and adjacent riparian vegetation with modification of current management or simply fencing the riparian area. The BLM has identified areas that need some help (See Chapter 4, Section 2.1.1, Riparian/Wetland and Cattle Grazing Impacts in the FEIS), “Many of the desert spring riparian areas within the NEMO Planning Area have been rated as non-functional or functioning-at-risk (Refer to Appendix J), primarily resulting from water diversion, weed establishment, vehicle use, mining, burro use or livestock grazing. Many riparian riverine segments have similarly been rated as functioning-at-risk due to upstream water use, groundwater overdraft and/or exotic plant (*saltcedar* or *Tamarix ramoissima*) establishment.

Most of the places listed on page J-9 of the FEIS are affected primarily by water diversion and weed establishment. The list shows all spring and riverine segments are functioning except two springs. The list is a partial inventory of springs and riverine segments in the planning area and no explanation is provided for failure to meet the standard or for the area to be functioning at risk. In those allotments where field assessments were completed in 1999 very few riparian areas failed to meet the standard.

For example, two allotments—the Last Chance and South Oasis Allotments of the 17 allotments did not achieve standards in small areas of vegetation around two springs and a pond. The South Oasis Allotment did not achieve the standard due to weedy infestation of saltcedar at a spring and developed pond. Cattle use was not implicated in the failure to meet the standard. However, due to grazing utilization of riparian vegetation at Willow Spring within the Last Chance Allotment the riparian/wetland standard was not met. No grazing has occurred in the past three years and recovery is well underway. Future cattle grazing would not be allowed until the riparian area of Willow Spring is fenced.

Vegetation/Rangeland Management

PC 151: The Final EIS should include a vegetation map as a basis for proposed management in the NEMO plan area.

Response: Proposed Plan management is based on many factors. These goals and objectives are focused around conservation and recovery of the species and its habitat. Habitat is described for each species, and its critical habitat mapped. Additional special information about habitat, such as unusual plant assemblages and desert tortoise habitat categories is also mapped. Other vegetative characteristics of the affected environment are discussed in Chapter 3. General vegetation mapping does not provide better focus to the discussion of alternatives, areas of potential conflict, or analysis of impacts, and is therefore not included. Maps of vegetation communities in the planning area used during preliminary analysis are available at the Barstow Field Office.

PC 154: The BLM should monitor ecosystem health as it pertains to vegetation.

Response: Additional monitoring efforts are anticipated when indicators of the standards point toward the need to monitor specific components of land health. An interdisciplinary team of BLM staff and any interested public would review resource conditions, such as distribution and cover of plant species, and determine if existing conditions meet or do not meet public land health standards. Assuming standards were not met, monitoring would be scheduled for those attributes of the ecosystem needing long-term technical review. Long-term monitoring efforts are costly and would provide additional burden to an already limited field office staff. The BLM welcomes collaborative support for future monitoring efforts as recommended by the assessment teams.

PC 155: The trigger for evaluation of rehabilitation given in Appendix F does not consider important plants such as Joshua trees and cover requirements would be insufficient to maintain soils and ecological functions.

Response: The “trigger” described in Appendix F would result in a site-specific evaluation to determine whether the lands had been restored sufficiently to warrant their removal as “disturbed lands” under the 1% cumulative new disturbance limitation. As stated, “passing of the evaluation trigger alone will not remove the disturbed lands [from the cumulative disturbance], it is the point at which evaluation of lands would be initiated.” The 40% of original dominant perennial plant density and 30% cover are measures that can be made quickly and efficiently in any season of any year. Comparison can readily be made between the disturbed area and a nearby, undisturbed area. The full level of recovery would be left to the evaluation and might involve many other factors.

Project-specific restoration requirements might be quite different than the trigger and would depend upon the site characteristics and project disturbance. For example, if Joshua trees are present in the area, the restoration requirements might be to plant Joshua trees at their pre-existing density because of their value to wildlife in providing an overstory. However, Joshua trees would not be considered in the trigger due to their lack of dominance in the vegetation community. Appendix F describes some considerations for restoration planning.

PC 156: The BLM should substantiate claims that vehicle routes significantly effect vegetation.

PC 158 The BLM should evaluate closing routes within 1/4 mile of riparian and wetland areas within NEMO.

PC 321 To preserve the desert visitation experience, the BLM should allow travel routes within one quarter mile of a water source to remain open.

Response: Alternatives are evaluated that consider keeping routes to water sources open, and closing them. The Proposed Plan would strongly consider closing such routes, taking into account whether such water sources are at the terminus of a route, or whether they are adjacent to a primary transportation route, and whether other protection methods are feasible and sufficient to protect riparian resources. See Appendix Q, Table Q.1 for a list of major waters and route designation strategies proposed for those waters in the desert tortoise subregions. The environmental consequences describing the effects of the Motor Vehicle Access: Routes of Travel Designation has been strengthened to more fully describe impacts of route use on vegetation resources, including, riparian/wetland resources. See especially the impacts on vegetation of the No Action Alternative (Section 4.9.1).

PC 162: The Final EIS should evaluate impacts of human activities on biological soil crusts.

Response: The impacts on biological soil crusts are specifically analyzed for the following proposals and alternatives: Standards and Guidelines (4.1), Desert Tortoise Conservation and Recovery (4.2), Amargosa Vole Conservation and Recovery (4.3), T&E Plants in Lower Carson Slough (4.4), Organized Competitive Vehicle Events (4.8), and Motor Vehicle Access (4.9).

PC 164: The Final EIS should establish vegetation restoration requirements that reflect the pre-disturbance conditions, maintain species diversity, include annual plants, and ensure the long-term persistence of special status plants.

Response: Appendix F offers a discussion on vegetation restoration. As stated in Appendix F, the Desert Restoration Task Force will continue to address and provide information on restoration planning and techniques. This is a working group of botanists, wildlife biologists, and other specialists commissioned by the Desert Managers Group, a multi-agency coordination forum for managers. More research and testing are needed to determine the most effective restoration methods. In any event, case-by-case field applications will be needed. Appendix F lists some site considerations; these include, among others, special status species, the rarity and quality of the plant community, management goals for the area, ecological processes, and site characteristics.

The triggering criteria for site evaluation with regard to the 1% limit on new surface disturbance are not restoration criteria. See PC#155 for further discussion of the trigger criteria.

PC 166: The Final EIS should address a restoration plan for the Amargosa River area.

PC 167: The Final EIS should outline a plan to study movement of ground water in protected areas and implement action to limit effects on ground water-dependent natural resources in the Amargosa River area.

Response: Three studies of groundwater movement in the Amargosa basin are underway at the present time. One of the studies is by the National Park Service, in cooperation with Inyo County. A second study, by USGS, is the result of ongoing questions on the proposed Yucca Mountain facility for the storage of high-level Nuclear Waste. A third study is being conducted by BLM as a result of lawsuit stipulations. Data from these studies will be considered in the development of the Amargosa River ACEC Plan or other strategy selected for the Amargosa area to protect Threatened and Endangered Species. At that time, issues such as current measures for restoration and the need for additional plans will be evaluated, taking into consideration data collected from these various studies, as applicable.

PC 168: The Final EIS should protect the Amargosa River which provides habitat to federally listed plant species.

Response: Progress through the eligibility and classification steps underscores BLM's concern for protecting the Amargosa River and the resources it supports. As noted in 2.12 of the DEIS, the remaining suitability determinations are to be completed subsequently, and analyzed in an EIS format.

PC 169: The Final EIS should evaluate impacts of human activities on noxious weeds.

Response: The impacts on noxious weeds are specifically analyzed for the following proposals and alternatives: Standards and Guidelines (4.1), Desert Tortoise Conservation and Recovery (4.2), Amargosa Vole Conservation and Recovery (4.3), T&E Plants in Lower Carson Slough (4.4), Organized Competitive Vehicle Events (4.8), and Motor Vehicle Access-Routes of Travel Designations (4.9).

PC 172: The BLM should thoroughly evaluate various strategies and methods for controlling tamarisk.

Response: For some time, the BLM has had an on-going program to control tamarisk. Past efforts have focused on the removal of tamarisk in key riparian sites. In the Planning Area, major removal efforts have been undertaken in Salt Creek, in Amargosa Canyon, and at various springs. Research and experimentation on effective means of removing and preventing tamarisk infestations is continuing. In the past the BLM has used burning (primarily to open human access into thickets of tamarisk), cutting, and herbicide treatment. Some researchers (e.g., Jack DeLoach) have been investigating the feasibility of using biological controls, such as insects. The BLM will continue to participate with groups, such as the California Exotic Pest Plant Council and Desert Restoration Task Force to refine methods. It is not necessary to define specific techniques in the CDCA Plan.

PC 174: The Proposed Plan should implement the proposed Standards and Guidelines for Rangeland Health with additional science based recommendations.

PC 180: The Proposed Plan should establish a 25-35% range utilization threshold guideline to protect sensitive species habitat.

Response: The 15 guidelines and the table for utilization listed under the Proposed Plan cover a wide variety of management prescriptions for grazing use. Guidelines can be adjusted over time with additions and deletions as necessary to accommodate new scientific information. These guidelines were cooperatively developed with members of the California Desert District Advisory Council with representation from a variety of interests. Guidelines are to be utilized by managers to achieve the Public Land Standards not to make additional requirements of grazing use.

Guidelines set the tone about livestock prescriptions that would be translated into terms and conditions for the grazing lease. For example, under the Proposed Plan guideline number 9, "Grazing on designated ephemeral range land shall be allowed only if reliable estimates of production have been made, and an identified level of annual growth or residue to remain on site at the end of the grazing season has been established." This guideline translates into, "Cattle grazing would not occur until ephemeral forage reaches and is maintained at 230 pounds air-dry weight per acre." Another term and condition for grazing use from this guideline might be, "Grazing use of ephemeral forage would cease on June 1."

PC 175: The BLM should support the State of California in creating standards and guidelines for Rangeland Health.

Response: This proposal was not considered and evaluated in the NEMO Plan because it is beyond the scope of the Proposed Plan as defined by the purpose and need of the EIS (see Section 1.3).

PC 177: The BLM should develop and adopt a fire management plan.

Response: A fire management plan was adopted for all of the California Desert District, including the NEMO planning area, in May, 1998. The plan breaks down all areas of the desert by polygon into 1 of 4 fire management strategies, based on the environment and resources. Fire management strategies within the NEMO planning area vary widely, reflecting the diversity in geography and prescribed fire needs. This fire management plan is scheduled for update in 2004.

PC 178: The BLM should consider creating Guidelines for other Activities to accompany Standards of Public Land Health for the NEMO area.

Response: Key staff members who daily work with livestock grazing concerns in the CDCA are acutely aware of utilization provisions in the current biological opinions for cattle grazing and have undergone training on standards and guidelines. However, other staff members who do not directly deal with these concerns on a daily or seasonal basis would need instruction. This instruction is necessary because different groups of field office staff have oversight of different resources and activities and staff would need to coordinate management concerns on all issues. Therefore, cross-discipline instruction would need to occur prior to consideration of any additional guidelines. The four health standards from the Proposed Plan have guidelines specific to grazing management, but guidelines have not been developed for other activities. Guidelines would be established for other activities if found to be necessary to maintain the standards. If additional guidelines are developed, BLM staff would be responsible for implementation to achieve the standards.

PC 179: The BLM should provide public education opportunities pertaining to desert vegetation.

Response: Within several alternatives, including the Proposed Plan, BLM in the NEMO document proposed to have Nature interpretation kiosks or signs explaining the local biota and natural processes in the NEMO planning area. Refer to Section 4.2.2.9. The EIS process requires analysis of all sensitive plant species and a general description of plant and animal communities in the NEMO. Chapter 3 in particular contains descriptions of the flora and fauna, and Chapter 4 describes potential impacts to vegetation, by various activities. In addition, the NECO and WEMO EISs contain ample educational materials about desert flora. BLM in addition has published many other environmental assessments and popular brochures about desert flora.

PC 183: The BLM should manage livestock grazing to protect endangered species.

Response: Prescriptions for grazing use detailed under the Proposed Plan would maintain a low level of grazing use while providing measures to protect and recover the desert tortoise. The level of grazing use planning area-wide is low and slowly decreasing. For example, grazing use on two large allotments in the planning area was no longer authorized in the last two years because of manageability, where buyouts of leases occurred on shared NPS/BLM allotments. The Proposed Plan would provide the lessees an opportunity to relinquish their grazing leases (allotments) in DWMA. Annual use of perennial grasses and shrubs by cattle is tied to sufficient spring production of ephemeral grasses and forbs in DWMA. Continuation of mitigation measures for ongoing activities in desert tortoise habitat plus other measures for other activities such as burro use and vehicle access would lead to recovery of the desert tortoise.

PC 189: The BLM should identify trail closures implemented to protect threatened and endangered species.

Response: BLM has done so, consistent with 43 CFR 8342.1 and 8342.2 to protect Threatened and Endangered species and for other goals as outlined in the Purpose and Need (Chapter 1, Section 1.3). See Chapter 2, Section 2.10 for alternatives; the Proposed Plan can be found in 2.10.5. Specific route designations for the Amargosa subregion, including T&E plant areas of the Carson Slough drainage, would occur by June, 2004 or as otherwise agreed to in settlement C-00-0927-WHA.

PC 190: The BLM should identify data that shows OHV use is a threat to threatened and endangered species.

PC 230: The BLM should protect the desert tortoise from predation and disease rather than basing management actions on vehicle restrictions.

PC 306: The BLM should justify its claim that damage to travel routes is permanent.

Response: The environmental consequences describing the effects of the amendment addressing Motor Vehicle Access: Routes of Travel Designation has been strengthened to more fully describe and clarify impacts of route use on special status plants and animals. See especially the impacts on vegetation - special status plants and wildlife - special status animals for the No Action Alternative (Section 4.9.1). Note that in the NEMO Plan, Routes of Travel designations have only been made for the two desert tortoise subregions, but criteria are established for route designations that are to be completed in the remainder of the Planning Area by June, 2004. See PC 213 for a response on tortoise predation. See PCs 211 and 212 for a response on tortoise disease.

Floral Species

PC 193: The BLM should seasonally exclude sensitive plant species habitat from grazing until studies show impact does not occur.

PC 194: The Proposed Plan should establish a guideline requiring monitoring and mitigation for grazing impacts on all sensitive plant species.

Response: In grazing allotments within the planning area, there are no known endangered plants. Direction for monitoring is located in the Proposed Plan at the end of Section 2.1.2 in Chapter 2, after the guidelines for grazing management and Table 2.2 in the. The direction from the DEIS, "In those areas not meeting one or more standards, monitoring processes will be established if they do not presently exist to monitor indicators of health until the standard or resource objective has been attained." As assessments of standards are completed throughout the planning area, monitoring priorities would be established for those constituent components of the standard that failed during the assessment process. Most likely, resource data collection would occur for several aspects of the indicators. The BLM has limited personnel and funding resources so judicious application of monitoring efforts would occur.

Fauna

PC 195: The BLM should protect the habitat of the Mojave fringe-toed lizard, including habitat at the Dumont Dunes OHV Open Area.

Response: This proposal was not considered and evaluated in the NEMO Plan because it is beyond the scope of the proposed action as defined by the purpose and need of the EIS (see Section 1.3). However, in September 1999, the California State Director added the Mojave fringe-toed lizard to the list of BLM California sensitive species. The species and its habitat will receive the consideration warranted by such designation in the environmental review process for proposed actions. As noted by some commenters, additional inventories for this species are needed.

PC 198: The BLM should eliminate vehicle disturbance from Surprise Canyon to protect breeding habitat for the federally endangered Least Bell's vireo and the Panamint alligator lizard.

Response: This proposal was not considered and evaluated in the NEMO Plan because it is beyond the scope of the proposed action as defined by the purpose and need of the EIS (see Section 1.3). The route into the Canyon has been closed at Chris Wicht Camp on an emergency basis. The BLM is currently preparing environmental documentation evaluating a range of alternatives for the route up the Canyon, including an alternative that would close the route. The BLM portion of Surprise Canyon is within the Surprise Canyon ACEC and has a current management plan

In 2001, Laura Cunningham conducted surveys for least Bell's vireo in five areas in Surprise Canyon ACEC for BLM. No least Bell's vireos were seen during that survey.

PC 199: The Proposed Plan should include the Snowy Plover as a special status animal.

Response: In 2001, the BLM contracted for surveys at nine sites in the Mojave Desert. Three sites were in the NEMO planning area - Grimshaw Lake/Tecopa Hot Springs, Warm Sulphur Springs, and Post Office Springs.

Walter Wehtje conducted surveys at Grimshaw Lake/Tecopa Hot Springs; he observed no plovers in the area. However, he believed that “the combination of extensive alkali flats and permanent water appeared ideal for the species.” He observed northern harriers, common ravens, and loggerhead shrikes foraging over the flats; all are known predators of snowy plover eggs or chicks. Grimshaw Lake is included in the Grimshaw Lake Natural Area ACEC; snowy plover habitat needs may be adequately addressed through the ACEC planning process.

In seven visits to Warm Sulphur Springs, Laura Cunningham observed one adult snowy plover. Northern harriers, common ravens, loggerhead shrikes, California gull, and a coyote, all known snowy plover predators, were also observed. Burros were reportedly abundant at Warm Sulphur Springs. Tamarisk is present around the edges of the playa. Warm Sulphur Springs is in the Warm Sulphur Springs ACEC; snowy plover habitat needs may be adequately addressed through the ACEC planning process.

In two visits to Post Office Springs and another site one mile south, Laura Cunningham saw no snowy plovers. Burros were abundant in this vicinity, also. Coyotes were common.

PC 200: The Final EIS should address protection for threatened and endangered riparian obligate birds, such as southwestern willow flycatcher, least Bell’s vireo, and Inyo California towhee.

Response: At the present time, there are no known breeding sites for southwestern willow flycatcher in the Planning area. Least Bell’s vireos are known to breed only at Amargosa Canyon/Willow Creek in the Planning Area; this area is within a designated ACEC and will be further addressed, if appropriate, in ACEC planning. In 2001, surveys were conducted for these two species in Amargosa Canyon/Willow Creek and at Surprise Canyon. Additional surveys are being conducted in 2002 in the Planning Area at Cottonwood Creek in Fish Lake Valley, Surprise Canyon, Amargosa Canyon/Willow Creek, Mesquite Dry Lake, and Horsethief Springs.

PC 202: The Final EIS should address management actions needed to protect populations of and preserve habitat for sensitive fish species endemic to the Amargosa River.

Response: This proposal was not considered and evaluated in the NEMO Plan because it is beyond the scope of the proposed action as defined by the purpose and need of the EIS (see Section 1.3). Two BLM California sensitive fish (Amargosa River pupfish, *Cyprinodon nevadensis amargosae*, and Amargosa speckled dace, *Rhinichthys osculus amargosae*) are found primarily within two existing ACECS – Salt Creek and Amargosa Canyon Natural Area. Both ACECs have management plans addressing the needs of these and other species. An intensive tamarisk removal project has been conducted at Salt Creek over the past few years. Surface flows have been substantially increased (Thomas Egan, BLM Wildlife Biologist, pers. comm.). Some tamarisk removal has been done in Amargosa Canyon. Vehicle barricades have been constructed on some closed routes in Amargosa Canyon. The CDCA Plan provides adequate capability to manage the habitat of these two species on BLM lands. These issues may be further addressed during ACEC plan update.

Desert Tortoise

PC 205: The BLM should give desert tortoise conservation a high priority.

Response: A major element of the NEMO Plan is conservation of the desert tortoise and, more specifically, implementation of the Desert Tortoise Recovery Plan. The latter calls for designation of Desert Wildlife Management Areas (DWMAs), application of reserve-level management within the DWMAs, acquisition of lands within the DWMAs, monitoring of populations, developing and implementing a public education program, and conducting research (USFWS 1994). The proposed DWMAs are described in Section 2.2 along with a general management strategy. Goals, objectives and details of the tortoise management strategy are presented in Appendix A; issues addressed include, mining, livestock grazing, fire management, vegetation harvesting and treatment, land tenure, vehicle access, recreation, wild horses and burros, ravens, wildlife facilities, law enforcement, monitoring, public education, and research.

PC 211: The Proposed Plan should incorporate Upper Respiratory Tract Disease testing protocols for the desert tortoise.

Response: It is unclear why BLM should undertake a testing program. Certainly, as a part of the tortoise disease research program, many tortoises have been tested. Both recently dead and injured tortoises have been tested. (Kristin Berry, USGS, tortoise researcher). The BLM is not involved in an active translocation program, such as occurred in the Las Vegas Valley, that would necessitate testing. The public is advised that no tortoise, regardless of symptoms, should be released into the wild. Tortoises brought to BLM offices are delivered to a local Turtle and Tortoise Club for adoption and are not released into the wild. During project development, some tortoises are moved a short distance out of harm's way; however, such movements would normally be within the home range of the individual tortoise and would not necessitate testing. A program to test all tortoises with the intent of removing all infected tortoises from the population, if this is the commenters intent, would be cost prohibitive because of 1) the extensive range of the tortoise, covering over 5 million acres in California, 2) the intensive search required to locate tortoises, and 3) the short time (both annually and daily) that tortoises are above ground.

PC 212: The BLM should modify desert tortoise recovery plans to prevent intra-species spread of disease.

Response: At the present time, no means for preventing the spread of Upper Respiratory Tract Disease have been identified. The causative agents for various shell diseases that are decimating populations in the Colorado Desert to the south of the Planning Area have not been identified. Through various public education programs (e.g., kiosks, brochures), BLM and other agencies and organizations are trying to prevent the release of captive, possibly diseased, tortoises into the wild. Tortoises brought to BLM offices are delivered to a local Turtle and Tortoise Club for adoption and are not released into the wild. The Biological Research Division of the U. S. Geological Survey, which is the research agency for the Department of the Interior, is directing the research program on desert tortoise diseases.

PC 213: The BLM should protect the desert tortoise by developing an effective avian and mammal predator control program.

Response: 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 even 30 years ago (Knowles *et al.* 1989).

Examination of carcasses from permanent study (i.e., monitoring) plots has shown that canid predation on all tortoise age classes is common in some areas (Kristin Berry, USGS tortoise researcher, pers. comm.). At a study site near Goffs in the mid-1980's Turner and Berry (1985) found canid destruction of tortoise nests to be 24%, 28%, and 48% over a three-year period. Historic records of coyotes and kit foxes are not available for comparison with today's populations.

The BLM has proposed a program presented in Appendix A (Sec. A.2.12) to address the raven predation issue. Some aspects of the program have been tested (e.g., targeted raven removals) and some have been implemented (e.g., closure and rehabilitation of local, unauthorized dumps on BLM lands).

Turner, F. B., and K. H. Berry (1985) Population ecology of the desert tortoise at Goffs, California, in 1985.

Knowles, C., R. Gumtow, P. Knowles, and P. Houghton. 1989. Relative abundance and distribution of the common raven in the deserts of Southern California during fall and winter 1988. Contract Rept. CA950-CT8-56 to BLM, Riverside, Calif. 44pp.

PC 215: The BLM should facilitate Desert tortoise recovery by eliminating livestock grazing from all desert Wildlife Management Areas.

PC 370: The BLM should prohibit livestock grazing in tortoise reserves.

Response: The Recovery Plan, 1994 recommends ten management actions to recover the desert tortoise. One of the recommendations from the US Fish and Wildlife Service addresses a prohibition with domestic livestock grazing in DWMA's. The Proposed Plan identifies concerns in DWMA's related to ephemeral forage competition between cattle and tortoises by tying continued grazing use of perennial vegetation with adequate seasonal production of ephemeral forage. Substantially removal of cattle from the DWMA's in years with inadequate ephemeral forage eliminates forage competition and together with potential relinquishment of the allotment would provide financial safeguards for the lessee to conclude or provide for some grazing use.

PC 220: The BLM should provide more information on the life history and habitat requirements of desert tortoise.

Response: Section 3.2.3 in the Affected Environment has been strengthened to include more information on desert tortoise.

PC 221: The BLM should establish procedures for monitoring the effectiveness of desert tortoise recovery efforts.

Response: The proposed monitoring program is presented in Appendix D. Monitoring of tortoise populations using the line-distance sampling methodology was initiated in all critical habitat units in 2001. This monitoring program is being conducted under the guidance of the Phil Medica, the Multi-agency Desert Tortoise Coordinator, a newly established position directed by the Desert Tortoise Managers Oversight Group (MOG). This program is intended to determine trends in population size for each DWMA. The program is being funded by numerous Federal agencies.

In addition, the USGS Biological Resources Division has acquired funds from several sources (e.g., CDFG, DOD) to continue monitoring the Shadow Valley, Ivanpah Valley, and Goffs permanent study plots. These studies will provide more detailed information on sex ratios, age distribution, and causes of mortality. Kristin Berry of USGS is administering these studies.

PC 223: The BLM should add Goffs Road to the list of highways to have desert tortoise barrier fencing.

Response: There are specified criteria for desert tortoise fencing (Appendix A, Section A.2.8). BLM has no vehicle counts on Goffs Road, but the highway carries much of the traffic going toward Los Angeles to/from Highway 95. Tortoise densities far exceed 50 per square mile along much of the highway, and it is entirely within the proposed Piute-Fenner DWMA. San Bernardino County has specifically requested that BLM not fence County Roads. The county would consult with CDFG as part of the consultation process if/when traffic does increase such that it becomes necessary to widen Goffs Road to four lanes. BLM would coordinate with the county to address affects and mitigation on public lands at the time of such a proposal. At that time, the county may consider highway fencing again, or other strategies to minimize any habitat compensation fees and/or as mitigation for the expansion.

PC 224: The BLM should frequently check and maintain guzzler escape ladders in desert tortoise habitat.

Response: One commenter reported vandals had removed modifications made to many (>60 observed) small game guzzlers designed to provide a sure footing for animals entering the guzzler. We concur that to ensure that small game guzzlers do not become a significant source of tortoise mortality, BLM and CDFG wildlife biologists and volunteer groups doing periodic inspections will have to ensure that proper escape footing (e.g., mesh ramps) is in place on all guzzlers.

PC 225: The BLM should analyze and mitigate utility corridor impacts to the desert tortoise reserves.

Response: Attachment 1 (Desert Tortoise Mitigation Measures) of Appendix A (Proposed NEMO Desert Tortoise Conservation Strategy) lists the mitigation measures to be applied to construction and maintenance of utilities in tortoise habitat. In addition to measures applicable to most activities, special measures are listed for application to pipelines and underground cables and to power transmission lines. USFWS will review all projects through either 1) the procedures established in the new programmatic biological opinion or 2) a project-specific consultation.

PC 226: The BLM should protect the desert tortoise by translocating them away from human generated disturbances.

Response: Consistent with the Desert Tortoise Recovery Plan, the BLM has proposed DWMA's where reserve-level management would be implemented. These DWMA's will be designated BLM Category I desert tortoise habitat. Under the BLM's Desert Tortoise Rangelwide Strategy, the goal for Category I habitat is to maintain viable populations of desert tortoise. All tortoise habitat outside of DWMA's would be Category III. The goal for Category III desert tortoise habitat is to mitigate to the extent possible. Where projects occur, tortoises may be moved out of the project area (and perhaps excluded by a fence during the life of the project) to prevent injury or mortality. However, except for such project-specific protection, tortoises will not be removed from public lands, but BLM will work to remove or reduce tortoise mortality or injury and habitat loss on public lands.

PC 227: The BLM should implement desert tortoise breeding programs to mitigate population decline.

Response: The Department of Defense has funded preliminary studies on captive rearing and release of young tortoises. Morafka *et al.* (1996) and Spangenberg (1996) reported on these studies at Ft. Irwin and use in conservation of neonatal (<1 year old) and juvenile (1-7 years old) tortoises. Captive rearing programs have been considered and investigated because 1) ravens predation on hatchling and juvenile tortoises has prevented tortoise recruitment in some area; 2) a rearing program would hold young tortoises until past the primary age of predation; and 3) disease has depleted populations below habitat carrying capacity in some areas. However, more must be learned before a project is proposed for large-scale population augmentation. Such a project may be proposed at a later time.

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.

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.

PC 229: The BLM should study the effects of climate change on the desert tortoise.

Response: The USGS Biological Research Division is assigned the responsibility for conducting research on biological issues in the Department of the Interior. Some studies they are conducting may relate to the issue of climate change. As a participant on the desert tortoise Technical Advisory Committee, the BLM contributes to the establishment of priorities for tortoise research. These priorities are given in Section A.6. USGS considers these priorities in funding and directing research projects.

PC 231: The BLM should study the desert tortoise within designated wilderness areas to determine whether vehicles affect tortoises.

Response: An extensive monitoring program for desert tortoise has only been in place since 2001. There is some potential to determine differences, if any, in tortoise population size or trend between wilderness areas and areas where vehicle travel on roads is allowed. However, the low numbers of tortoises recorded in the existing monitoring program would not be sufficient for such analyses. The current monitoring program is intended to show a trend in population size for an entire recovery unit and not subsets of it.

In addition, between any two areas there are confounding effects, such as livestock grazing, highly localized rainfall patterns, exotic weeds, and soil contaminants. These and other differences between areas would make it difficult to isolate particular activities for analysis.

Wildlife Management

PC #: 237 Public Concern: The BLM should develop a strategy for keeping burros out of Death Valley National Park.

Response: The NEMO plan only addressed the herd management areas (HMAs) within the planning unit, which were in critical habitat for threatened and endangered plant and animal species. There are 7 herd areas (HAs) and 3 HMAs for burros which border Death Valley National Park, which are outside the scope of the Proposed Plan. The BLM Ridgecrest Field Office and Death Valley National Park continues to coordinate management efforts for population census and removals for these areas. The Inyo National Forest and the China Lake Naval Weapons Station, are two other agencies which manage wild horse and burro populations under the guidance of Public Law 92-195 (Wild Free-Roaming Horse and Burro Act, 1971) which border some of these HAs and HMAs. The future management prescriptions for these areas would be formulated through multi-agency coordinated efforts, specifically for burros.

PC 238: The BLM should remove all burro and wild horse herds adjacent to National Park Service units.

Response: Adjacent Federal lands which have different management goals and objectives, need to coordinate together on establishing management strategies that can best achieve each of the agency's mission, which may include fencing specific areas. Decisions on the Waucoba-Hunter Mountain HMA, which borders the White Mountain Burro Territory, would also need to be coordinated with the U. S. Forest Service - Inyo National Forest.

PC 239: The BLM should protect habitat by removing burros and wild horses from desert ecosystems.

Response: Continued efforts are being conducted to remove all burros from herd areas that have target populations of zero. In areas designated as HMAs, wild horses or burros shall be managed as an integral component of the public lands on the basis of multiple use and in a manner that maintains an ecological balance, to the target Appropriate Management Level (AML) based on available forage and other management factors.

PC 240: The BLM should remove the Clark Mountain Burro Herd.

Response: The Proposed Plan in the Final EIS will be to eliminate the Clark Mountain HMA in Shadow Valley and remove all burros within the Clark Mountain herd area. The Draft EIS preferred alternative, was to establish the Clark Mountain HMA on the east side of the herd area in Mesquite and Northern Ivanpah Valleys. However, waters are limited in these valleys, and based on NPS management of key water sources and the need to prevent substantial drift back into the Proposed DWMA (Shadow Valley) where the original HMA was located, the Proposed Plan was changed.

PC 241: The BLM should proportionally reduce herd size where Herd Management Areas have been reduced by the California Desert Protection Act.

Response: Table K-1 Current Status of California Desert Burro Herd Areas and Herd Management Areas, has been added to Appendix K, wild horse and burro section, to reflect the reductions in burro habitat and AML from the CDPA, and additional discussion has been added to Chapter 3. Section 3.5 and to Chapter 4, Section 4.12, Cumulative Impacts.

PC 243: The BLM should examine the effects on natural balance by manmade water sources and enhancements to support livestock and wildlife.

Response: Guzzlers are not specifically proposed under the Proposed Plan, and requests to install guzzlers would be reviewed on their own merits and tackled by each field office on a case-by-case basis. Installation of water sources to improve cattle distribution would be dependent upon the lessee continuing the grazing lease in a DWMA. If grazing use continues in a DWMA, range improvements would be reviewed by staff from BLM, FWS and the lessee for appropriate placement and potential placement of mitigation measures.

PC 244: The Proposed Plan should recognize and maintain high elevation “sky island” ecosystems that harbor relict species and species commonly occurring in other bioregions.

Response: This proposal was not considered and evaluated in the NEMO Plan because it is beyond the scope of the proposed action as defined by the purpose and need of the EIS (see Section 1.3). However, the Desert Protection Act of 1994 transferred many of the high-elevation mountain ranges in the NEMO Planning Area that have relict species to the National Park Service. For example, the New York Mountains, Providence Range, and Clark Mountains are now in the Mojave National Preserve. The Last Chance Range and upper elevations of the Panamint Range are now in Death Valley National Park. The Kingston Range remains in BLM ownership; it is commonly recognized as a “sky island.” The Kingston Range is in the Kingston Range Wilderness Area. The Inyo Mountains, which contain relict species, such as Inyo Mountains slender salamander, are in the Inyo Mountains Wilderness Area. See also, the response to comment #197 addressing management of Gila monster.

PC 245: The BLM should ensure that route densities meet criteria for tortoise critical habitat needs.

PC 335: The BLM should limit the number of miles of vehicle routes to 18 miles per township in Desert Wildlife Management Areas and 24 miles per township in the remaining areas of BLM lands in the Northeastern Mojave.

Response: No specific route density criteria were recommended in the Desert Tortoise Recovery Plan nor are criteria proposed in the Proposed Plan. Other land management goals overlap those of tortoise critical habitat (and proposed tortoise DWMA's). For example, in wilderness areas, there are no roads open for public travel. And conversely, in utility corridors, utility service roads create zones of higher than average route densities. The proposed route network is intended to provide public access needs and meet tortoise conservation purpose and need, consistent with 43 CFR 8342.1 criteria. With the relatively low density of routes in the desert tortoise subregions in the planning area, the very establishment of a route network using the inventories will accomplish reasonable route densities. For the specific Proposed Plan network, see the fold-out maps in Volume 1, and all alternatives are found in Chapter 8, Figures 4a through 4h.

Human Environment, Recreation, and Travel

Recreation and Access

PC 249: The BLM should ensure continued opportunities for multiple-use recreation within the CDCA planning area.

Response: Departmental regulations control BLM designations of land areas and Routes of Travel [43 CFR 8342 *et seq.*]. Although these designations can occur simultaneously, they are different designation actions. For example, within an area BLM has designated as “Limited” with respect to uses of the land, the agency also can designate a route as “open” for use by motorized vehicle operators. While some NEMO Plan alternatives would move BLM to designate routes as “closed” or limit use of motorized vehicles, none of those alternatives involve area closures.

In other words, the Proposed Plan is designating Routes of Travel. It is not designating the areas that those ROT are in. All of the areas that the planning effort is designating ROT for are designated under the CDCA Plan as “Limited”. BLM is not designating ROT in closed areas (e.g., designated wilderness). Nor is BLM designating ROT in OHV Open areas (Dumont Dunes). This has already been addressed in the OHV Management Plan. The OHV Management Plan may be modified in the future, just as route designations in ACEC Plans may be modified in the future, through the Proposed Plan process, but they are not being accomplished in this Proposed Plan.

The current set of CDCA lands (California Desert Conservation Area) closed to motorized vehicle use is composed of wilderness areas (designated by statute), some special areas (e.g., ACECs, that is, areas of critical environmental concern) if the closure or limitation is a product of the approved management plan, and some other areas listed by name in the CDCA Plan, 1980, as amended.

Opportunities for use of motorized vehicles on other California Desert public lands, including use by those with disabilities, continues to be available without limits unless BLM finds that such use is, or is becoming, incompatible with other land holdings, uses or resources protected by law (e.g., private property rights, commercial rights-of-way, or resource protection for critical elements). It is under such circumstances that BLM’s requirement—to make route designations consistent with 43 CFR 8342.1 on the public lands becomes more challenging, especially as recreation demand grows in step with population increases.

PC 250: The Proposed Plan should establish that a greater number of roads and trails be left open for recreational use.

Response: The opportunity to participate in and shape the decision making process was widely distributed to affected parties, including local and state agencies. Modifications to route designation recommendations have been considered from the inception of this planning effort and in the decision making process. As a result of public participation, the Bureau adapted several of those recommendations whether it was to close a route or reopen a route and modified our plan alternatives. These changes are reflected in Appendix Q. Given that the public was formally noticed, given the opportunity to comment on the proposed alternatives, and that their opinions were considered and modifications were made to route designations, no decisions were made in an arbitrary or capricious manner.

PC 252: The BLM should improve availability and quality of public information regarding travel plans on public lands.

Response: Currently, Desert Access Guides (a set of thirty-one 1:100,000 scale maps depicting routes of travel, surface management status, and points of interest among other map features) are widely distributed through independent vendors as well as BLM offices in the California Desert District. Implementation of route designation decisions made through the Proposed Plan includes signing routes, installing informational kiosks at key locations, and distributing printed media regarding the availability of motorized-vehicle recreation opportunities (see Sec. 2.10, Motorized-Vehicle Access/Routes of Travel Designations). Upon revision of the Desert Access Guides when determined to be appropriate, changes in route availability, where applicable, will be made.

PC 254: The BLM should hold public forums to address concerns of local residents regarding land-use management decisions.

Response: Please refer to the introduction of this Appendix to view the history of extensive public hearings held regarding this Plan and EIS, and read the BLM's responses to the over 400 comments received on land-use management decisions. Demographic information on commenters, including geographic representation, is found at the end of the Public Comment and Response Section (U.2). See Tables U.1 and U.2.

PC 255: The BLM should consider the needs of local residents when making land-use decisions.

Response: Chapter 5 of the FEIS describes in detail the public involvement process that included public scoping comments, public outreach and meetings, legally required public involvement steps and comment periods. All public comments received during the extended comment period were analyzed and categorized by an independent team from outside the California Desert District. See U.1.3 and U.1.4 in the Introductory Section to these Public Comments and Responses for further explanation. Following the independent comment analysis, the public concerns were analyzed and addressed by resource specialists and considered by BLM managers. The comments were not weighted by the number received or counted as vote, nor was special consideration given to comments received from a particular geographic region, organization, or individual. Future public involvement strategies will likewise be designed to provide for adequate public input, including those for future route designation efforts.

PC 256: Alternative 2 of the Final EIS should provide an accurate evaluation of recreation impacts from proposed measures to protect the desert tortoise.

Response: All alternatives, including Alternative 2, have been strengthened to more fully describe the impacts of recreational activities and vehicular access on conservation and recovery of desert tortoise. See Chapter 4, Sections 4.2.1 (No Action), 4.2.2 (Alternative 2), 4.2.3 (Alternative 3), 4.2.4 (Alternative 4) and 4.2.5 (Proposed Plan). Likewise, analysis has been strengthened for impacts on recreation activities and vehicular access. See the discussions of Motor Vehicle Access-Routes of Travel designations, Sections 4.9.1 (No Action), 4.9.2 (Alternative 2), 4.9.3 (Alternative 3), 4.9.4 (Alternative 4) and 4.9.5 (Proposed Plan), and specific to Competitive Events, Sections 4.8.1 (No Action), 4.8.2 (Alternative 2), 4.8.3 (Alternative 3), 4.8.4 (Alternative 4) and 4.8.5 (Proposed Plan).

PC 257: The BLM should consider equally the impacts from various recreational activities.

Response: Visually evident cross-country trails can be caused by recreation activities other than the use of motor vehicles. In some (though not all) situations, the visual evidence is comparable. BLM also recognizes that, in the California desert, many recreation activities, to varying degrees, depend on the use of motor vehicles for practical access. As a result, from a visual effects standpoint, BLM does consider, “equally”, these impacts of recreation activities. Furthermore, in some circumstances, non-motorized and motorized use of trails can be equal in their impacts on resources. However, there should be a reasonable understanding that the use of motor vehicles can have distinctive products (e.g., air quality and noise) that result in wildlife reactions markedly different from those caused by non-motorized uses, and one of its benefits is that it facilitates increased access for non-motorized use. While some non-motorized users may start their riding or hiking from their homes or stables, the majority do not, because of the general remoteness of the planning area. Therefore, non-motorized users are also, to some extent, motorized users. In addressing motorized use, one is addressing essentially all recreational users. The additional impacts motorized recreationists cause once they get to where they are going, if they are doing more than touring, is addressed separately as well, to the extent the additional impacts are substantially (e.g., illegal dumping, shooting, etc. See Chapter 4, Section 4.2.1).

PC 258: The Final EIS should evaluate impacts to Desert resources resulting from proposed dispersed recreation limits.

Response: Under the Proposed Plan, the extent of route closures is not substantial (see Sec. 4.9, Motor Vehicle Access-Routes of Travel Designations). Further, the overall level of motorized-vehicle use in the NEMO planning area is considered to be low (see Sec.3.13.9 Motor Vehicle Access). Even taking into account cumulative impacts, the changes to the network are not considered significant. Wilderness lands did not have a substantial network of routes before they were designated. Previous levels of use on specific routes to be closed under the Proposed Plan are not known, but considered to be low consistent with the characterization of the overall use levels in the area. Whether the limited number of vehicles that previously used the closed routes will instead use the remaining open routes or go somewhere else remains to be seen, but a shift in route use within the area is reasonable to expect. Shifting low levels of use from a small proportion of routes to the abundance of remaining routes that likewise receive low levels of use is not anticipated to affect resource values, whether recreational, natural, or cultural.

Safety impacts were considered throughout the designation process. However, route closures apply to casual use only. Access on closed routes by motorized vehicles is prohibited except primarily for fire, military, emergency, or law enforcement vehicles when used for emergency purposes or vehicles whose use is expressly authorized by an agency head under a permit, lease, or contract. (See 2.10 Motor Vehicle Access: Routes of Travel Designation).

Some people feel that various other desert closures- is a subtle but effective program to herd OHV users onto small “OHV ghettos,” leaving the rest of the desert open only to those who engage in the kind of recreation preferred by BLM. There is no evidence to support that the number of visitors will decrease as a result of route closures. An existing route network of open routes in DWMA's totaling 681 remains available for casual motorized-vehicle use. OHV users will continue to enjoy access to these parts of the California desert through use of the network of existing routes in the entire planning area, and through the route designation process in the other subregions, on a substantial proportion of those routes, yet to be determined, using the process proposed in this Plan.

PC 259: The Final EIS should analyze state-wide cumulative recreation impacts resulting from proposed management activities.

Response: An analysis addressing cumulative impacts to recreation on a statewide basis is beyond the scope of the NEMO Plan. The scope of cumulative impacts analyses to recreation in the context of the NEMO Plan is limited to the California Desert Conservation Area. These impacts are described in the cumulative effects section at the end of Chapter 4. As additional information is provided, the later plans can further refine cumulative impacts analyses, as appropriate.

PC 260: The Final EIS should contain a corrected version of the No Action Alternative for the Barstow-to-Vegas Race Course showing a gap where the Mojave National Preserve is located.

Response: The maps have been corrected to show a dashed line through the Mojave National Preserve. The route through the Preserve, although no longer available, is the route that is currently described in the CDCA Plan. That is one of the needed corrections we are addressing through this planning effort.

PC 261: The BLM should clarify language in section 3.13.9 of the Draft EIS.

Response: The quote “but these routes are quickly destroyed if vehicles travel everywhere” is from p. Chapter 3-63 of the DEIS, which erred clerically when quoting from the CDCA Plan (1980, as amended, March 1999 reprint, p.75, left column). The DEIS passage should have read “... but these resources are quickly destroyed if vehicles travel everywhere.” The same quote can be found on p.87 of the original CDCA Plan (1980).

PC 262: The BLM should not close proposed recreation facilities, as this would violate the Outdoor Recreation Act of 1963.

PC 384: The BLM should withdraw proposed closure of public lands within NEMO, as they do not have the jurisdiction to sign the proposed closures.

Response: The Proposed Plan closes an additional 6.6% of routes to motorized vehicles and limits an additional 7% of routes, not 96%, to the use of outdoor recreationists. Approximately 81 percent of routes of travel would be designated open in the areas identified for conservation and recovery of desert tortoise. An approved network of open routes and outdoor recreation facilities would be available to enjoy. No access to special areas or sites would be denied as a result of the Proposed Plan. All routes of travel proposed for closure have supporting documentation. The Proposed Plan would not result in a reduction of facilities because there remains an abundant number of routes to travel on. See Chapter 8, Figures 4a and 4b or the fold-out inserts at the back of Volume 1 for the proposed route network maps in the desert tortoise subregions. The authority to designate routes of travel is described in the Purpose and Need and Scope, Section 1.3 of the planning effort.

PC 263: The Final EIS should provide discussion of current trends regarding the reduction of motorized recreation opportunities on public lands.

Response: Cumulative impacts to recreation and motorized-vehicle access, including a discussion of current trends regarding motorized recreation opportunities on public lands, are addressed in the cumulative effects section at the end of Chapter 4 (Section 4.12). This analysis has been strengthened for the Final Environmental Impact Statement.

PC 264: The Final EIS should provide analysis of public demand for motorized recreation.

Response: The BLM recognizes that the closures will displace some OHV users who utilized the areas for recreational activities. However, BLM has made concerted efforts to minimize adverse effects to motorized recreation. BLM still allows motorized recreation opportunities on many routes throughout the planning area. The primitive experience can still be achieved from the remaining routes available for use in the desert tortoise subregions.

PC 265: The BLM should thoroughly analyze impacts from proposed route closures to motorized recreation throughout the CDCA planning area.

PC 266: The Final EIS should include an analysis of cumulative impacts to motorized recreation.

PC 301: The Final EIS should provide an analysis of impacts to the human environment from closing roads.

Response: Cumulative impacts to recreation and motorized-vehicle access are addressed in the cumulative effects section at the end of Chapter 4. This analysis has been strengthened for the Final Environmental Impact Statement (See especially Chapter 4, Sections 4.12.11 and 4.12.13).

PC 267: The Final EIS should analyze cumulative impacts associated with loss of motorized cross-country travel opportunities.

Response: Except in areas designated “open” to motorized vehicles in accordance with the California Desert Conservation Area (CDCA) Plan and the regulations at 43 CFR §8342.1, motorized cross-country travel is prohibited throughout the CDCA. Cumulative impacts associated with increasing limitations imposed over time on recreational activities that rely on the use of motorized vehicles are addressed in the cumulative effects section at the end of Chapter 4 (See especially Chapter 4, Sections 4.12.11 and 4.12.13).

PC 268: The Final EIS should address the cumulative effect of closing routes within a loop trail system.

Response: Connectivity of routes providing loop opportunities was not an issue in the NEMO planning area. No closures of routes comprising known loop systems occur in the DWMA. Some routes that were once components of loop systems were closed in areas designated as wilderness upon passage of the California Desert Protection Act of 1994 (Public Law 103-433).

PC 269: The Final EIS should contain an analysis that compares the number of miles and acres available for non-motorized recreation versus the number of miles of roads and trails available for motorized recreation.

Response: As a result of this public comment, additional information regarding route structures and composition has been inserted into Chapter 4, Section 4.9. See also Appendix Q for additional details on routes of travel process, include the inventory, and a summary table of specific route designations with rationales (Table Q.2). With respect to non-motorized use, generally public lands are available for use unless specifically closed.

PC 270: The BLM should consider the exploration and solitude values provided by motor vehicle travel.

Response: BLM agrees that considering these values (e.g., exploration, solitude) to the FEIS list of vehicle values would tend to complete the picture. Like other values, however, these are subject to BLM's regulatory designation criteria (for areas as well as trails) at 43 CFR 8342.1 for: Protecting public lands resources; promoting the safety of all users of the public lands; minimizing conflicts among the various uses of those lands; minimizing damage to soil, watershed, vegetation, air, or other resources of the public lands; preventing impairment of wilderness suitability (lands under wilderness review); minimizing harassment of wildlife or significant disruption of wildlife habitat; giving special attention to protecting endangered or threatened species and their habitats; locating areas and trails so as to minimize conflicts between OHV use and other existing or proposed recreational uses of the same or neighboring public lands; ensuring compatibility with existing conditions in populated areas (taking noise and other factors into account); locating no trails in officially designated wilderness areas; and, locating areas and trails in natural areas only if the authorized officer determines that OHV use there will not affect, adversely, the values (e.g., natural, esthetic, scenic) for which the natural areas were established.

Also, "Due to higher levels of resource sensitivity in Class L, vehicle access will be directed toward use of approved routes of travel. Approved routes will include primary access routes intended for regular use and for linking desert attractions for the general public as well as secondary access routes intended to meet specific user needs." [CDCA Plan, 1982 Amendment #3].

PC 271: The BLM should recognize that most travel on primitive and four-wheel drive roads is light.

Response: BLM recognizes these current conditions of use (Page 3-64 DEIS). It also recognizes that population growth trends are likely to be a continuation of the last 20 years in the Las Vegas Valley (See 4.12 discussion). By definition, any plan, the NEMO Plan included, may anticipate and build in reasonably foreseeable future conditions as a valid component—in fact it is expected that a planning document should do so. It is with potential growth in this planning area's future and with the lessons of other areas within the CDCA that have already experienced such growth in mind, that a long-term balance is sought.

PC 272: The Final EIS should provide clarification between impacts of off-road vehicle use that occurs because of straying off of routes and those that occur during normal use of routes.

Response: This analysis has been strengthened and clarified for all alternatives in the FEIS. The primary opportunity for impacts off of existing routes are associated with the various vehicular camping options along open routes. These range from using disturbed areas between 50 feet and 300 feet of centerline of the route. See Chapter 4, Section 4.9.1 (No Action) and other alternatives for the analysis of impacts.

PC 273: The BLM should inventory and preserve existing motorized routes.

Response: A comprehensive inventory of all existing motorized routes began in 1996 and continues. Individual route inventory sheets were prepared for the majority of routes included in the inventory. From the data collected, primary information was extracted and inserted on-the route (e.g., some non-existent routes; see definitions in Chapter 2, Section 2.10) Within the desert tortoise subregions, route designation occurred according to 43 CFR 8342.1, and additional criteria (See Chapter 2, Section 2.10.5) The process is further detailed in Appendix Q, along with specific route designations.

PC 274: The BLM should restrict motorized use to designated areas.

Response: Use of vehicles is restricted to designated routes of travel except in OHV open areas. The existing Dumont Dunes OHV open area in the Planning Area is classified open for motorized use per the CDCA Plan, and is not subject to route designation. All routes of travel and navigable washes in the two inventoried subregions (Category I desert tortoise habitat) are designated open, closed, or limited in the Proposed Plan and each alternative. Other subregions will be subsequently inventoried and designated in the same manner, throughout the planning area.

PC 277: The Proposed Plan should ensure the off-highway vehicle exclusion barrier does not interfere with the vehicle route to Sperry and up Sperry Wash.

Response: Currently, any OHV exclusion barrier installed is the result of evidence of vehicle excursions off the subject route. If such a barrier is installed in or along the (legislated) Sperry Wash corridor, it would be the result of evidence of vehicle traffic into the Kingston Range Wilderness lands that border the corridor on both sides. If such a barrier is installed beyond the south or northeast ends of that corridor, it would be the result of evidence of vehicle use of an inappropriate nature (including parking and/or stopping more than 300 feet from the route, unless BLM, as required by its duties and/or commitments, applies a lesser dimension). When the Sperry Wash Corridor is examined as part of a subregion for Routes of Travel designation, alternative strategies may be examined, consistent with CDPA provisions.

PC 282: The BLM should allow motor vehicle access in Dumont Dunes.

Response: The Proposed Plan did not make motor vehicle access designations in the Dumont Dunes Off-Highway Vehicle Open Area through this planning effort. The area remains classified as "Open" for vehicular use. No route designation occurs in areas classified as "Open" for vehicle use. Vehicles are permitted throughout this and other OHV Open areas, except where specifically signed or otherwise closed (e.g., fenced), which may include along during special activities, such as along a racecourse, or around defined sensitive areas.

PC 285: To ensure continuing motorized recreation opportunities, the BLM should create new trails when existing trails are closed.

PC 286: The BLM should maintain and expand the existing trail system in the CDCA planning area.

PC 287: The Final EIS should ensure that opportunities for motorbike recreation would continue.

PC 288: The BLM should provide loop trails on public lands for motorized recreation.

Response: BLM is obligated under regulations and Executive orders to designate routes as described in the introduction to Section 2.10. To implement the requirement criteria were developed for the Planning Area for designating routes on BLM lands that reflect the general intent of regulation. These criteria are listed in Chapter 2, Section 2.10.2. Routes are proposed closed only where the criteria apply; however, in some cases, depending on the alternative, the use need of a route was more compelling than applying the criterion and the route was designated open. The other values weighed in the decisions are given for each alternative. For the Proposed Plan, consideration was given to establishing a primary transportation network and providing access to recreation destinations, and within this context, considering some washes for the transportation network. Chapter 4.12 describes the cumulative effects desert-wide from designation of routes. In designating routes no distinction is made for class of vehicle, as there are few, if any, vehicle-type conflicts in the Planning Area. Adaptive management is part of land use planning and plan change. Changes to route and area designations can occur based upon local and regional desert tortoise conservation and uses trends and changes.

PC 289: The BLM should consider mitigation measures prior to motorized use restrictions.

PC 290: The Final EIS should include mitigation measures to reduce impacts to off-road vehicle recreation.

Response: BLM is bound by its regulations at 43 CFR 8342, which require designation of public lands areas and trails as either open, limited or closed to off-road vehicles. In BLM's view, a route designation of "limited" would be evidence that BLM has considered and adopted mitigation measures. If "motorized use restrictions" are mitigation measures (i.e., these are concurrent rather than sequential), then this public concern, in reality, may be focused on route closures rather than "restrictions". No areas are closed to motor-vehicle access-the route network has 6.6 percent more closed routes and 7 percent more limited routes than the present network. Permitted event may continue, under terms of the programmatic biological opinion essentially as they have for the last ten years.

PC #: 292 Public Concern: The BLM should not use noise from motorized vehicles as a reason to limit motorized activities.

Response: Noise was not an issue and not included as a criterion developed for the NEMO planning area routes designations.

PC 293: The BLM should ensure adequate trail signing and maintenance along travel routes.

PC 331: The BLM should choose an alternative that ensures the “closed unless posted open” policy.

PC 332: The Final EIS should establish that motorized travel routes through desert tortoise habitat are closed unless posted open.

Response: Upon signature of the FEIS, an implementation, monitoring, and maintenance plan will be written which will address signing, monitoring, and maintenance of routes and washes. The specific signing strategy for the area will be established locally, but see also Appendix F-*Surface Disturbance and Rehabilitation Strategies* which may apply to closed routes as well.

PC 296: The BLM should eliminate competitive vehicle events in the Desert Wildlife Management Areas.

PC 297: The BLM should limit competitive vehicle events to Open Intensive Use Areas.

Response: Competitive vehicle events are proposed to be eliminated in desert tortoise DWMA's in the Proposed Plan. Under the Proposed Plan (Chapter 2, Section 2.9.5), “Competitive vehicle events may only be held in MUC I with an area designation of “Open”, or on specified recreation routes delineated and designated in the CDCA Plan.”

By adoption of this provision, through use of specified recreation routes delineated and designated in the CDCA Plan, BLM would satisfy the 43 CFR 8342.1 mandate by basing such designations on protection of public lands resources, promotion of the safety of all users of the public lands, and minimization of conflicts among the various users of the public lands. Through location of trails, BLM also would satisfy the 43 CFR 8342.1(c) mandate, taking into account noise and other factors, by minimizing competitive event conflicts with other existing or proposed recreational uses of the same or neighboring public lands, and ensuring the compatibility of competitive events with existing conditions in populated areas. Note that, by minimizing the potential number of competitive events held outside of OHV Open Areas annually, BLM proposes to minimize competitive event conflicts with other existing or proposed recreational uses of the same or neighboring lands.

PC 298: BLM should allow some permitted motorized recreation events in Desert Wildlife Management Areas.

Response: Noncompetitive, Dualsport events will still be permitted seasonally through the Desert Wildlife Management Areas in the Northern and Eastern Mojave Planning Area, under the existing district wide biological opinion. All open routes will be available for such events, unless specifically limited for such use, which is approximately 81% of the existing network of routes.

PC 299: The BLM should reopen the Barstow to Vegas race course.

Response: Under NEMO Plan (No Action) Alternative 1, competitive event proposals would continue to receive the same consideration they have received since the last Barstow to Vegas event (1989).

Under Alternative 2: “Competitive vehicle events may only be held in MUC I with an area designation of “Open”.

Under Alternative 3, for all public lands outside areas designated as “Open”, regardless of MUC, competitive event permits would be subject to compliance with a set of criteria (see FEIS 2.9.3).

Under Alternative 4 (see 2.9.4), BLM would designate a replacement Barstow to Vegas Race Course and allow one event per year, the course to avoid critical desert tortoise habitat, ACECs, wilderness areas and other sensitive resources consistent with Alternative 3 criteria.

Under BLM's Preferred Alternative 5 (Similar to Alternative 2, but with an additional allowance): "Competitive vehicle events may only be held in MUC I with an area designation of "Open" or on specified recreation routes which have been delineated and designated in the CDCA Plan." See Chapter 4, Section 4.8, particularly 4.8.1 for impacts of the event, and 4.8.5 for impacts of the Proposed Plan.

PC 300: The BLM should increase law enforcement presence during motorized recreation events near Dumont Dunes.

Response: This issue is outside the scope of this planning effort. Please provide your input to the appropriate Authorized Officer (Barstow Field Office).

Travel System

PC 302: The Final EIS should provide information on the positive trends and aspects of road travel in the desert.

Response: Adequate information on desert travel is provided to address the issues in this plan. BLM's intention here is to fulfill its obligations under the EIS requirements of the National Environmental Policy Act (NEPA). Additional information may be found in the Motor Vehicle Access Element of the CDCA Plan.

PC 303: The Proposed Plan should clarify the long-term goals for travel route closures.

Response: The Proposed Plan represents the long-term goals for the Routes of Travel network in the desert tortoise subregions. In other words, 11 percent of the routes would be permanently closed, 8 percent would be limited, and approximately 81 percent would be open to motor-vehicle use. The long-term goal for closed routes would be their rehabilitation, either by natural or assisted means. Rehabilitation techniques are discussed in Appendix F.

PC 305: The BLM should conduct an on-the-ground assessment of multiple-use values for all existing travel routes.

PC 325: The Final EIS should provide an analysis of the proposed route network for the NEMO area.

Response: Additional information on the need for this action is set forth in the Rationale section of this Decision Record. The biological and scientific data which identifies the impacts of motorized vehicle use on desert tortoise and its habitat is set forth in the References section of this Decision Record.

PC 307: The BLM should explain the change of definition for the term “maintained road.”

Response: The definition of a maintained road as described under the NEMO Plan (see Sec. 2.10, Motorized-Vehicle Access-Routes of Travel Designations), thereby modifying the definition appearing in the California Desert Conservation Area Plan, was established to distinguish between two categories of dirt routes, these being routes maintained with the use of machines and routes maintained simply by the continuous passage of vehicles. Routes in the first category (along with paved roads) are designated “open” under the Proposed Plan as an exception to application of biological parameters (see Chapter 2, Sec. 2.10.2, 2.10.3, 2.10.4, or 2.10.5, depending on alternative), unless it is determined that use must be limited for other reasons. Routes in the second category are subject to application of the biological parameters.

Paved roads, maintained dirt routes, and recreational touring routes comprise the backbone of motorized-vehicle access in the desert tortoise subregions. Unmaintained dirt routes designated “open” or “limited” provide additional opportunities for motorized recreation, consistent with criteria under the Proposed Plan. These Plan criteria are sufficiently flexible to provide for additional opportunities in route subregions with fewer conflicts or provide for additional closures in subregions with more conflicts..

PC 308: The Final EIS should disclose decision criteria for road closures.

PC 309: The BLM should revise criteria for road closures.

PC 310: The BLM should adopt the National Park System’s process for road closure decisions.

Response: Criteria relative to the NEMO route designation process are described in Section 2.10 (Motor Vehicle Access: Routes of Travel Designations). Criteria that relate to recovery of the desert tortoise and protection of special status species and their habitats, and developed in furtherance of the criteria at 43 CFR §8342.1, are excerpted from Sections 2.2 (Threatened and Endangered special status species protection: Desert Tortoise) and 2.4 (Threatened and Endangered plants). Application of these criteria on a route-specific basis is provided in the Final Environmental Impact Statement (see Appendix Q). Revisions to designations proposed in the Draft Plan/EIS in response to public comment and further BLM staff review are described on a route-specific basis. Decisions pertaining to designating routes as “open,” “limited,” and “closed” in the desert tortoise subregions are based on the identified purpose and need for the Proposed Plan, which includes providing for recovery of the desert tortoise and its habitat, as well as providing for a reasonable vehicle access network (see Sec. 1.3, Purpose, Need and Scope).

PC 311: The Final EIS should disclose decision criteria for closure of historic travel roads.

Response: During the route designation process, several of the routes identified on the maps used to develop the route network in the CDCA Plan could not be located on the ground today. Many of the routes referenced in this comment have been located, identified, and included in this inventory. These routes were identified by on-the-ground verification. No statistical information is available to give exact percentages on how many old routes as opposed to newer or more recent routes are being closed. Determining the specific age of routes is difficult and generally unknown except for those that lead to destinations (e.g., popular camping sites, mining sites, old town sites). Historical trails and routes (See Chapter 3, Section 3.8.5 Historical Trail Touring and Table 3-3) located within the planning area are described further as well as how they have been impacted by recent closures.

PC 314: The BLM should focus its efforts on educating the public regarding responsible road use instead of closing roads.

PC 322: The BLM should educate the public on appropriate land use near waterways instead of limiting access.

Response: BLM will be doing extensive education and outreach in addition to the closures to protect sensitive resources. We will seek funding from grant programs, including the California OHV Grant program, to provide interpretive outreach through written materials, kiosks, and web pages, to protect the desert tortoise and other resources. Briefings on the need and methods to protect desert tortoise and its habitat will continue to be presented to participants at organized events. The Bureau will continue to emphasize and incorporate Tread Lightly and Leave No Trace principals in its programs. It is also anticipated that through monitoring efforts, BLM will have the ability to collect data to assist them in identifying alternative measures to protect the tortoise.

PC 316: The BLM should reconsider closing duplicate routes.

Response: No primary destinations or locations have been blocked by any of the route closures. BLM does not anticipate a reduction in motor vehicle use within the DWMA's. BLM expects OHV users to continue to enjoy the affected areas on the 681 miles of remaining open routes in the desert tortoise subregions. The significance of a route, which may appear as a duplicate of another, is under more scrutiny when it is located in critical tortoise habitat. If the Bureau used the rationale presented here, every route could probably be justified on a recreation aspect to remain open, which would not be consistent with 43 CFR 8342.1 criteria.

PC 317: In order to maintain public support and to ensure quality recreation opportunities, the BLM should allow primitive roads to remain open.

Response: The BLM recognizes that the closures will displace some OHV users who utilized these routes for recreational activities. However, BLM has made concerted efforts to minimize effects to motorized recreation. For every route proposed for closure, there are other routes remaining open to access sites or for vehicle touring. BLM still allows motorized recreation opportunities on 681 open routes in the desert tortoise subregions. The primitive experience can still be achieved from the remaining routes available for use (See Chapter 4, Section 4.9.5 analysis of impacts of the Proposed Plan).

PC 318: The BLM should consider road reclassification as an alternative to road obliteration.

Response: Under the Proposed Plan, the rehabilitation of routes designated "closed" constitutes one of several options to exclude access. Signing and barricading closed routes are identified as other options to accomplish the task (see Sec. 2.10, Motorized-Vehicle Access-Routes of Travel Designations). However, the Proposed Plan does not identify mechanisms on a route-by-route basis for implementing route closures. Site- and circumstance-specific considerations will determine the most appropriate and effective way to exclude access for individual routes. Where rehabilitation of routes is determined necessary, project-specific analysis will be completed prior to implementation.

The comment suggests that a more viable alternative to route obliteration is reclassification of routes, as either restricted-width or unrestricted-width non-motorized trails, but fails to explain how such classifications would be applicable to the NEMO Plan, and, if a network of motorized or non-motorized trails were set up, how such a network would be enforced. All motorized routes in the NEMO planning area are considered as “restricted-width trails.” Except for the purposes of stopping, parking, and vehicle camping for which specific distances from the centerline of a route are identified under the Proposed Plan (see Sec. 2.10), travel beyond the edge of the roadbed is considered as cross-country travel. Cross-country vehicle travel is not permitted in the California Desert Conservation Area (CDCA) except in off-highway vehicle recreation areas specifically designated for such use. The term “unrestricted-width trail” has no meaning in the context of motorized-vehicle access in the CDCA. The individual who submitted the comment did not provide a definition of this term. Currently non-motorized users are not restricted to trails. A hiker may use routes, existing trails within wilderness, designated hiking trails, game trails, or may wander cross-country.

PC 319: The Proposed Plan should establish a process to rescind travel route closures.

PC 320: The BLM should reopen roads when science proves they are not detrimental to desert tortoise.

Response: Route designations of “closed” and “limited” apply to the casual user. Access on these routes can be obtained under permit or by authorized use (e.g., law enforcement, search and rescue, mining, Department of Game & Fish). Access by foot or horseback would still be allowed. One of the recommendations in the Tortoise Recovery Plan was to close one-quarter mile of a route that end at a water source to protect sensitive species. Not all routes that terminate at a water source were proposed for closure. Only in those cases where it was deemed necessary was the closure proposed. All route designation decisions are plan amendments to the CDCA Plan. Thus, subsequent plan amendments may modify them, as appropriate to changing circumstances or information.

PC 323: The BLM should consider access needs for fire fighting when making road closure decisions.

Response: In emergency situations, access needs for fire fighting or other emergency services take precedence over route designations. That said, less than 12% of routes on public lands have been proposed for closure within the 2 desert tortoise subregions. This is not anticipated to result in changes to the access capabilities for emergency services in the area. In future route designations access for emergency services will be considerations, particularly where substantial wilderness areas exist and motorized access to and through these areas is limited.

PC 324: The BLM should recognize that using the Proposed Plan to close roads and trails is not legal.

PC 338: The BLM should disclose all information relevant to route designation criteria.

Response: Appendix Q describes the route inventory and designation process conducted by the BLM for the Proposed Plan. An attempt was made to complete an on-the-ground inventory of 100% of the routes within the planning area. In 1993, the goal was to drive every route in the planning area and record their locations. However, between 1993 and 1998, data in old databases were lost and all routes had not been driven. Routes, which had been inventoried, were provided on maps and distributed to the public in 1998 and 1999. Comments were solicited regarding the completeness and accuracy of the route inventory. Few route-specific comments were received by the BLM prior to release of the NEMO Plan/DEIS.

Executive Orders 11644 (87 F.R. 2877) and 11989 (42 F.R. 26959) established route designation criteria, which in turn, were codified as regulations at 43 CFR §8342.1 (These are reproduced in Chapter 2, Sec. 2.10, Motor Vehicle Access-Routes of Travel Designations). These regulations provide general guidance for the route designation process but do not (and could not) identify specific actions to be taken in response to area-specific circumstances such as those occurring within the planning area. Hence, in furtherance of the regulatory route designation criteria and the purpose and need of the plan (Chapter 1, Section 1.3), various parameters were developed through the NEMO Plan including those that provide for recovery of the desert tortoise, protection of other special status species and their habitats, and ensure that public lands health standards are met

PC 329: The Proposed Plan should eliminate the existing route network approach.

Response: This change is provided for in alternatives for the routes of travel designation process (See Chapter 2, Section 2.10).

PC 330: The BLM should consider extending Highway 178 from Trona Pinnacles to the bottom of Death Valley.

Response: National Park Service lands in Death Valley National Park (DVNP) are outside the scope of the NEMO Plan. It appears that DVNP lands would be affected by any proposal to extend State Highway 178 to the Trona Pinnacles. Caltrans and DVNP would be the two points of contact for such a proposal.

PC 333: The BLM should justify the proposal in Draft EIS Alternative 2 to keep 8,000 miles of road open.

Response: This comment prompted the affirmation of a prominent typographical error in the document, a missed period. The number of miles is reported in the DWMA's on page XV was in error. The total mileage inside the desert tortoise subregions, is 850 miles, including additional inventory data since the DEIS. However the percentages portrayed in error are similar for the corrected mileage numbers, except they did not include approximately 50 additional miles that were the result of additional information (e.g., inventory information, mapping and GIS errors, single-counting of duplicate routes, etc). FEIS Proposed Plan network also includes modifications based on public comments on the DEIS route network. The number of open miles is 681 (81%). The number of limited miles is 69 (8%) and the mileage for closed routes is 94 (11%). There are also approximately 72 miles of unclassified routes within the desert tortoise subregions (e.g., private lands, railroad rights-of-way).

PC 334: The BLM should consider closing more roads in Desert Wildlife Management Areas than proposed in the Draft EIS.

Response: All forms of recreation in the California desert usually require some use of motorized vehicles. At a minimum, a vehicle is necessary to access sites for non-motorized activities and opportunities for non-motorized recreation are not substantially constrained by existing access limitations. Restrictions on motorized-vehicle travel and the potential for future restrictions is increasing, including limitations on where one can park and stop their vehicle, as well as where one can 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. In general, activities involving the use of motorized-vehicles have become more and more limited over the last quarter century, as more and more people have become interested in vehicle touring and conflicts have increased.

Enactment of the California Desert Protection Act of 1994 further changed the picture for motorized-vehicle access with designation of 69 wilderness areas, 1.2 million acres of which are located in the NEMO Planning Area. It should be recognized that these areas were recognized as wilderness in part because their existing route network was sparse—one piece of evidence that these areas were essentially “untrammled by man”. The motorized access that did exist within them, provided a window to some of the most breathtaking country within the CDCA. Motorized Corridors have been provided through some of these areas, but the recreationist can no longer get off the beaten track in a vehicle. As required by statute, casual use of motorized vehicles in wilderness is now prohibited.

This history does provide a relevant context for the current route designation process (See Chapter 4. Cumulative Effects Section 4.12). The intent of the Proposed Plan, based on recent changes and anticipated future changes to motor-vehicle access and to development potential of nearby areas (Las Vegas Valley), was to apply 43 CFR 8342.1 criteria to the extent needed to accomplish the purpose and need of the plan(Chapter 1, Section 1.3).

PC 337: The BLM should analyze habitat impacts prior to closing roads.

Response: Analyses of impacts on the human environment from the Proposed Plan and each alternative, including the effects of designating routes of travel as “open,” “limited,” and “closed,” are presented in Chapter 4. “Human environment” is interpreted comprehensively to include the natural and physical environment and the relationship of people with that environment (40 CFR §1508.14). Analyses have been strengthened for the Final Environmental Impact Statement.

Various alternative strategies to accommodate motorized-vehicle recreation while providing for recovery of the desert tortoise and protecting special status species and their habitats are described in Chapter 2 (see Sec. 2.10.1, 2.10.2, 2.10.3, 2.10.4, and 2.10.5, Motorized-Vehicle Access-Routes of Travel Designations).

One alternative suggested by the public in lieu of closing routes is to increase signage thereby alerting off-highway vehicle users to the sensitive resources adjacent to routes on which they are traveling. This alternative also fails in responding to the CDCA Plan’s route designation process. Instead, it is another mechanism to enhance compliance with route designation decisions, and is already addressed in each of the alternatives to implement these decisions (see Sec. 2.10 and Appendix Q regarding the installation of information kiosks that address resource protection and other matters).

Given the extent of motorized-vehicle access afforded under the Proposed Plan (see Sec. 2.10.5) and the determination that impacts to motorized recreation are not substantial (see Sec. 4.9.5, Recreation Management), measures to mitigate such impacts, including actions that might limit the magnitude of the action (e.g., seasonal or alternating closures) or compensate for the impact by replacing or providing substitute resources (e.g., development of new routes corresponding to the extent of routes designated “closed”), are not necessary. The Proposed Plan does not substantially affect opportunities for motorized recreation. Other route designation subregions in and adjacent to the planning area can be expected to provide additional opportunities to specific groups that are somewhat affected, because, to date, route designation has only been completed within the desert tortoise subregions, and because the NEMO planning area offers less extensive OHV Open Area opportunities than adjacent planning areas.

Route Designation

PC 339: The BLM should retain interim route closures until a detailed route designation process is in place.

Response: No routes were temporarily closed in any of the proposed DWMAs as a result of the Center for Biological Diversity Lawsuit. Therefore, this comment does not apply in the NEMO planning area. Whether a route is used once a year or extensively does not justify whether or not it should be closed, it is just an element used in the decision making process. Several diverse user groups provided input to routes during the route designation process wherein each route was looked at and criteria applied. Nineteen percent of the routes in the desert tortoise subregions are proposed to be restricted to casual users either with a designation of “closed” or “limited, an increase of over thirteen percent from the No Action Alternative.

PC 340: The Final EIS should clarify the description of alternatives for designating routes.

Response: The description of alternatives is further clarified in Sections 2.10.1 through 2.10.4 of the Final EIS. See also Chapter 8, Figures 4a through 4h and the fold-out maps of the Proposed Plan at the back of Volume 1.

PC 341: To help in making route closure decisions, the BLM should assign “beneficial use” designations to travel routes proposed for retention.

Response: The comment suggests that “beneficial use” designations (e.g., through-travel, hunting access, access to a specific area or natural resource, etc.) assigned to each route would be useful in determining whether additional existing routes are redundant and could be closed. Route designations are justified in Appendix Q: Route Attribute Table. All designations in the desert tortoise subregions were evaluated and a rationale provided with the open, closed, or limited designation. Recreational purposes (e.g., vehicle touring, rock hounding, hunting, hiking, camping) and/or access to (e.g., private property, wilderness, National Park Service, Nevada) of routes were analyzed along with the criteria referenced in section 2.10 Motor Vehicle Access.

This section also defines a redundant route 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. Further, it is stated that identifying redundant routes requires that judgments be made relative to the uses and purposes of certain routes. A route may be considered redundant based on proximity to another route despite any knowledge about its use and purpose. Whether it is recommended for closure as a redundant route may then be dependent on its apparent use and purpose, its contribution to maintenance of a viable route network, its proximity to open navigable washes, and/or the potential for management of the route as “closed.”

Since judgment is usually required in ascertaining a route's redundancy (e.g., determining the recreational value of one route relative to a near-by route is a process subject to a host of variables that have differing degrees of importance to different individuals), the presence or absence of resource values that would be adversely affected should the route remain available for motorized-vehicle use is an important consideration in making a recommendation about its designation as "open" or "closed." In the final decision-making process, the designation of any route as "open" must be in accordance with the regulatory route designation criteria at 43 CFR §8342.1 (These criteria are reproduced in Sec. 2.10, Motorized-Vehicle Access-Routes of Travel Designations). In furtherance of these criteria, the closure of redundant routes shall be strongly considered to protect and enhance habitat for special status species. Upon application of the regulatory and NEMO Plan-specific criteria and a determination that the criteria have been met in designating a particular route "open" that some individuals might consider as redundant, then justification for recommending its closure simply because of its perceived redundancy may be inappropriate. The public review process in this regard, therefore, assists the agency in determining if its assertions of redundancy are accurate. See also Response to PC # 105 for tips on participating in this process as route designation continues within the NEMO planning area.

PC 342: The BLM should close non-designated travel routes in the CDCA planning area.

Response: Non-designated routes are considered either a major, county maintained route that BLM does not consider in the route designation process or a route that is non-existent.

Both of these routes are discussed in the Appendix Q. Routes, which are no longer needed or provide access to a site (e.g., recreation site, water source, cultural site, mining, range improvement) will be rehabilitated.

PC 343: The BLM should designate specific routes for specific activities.

Response: As for making trails specific to certain activities, public use is diverse and BLM remains sensitive to its multiple-use requirements. Visually evident trails, with their associated surface disturbances, can be caused by recreation activities other than the use of motor vehicles, and, in some situations, the visual evidence can be comparable. Under some circumstances, non-motorized use can rival motorized use in its effects on resources (e.g., disturbance of wildlife at particularly sensitive times).

PC 344: The Final EIS criteria for route designation should include national, esthetic, and scenic values.

PC 349: The FEIS should clarify criteria for determining roadway impacts to viewsheds.

Response: BLM remains bound to the route designation criteria in its regulations at 43 CFR 8342.1. Among those criteria are the mandates to base all route designations on the protection of the resources of the public lands, locate trails to minimize damage to resources of the public lands (e.g., soil, watershed, vegetation, and air) and prevent impairment of wilderness suitability. BLM is to locate no trails in officially designated wilderness areas or primitive areas. Under 43 CFR 8342.1(d), BLM is to locate trails in natural areas only if the authorized officer determines that OHV use there will not adversely affect the values (e.g., natural, esthetic, scenic) for which those areas were established.

PC 345: To comply with the California Desert Protection Act, the BLM should post the Greenwater Canyon as a dead end.

Response: Given the practicalities of perpetual maintenance on public information signs in extremely remote locations, BLM suggests that effective boundary marking and access management be included as a discussion item in a future NPS/BLM coordination meeting.

PC 346: The BLM should restrict the construction and expansion of utility corridors.

Response: No new utility corridors are proposed in the NEMO planning area. Any new proposed utility corridors would require a plan amendment and public participation.

PC 347: The BLM should provide information regarding locations of proposed fee demonstration projects.

Response: The Recreation Fee Demonstration Program was incorporated in the California Desert Conservation Area in 1998. The need arose in the Fiscal Year 1996 Interior Appropriations Bill (under the Omnibus Consolidated Rescission and Appropriation Act of 1996, section 315 of Public Law 104-134) in which Congress charged agencies to be more aggressive in their fee collection. Collection of fees is one method to assist in meeting growing operations and maintenance needs for programs. The California Desert will continue to evaluate sites for the possibility of future fee collection. BLM is collecting these fees because of funding shortfalls for routine maintenance, additional Law Enforcement, and resource protection at popular sites.

PC 348: The Final EIS should contain an evaluation of impacts from cross-country hikers.

Response: Chapter 4 has been strengthened and provides additional information and analysis on impacts. For example, see Section 4.9.1, impacts to vegetation, soils and related resources and 4.2.1, in the same sections.

PC 350: The BLM should consider the needs of disabled visitors.

Response: The comment relates the availability of motorized-vehicle access to opportunities for disabled visitors. It suggests that handicapped, elderly, or physically impaired individuals can only recreate on motorized roads and trails. The BLM recognizes that many of the California desert's most attractive resources can only be enjoyed by use of vehicle access routes (see Sec. 3.8 Recreation Resources and Activities). It stands to reason, therefore, that substantial limitations on motorized-vehicle access would concomitantly affect opportunities for all visitors to experience and enjoy the myriad of resource values contained within the California desert, and may especially impact those with no other options such as travel on foot, horseback, or bicycle due to physical limitations or impairments.

As required by the regulations at 43 CFR §8342.1, the designation of areas and trails (routes) as either “open,” “limited,” or “closed” shall be based on the protection of the resources of the public lands, the promotion of the safety of all the users of the public lands, and the minimization of conflicts among various uses of the public lands, and in accordance with specific criteria (see Sec. 2.10, Motorized-Vehicle Access/Routes of Travel Designations, for a description of the criteria). Under the Proposed Plan, routes of travel are so designated in accordance with the regulations. The analysis in Chapter 4 addressing limitations on motorized-vehicle access, hence recreation, concludes that such limitations under the Proposed Plan and other alternatives are not substantial (see Section 4.9, Impacts to Recreation and Impacts to Vehicle Access for each alternative). Effects that have occurred are regional in nature, and the result of anticipated and unanticipated cumulative effects (Section 4.12) Ample opportunities remain for the public to experience and enjoy the resources available within the planning area, including within the desert tortoise subregions.

PC 351: The BLM should restrict use of firearms within Desert Wildlife Management Areas.

Response: The Desert Tortoise Recovery Plan recommended that discharge of firearms, except for hunting of big game or upland game birds from September through February, should be prohibited in DWMA's. This was presumably based on a study (Berry 1986) that showed a high incidence of gunshot deaths on some permanent study plots. However, for the two permanent study plots in the NEMO Planning Area, the incidence was very low. Specifically, on the Ivanpah Valley plot, adjacent to the BLM's proposed Ivanpah Valley DWMA, 1 of 31 (3.1%) were shot. On the Goffs Plot, adjacent to BLM's proposed Piute-Fenner DWMA, 0 of 34 (0%) were shot. These low numbers together do not indicate a need to restrict further shooting at this time. Monitoring of sites will continue. BLM's expectations are that use of firearms will continue not to be problematic in the planning area, unless such use increases dramatically.

PC 353: The BLM should allow camping and campfires in the desert.

Response: All alternatives provide for camping in the desert, including in DWMA's. A range of alternatives is provided, which include limitations on groups. Campfires are permitted or prohibited based on local fire conditions at any particular time. This is determined and posted by each County fire warden.

PC 355: The BLM should restrict camping to designated areas.

Response: Large, well-established campgrounds are available in the Mojave National Preserve and in Death Valley National Park, where visitor use is relatively high. On BLM lands in the NEMO Planning Area camping intensity is generally low. Rules for camping on BLM lands are that camping is to occur in previously disturbed sites (see PC#78). Many visitors to desert areas are seeking solitude and quiet. This is offered under the current disseminated camping rules, to occur within 100 or 300 feet of open routes if motor-vehicle based, depending on the location. In the NEMO Planning Area, a proliferation of camping sites has not occurred.

PC 357: The BLM should consider opening Wilderness Study Areas for visitors with disabilities.

Response: The route designation process for wilderness study areas in this plan amendment will be similar to that for designation on other public lands. However, the regulations for route designation and the statutory and policy requirements for wilderness study area management provide that such designations will not impair wilderness suitability. The opening of new routes would impair and the continued use of some existing routes might impair the wilderness suitability of the wilderness study areas. As such, we do not anticipate an expansion of opportunities for motorized use in the wilderness study areas.

PC 358: The Proposed Plan should establish guidelines for access to private inholdings.

Response: As you note, there are statutory provisions at section 708 of the California Desert Protection Act of 1994 [CDPA] for access across public land in wilderness areas and federal lands in National Conservation Units to non-federal inholdings. The BLM has already established guidance for such access across BLM wilderness in regulation at 43 CFR 6300 and policy. Considerations of consistency of that guidance with National Park Service guidance are beyond the scope of this plan.

Guidance for access to cross non-wilderness public land to inholdings is provided at 43 CFR 2000. In essence, such access under conditions of casual use does not require a permit. If such use does not constitute casual use [e.g., maintenance of a route], then a right-of-way is required.

PC 359: To facilitate an experience of exploration, the BLM should avoid the overuse of road signs.

Response: BLM will install signs on closed routes as well as routes that are open to encourage use on open routes when appropriate. Additional, signs with positive messages to stay on open routes will be installed in high use areas and near wilderness boundary routes. To avoid or reduce sign proliferation, kiosks or wayside exhibits will be strategically placed where the public is primarily accessing both open and closed areas depicting open and closed routes/washes and protective measures for sensitive resources. Brochures and maps will be developed for distribution depicting the route designation changes. The public can also obtain information regarding the route designation changes on our web site at www.ca.blm.gov.

General Human Environment, Utilities, Recreation, and Travel

Natural Resource Commodities

PC 360: The BLM should not use NEMO to facilitate or support Section 10 permit applications.

Response: The proposed plan is not intended to support a habitat conservation plan covering private lands, as provided for in Section 10A of the Endangered Species Act. A habitat conservation plan is being prepared for adjacent areas in the West Mojave, and one is currently in place for the nearby Las Vegas Valley. San Bernardino County and Inyo County did not express interest in a habitat conservation plan for the NEMO Planning Area at the outset of the planning effort and again when the biological recommendations were being developed with FWS and CDFG (1998). See also the response to comment PC#133.

Grazing Management

PC 361: The BLM should analyze sustainability of desert lands for livestock grazing.

Response: Grazing allotments provide opportunities to use perennial and/or ephemeral types of forage. Lessees of allotments must meet the terms and conditions for grazing use covering period of use, areas of use, amount of grazing use, adherence to standards, type of livestock, maintenance and construction of facilities, and miscellaneous prohibitions. Provided these conditions are met grazing use can continue. In essence, grazing use has proven to be suitable if the lessee can continue to operate under terms and conditions to protect the forage resource and the environment.

The forage allocation was based in part on historical grazing use, but primarily upon vegetative inventories. The allotment produces a specific amount of forage during an average year from perennial grasses and shrubs. That prescribed forage is the permitted use level. Ephemeral forage is allocated whenever sufficient forage production occurs. However, some years do not produce average amounts of perennial forage, and if forage is insufficient cattle are moved to areas in the allotment where forage consumption is lower or must be removed from the allotment altogether. Once cattle are removed from the allotment they must be feed on private lands, sent to private pasture, or sold and others purchased later when the dry period passes. These activities produce and consume financial capital that can be difficult for the lessee to recoup with a series of dry years, and as consequence, some operations may proceed at lower level of grazing use until finances and adequate forage permit increased use.

PC 362: The Final EIS should address the purpose and need for limiting grazing operations.

Response: Under Chapter 1, Section 1.3, Purpose, Need, and Scope, the needs for action or change in management are detailed. The issues affecting the desert tortoise are discussed later in the same Chapter in the Major Issues Section for T&E Species Conservation and Protection: Desert Tortoise. Dietary overlap between cattle and desert tortoise, and environmental stressors of the desert tortoise are discussed in this section. Later in the same section, a number of questions are raised that need to be addressed in Chapter 2 through management actions displayed in the alternatives. This approach not only prescribed alternatives/actions for cattle grazing in tortoise habitat, but wild burro management, vehicle route designation, and others.

PC 363: The BLM should require that grazing research be based on science.

Response: All future research efforts to examine impacts of grazing activities on listed species would be based on sound scientific protocols and established methods. Prior to development of field data collection phase, aspects of the investigation would undergo a literature review for similar efforts and techniques. Once the effort has been quantified, BLM would explore different approaches to accomplish the research in the time specified. There are many ways in which to complete this research, but the most obvious ones for the BLM would be to contract, complete the effort with current staff, work with staff from one or more local universities or a combination of two or more options.

PC 364: The Proposed Plan should establish a trailing guideline to facilitate domestic livestock grazing decisions.

Response: The preferred method would be to implement the soils and native species standards through field assessments. If excessive trailing were affecting conditions for soils or native species on a portion of the allotment then prescribed actions would be detailed to alter those practices. Such practices or techniques that could become a term and condition of continued grazing use may include a temporary or permanent reduction in grazing use, adding drift fence, moving a portion of the herd into another part of the allotment, and/or adding a water source. The two standards and their indicators are found in chapter 2, but are also listed below. In addition, guidelines for grazing management 10, 11, 13, and others may apply to this situation.

Soils: Soils exhibit infiltration and permeability rates that are appropriate to soil type, climate, geology, landform, and past uses. Adequate infiltration and permeability of soils allow accumulation of soil moisture necessary for optimal plant growth and vigor, and provide a stable watershed. As indicated by:

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

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 unusual plant assemblages) 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 litter within acceptable limits
- 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 to prevent the need for listing special status species

PC 365 The Final EIS should incorporate the livestock grazing management plan prepared by Dr. Wayne Burkhart and Dave Thornton.

Response: The Proposed Plan establishes a grazing strategy for cattle use in DWMA's. Changes to the grazing strategy could be altered under provisions for research of grazing forage utilization and relevant variables. The BLM, FWS, and lessee(s) would develop a written research proposal and after agency review and approval the proposal would be implemented.

PC 366: The Proposed Plan should establish a guideline requiring grazing exclosures within allotments to facilitate comparisons of grazing intensity and management status.

Response: Establishment of permanent and temporary exclosures is an excellent method to compare grazed and ungrazed vegetation in stocked grazing allotments. Data can be collected for long-term vegetation trend studies as well as the customary comparison of forage utilization. Construction of the exclusion fence is a short-term problem that can easily be overcome, however, a poor rationale for positioning an exclosure on a specific site interferes with continuation of that exclosure and establishment of additional exclosures in the allotment. We have constructed numerous temporary and permanent exclosures in the CDCA and the BLM would continue to build exclosures. To establish a guideline to construct exclosures at every key area or every other key area would heavily tax existing resources and may not achieve the desired results. Perhaps a better solution would be to construct exclosures in specific areas to obtain monitoring results when standards are not being met.

PC 367: The Proposed Plan should establish a guideline requiring a comprehensive information database for vegetative species within grazing allotments.

Response: Vegetation, soils, and other resources have been mapped in the CDCA several times under different techniques and these efforts have provided general maps without sufficient detail for management utility. Maps resulting from these efforts are included in allotment management plans where they are effective. However, the BLM-approved method to inventory soil and vegetation has not been conducted in the CDCA due in large part to the cost of such an endeavor. Soil and vegetation inventory have been conducted in limited areas of the CDCA and results from these efforts would be utilized when maps overlay grazing allotments.

PC 368: The BLM should implement various grazing restrictions listed in settlement agreements negotiated under the recent lawsuit for the NEMO planning area.

Response: Grazing restrictions are detailed in settlement agreements based on negotiations between BLM and the Center for Biological Diversity (CBD) originating from a lawsuit brought against the BLM for not consulting with the FWS on management actions affecting listed species in the CDCA Plan. The grazing restrictions listed in the settlement agreements are interim actions until implementation of the Proposed Plan. The NEMO planning process and direction were well underway before negotiations with the CBD began.

PC 369: The BLM should forbid livestock grazing during summer in the CDCA planning area.

Response: High temperatures do affect movement of livestock because animals actively seek shade where it is available. Livestock producers select cattle for their ability to withstand and thrive in high temperatures. Many riparian areas with trees and tall brush are fenced to protect water sources and attendant vegetation. When riparian areas are impacted by cattle use, steps are to be taken to remove cattle from the affected resources.

PC 371: The BLM should eliminate ephemeral livestock grazing in the CDCA planning area.

Response: The Proposed Plan would remove the ephemeral forage allocation for those allotments with ephemeral/perennial classifications that are within DWMA's, and annual grazing use of perennial forage between 3/15 and 6/15 is contingent upon achieving 230 pounds by air-dry weight per acre. Those allotments outside of DWMA's but within desert tortoise habitat would be managed under existing biological opinions. The terms and conditions of the BOs allow grazing use of ephemeral forage to occur based upon prescribed production of annual grasses and forbs and within a prescribed period.

Sheep grazing is not authorized in the planning area. Approximately, 1,566 cattle can graze on 17 allotments, but some of the allotments have not been grazed for years and several other allotments are authorizing grazing use at less than potential for the allotment based on financial or management concerns. On an average year about 1,300 cattle graze in the planning area. In the planning area, the authorization of ephemeral forage for cattle use has not occurred for more than seven years, and in the ephemeral Piute Valley Allotment grazing use of ephemeral forage has not occurred for almost ten years. Those allotments within desert tortoise habitat tend to consistently produce more ephemeral plants than those allotments outside of desert tortoise habitat.

PC 372: The BLM should prohibit supplemental feeding of livestock.

Response: As described in grazing regulations under 43 Code of Federal Regulations Subpart 4100.0-5, "Supplemental feed means a feed which supplements the forage available from the public lands and is provided to improve livestock nutrition or rangeland management." That means a manager may authorize the placement of supplements such as salt and protein in various areas of the allotment to improve livestock nutrition and/or assist in rangeland management (e.g., improve cattle distribution). However, the feeding large quantities of alfalfa hay or cubes because forage is lacking on public land is not permissible and it is consider a prohibited act under 43 CFR 4140.1(a)(3).

PC 373: The BLM should base its livestock grazing requirements on those provided by the Sierra Club.

Response: There is no new information provided with this comment and the comment is not substantive.

PC 374: The BLM should allow livestock grazing to continue in the CDCA planning area.

Response: The Proposed Plan does provide for continued grazing use in those allotments that are not in conflict with measures set forth for desert tortoise recovery. In those allotments where recovery of desert tortoise is the priority, continued use of rangelands is tied to annual ephemeral forage production to meet the needs of the desert tortoise. The Proposed Plan provides the lessee an opportunity to continue the grazing operation or to voluntarily relinquish the grazing lease as mandated by operational, logistical, and financial needs.

PC 378: The BLM should clarify livestock grazing allotment ownership information found in Appendix M of the Draft EIS.

Response: Appendix M of the *Draft California Desert Conservation Area Plan Amendments for the Northern and Eastern Mojave Planning Area* details changes to the CDCA Plan from enactment of the California Desert Protection Act of 1994 (CDPA). This appendix displays the shift from BLM administration to NPS administration upon enactment of CDPA. Prior to enactment of CDPA all public lands and the activities occurring upon them were administered by the BLM. After enactment of CDPA, all federal lands and the activities upon them were placed under NPS administration in the Mojave National Preserve or expanded area of Death Valley National Park. Cattle use is one of those activities and grazing is confined to geographical units called allotments. The newly formed areas of the Mojave National Preserve and Death Valley National Park crossed grazing allotment boundaries. In selected allotments a portion of the allotment is now within the new NPS units and the remaining portion continues under BLM administration. However, Colton Hills, Gold Valley, and Round Valley Allotments are totally within the boundary of the Mojave National Preserve and they are no longer administered by the BLM.

In addition to changes in federal land management listed in Appendix M, please refer to Table 2-5 on page 2-27 in Chapter 2 of the DEIS. Under Table 2-5, acreage, AUMs, rangeland type, and grazing direction are presented in columns under the Alternative 1 (No Action). Data is listed for 20 allotments based upon passage of the CDPA, current forage allocation is listed in AUMs and size is listed in acres. This information is pertinent because of NPS goals, as outlined in their General Management Plans for Mojave National Preserve and Death Valley National Park (May, 2002), to eliminate grazing on NPS-administered lands, through third-part buyout.

PC 379: The Final EIS should clarify issues on livestock grazing allotments raised in Chapter 3 of the Draft EIS.

Response: The requested clarification covers Kessler Springs, Hunter Mountain, Clark Mountain, and Crescent Peak Allotments. Most of the information is found in Chapter 2 or the appendices of the FEIS.

Under the Proposed Plan, the Kessler Springs Allotment and others would no longer be grazed after the lessee submits written request. Tortoise recovery would be the primary focus of these areas. For further elaboration and back ground information please see section and discussion for 2.2.3.4 Grazing Management pages 2-19 and 2-20, Table-Summary of Alternatives for Desert Tortoise Recovery and the intersection of row labeled “Livestock Grazing” and column labeled “Alt # 3 (Two Focal Populs.)” page 2-25, Table 2-5 on page 2-27, Cumulative Impacts-4.12.6 Cattle Grazing (and Allotments) 5th paragraph page 4-104, and Appendix M page M-2. Discrepancies between acres listed in the DEIS and the 1999 Decision Record for environmental assessment (CA-060-EA-8-05) and plan amendment are due to inaccuracies in the way acres were counted in the 1999 Plan Amendment. The acres listed in the DEIS utilized the most current information from our geographical information system and this acreage is considered more precise.

It is our understanding that the portion of Crescent Peak Allotment found on the Mojave National Preserve has been canceled by the NPS, however, that portion of the allotment found on BLM lands has not been canceled nor does the Proposed Plan support cancellation of the allotment. The Crescent Peak Allotment is outside of desert tortoise habitat and would continue to be managed under current regulations, and terms and conditions.

The Clark Mountain Allotment does contain Category I desert tortoise habitat. The allotment does not contain desert tortoise critical habitat. The area in the allotment with desert tortoises was not selected under the Proposed Plan for future management under the DWMA. Grazing use in tortoise habitat would be managed under terms and conditions listed Appendix E.

Only a portion of the Hunter Mountain Allotment is located in the Malpais Mesa Wilderness. No new range improvement projects are proposed to be located in wilderness, and there are no proposed increases in grazing use in wilderness.

PC 380: The BLM should evaluate the Last Chance grazing allotment and determine the animal unit month through an Allotment Management Plan.

Response: Prior to expansion and designation of the Death Valley National Park, the Last Chance Allotment forage allocation (AUMs) and area were listed in the CDCA Plan, 1980 at 3,055 AUMs and 101,324 acres. After enactment of CDPA, that portion of the allotment on BLM lands has been reduced to 1,639 AUMs and 35,532 acres. Therefore, future cattle grazing set forth in the Proposed Plan would continue with 1,639 AUMs for the Last Chance Allotment until modified through land use plan amendment.

Cattle have not grazed on the Last Chance Allotment since 1998. BLM-Nevada has administrative concerns with cattle grazing in the Last Chance Allotment. Until this situation is resolved in Nevada cattle grazing would not occur on the California portion of the allotment.

Mineral Resources

PC 381: The Final EIS should provide an expanded analysis of potential future impacts to communities and mineral resource availability from proposed management actions.

Response: The impacts analysis (Chapter 4) has been expanded to better address effects on all resources, including mining. BLM has focused the analysis and text on impacts that would be negative. If mineral resources will not be adversely affected, it can be presumed that local economies will not be either. Regarding the existing situation (Alternative 1), for many of the issues there are associated mitigation and costs; however, these are imposed by laws and regulations independent of the subject planning effort.

PC 382: The Final EIS should provide an explanation of the relationship between mining codes and laws and the potential impact to future mineral resource availability from the proposed plan.

Response: Appendix K has been modified to include a statement on the State's Surface Management and Reclamation Act (SMARA) and the requirements of Public Resources Code Sections 2711 and 2712.

PC 385: The BLM should reference the California Division of Mines and Geology's Special and Open File Reports when exploring impacts on mineral resource availability.

Response: The EIS text has been modified to include a reference to the literature and maps produced by the California Division of Mines and Geology. The individual reports are also listed in the "Literature Cited" section.

PC 386: The Final EIS should state that mining operations will be allowed to continue in the CDCA Planning Area.

Response: The reader is referred to the declaration of policy found in the Federal Land Policy and Management Act (FLPMA) of 1976 (mentioned in Appendix K). Section 102 (12) states that, "public lands be managed in a manner which recognizes the Nation's need for domestic lands including implementation of the Mining and Minerals Policy Act of 1970 (84 Stat. 1876, 30 U.S.C. 21a) as it pertains to the public lands;" The latter policy and the National Materials and Minerals Policy, Research and Development Act of 1980 are summarized in Appendix K as well as the 1872 Mining Law.

Regarding BLM policy toward allowing existing mining operations to continue and avoiding withdrawals, we don't anticipate that any existing operations would be curtailed or shut down. Regarding potential operations in the future, we are looking at a number of alternatives, including withdrawals and a no-surface-occupancy stipulation to meet our mandate for the management and recovery of threatened and endangered species. These tools include the surface management regulations under 43 CFR 3809, which provide the BLM with authority to deny a plan of operations if it would cause unnecessary and undue degradation. Likewise, an existing operation could be shut down if it was found to be in noncompliance. BLM will be able to offer a future miner with a better picture of his future options in the Amargosa and Carson Slough areas when our resource information base, including specific species locations and life cycle data, is more complete for the species BLM is conserving in these areas.

PC 387: The BLM should allow motorized dry washers/mining activities on lands where vehicle recreation is allowed within desert areas.

Response: Although present rule making states that casual use “generally” includes, among other things, non-motorized sluicing, there is some flexibility built into the definition of casual use in 43 CFR 3809.5. Those wishing to use motorized dry washers on public lands should check with the local Field Manager to see if the proposed activity qualifies as “negligible disturbance” and can be accommodated as casual use. The answer may depend on the number of individuals operating within an area and their history of confining vehicular use to existing trails and backfilling and reclaiming as they progress, as well as the general sensitivity of the area.

PC 390: The BLM should consider mineral values in relation to other resource values to ensure resource protection.

Response: For the foreseeable future there are no indications of substantial development of minerals resources. Prior to any major (over 100 acres) development an environmental impact statement would be required, with review of all resources values and public involvement. Other projects would be considered consistent with CDCA Plan requirements for ACECs, the DWMA requirements, and NEPA.

Social and Economic Resources

PC 393: The BLM should comply with the definition of the Small Business Act relative to mining claims and not create their own unpublished definition.

Response: BLM did not consider that a mining claim constitutes a small business entity because the Small Business Act requires production.

The NEMO planning effort is independent of and cannot change the proposed and final rulemaking for the surface management regulations in the Federal Register.

BLM has indicated through its inventory and assessment process where possible development would occur. It is anticipated that the NEMO plan will have a minimal impact on these mineral resources, small business entities or local and regional mineral needs. Only minor impacts would occur where there are changes in multiple-use-class changes from Moderate to Limited, which would change the requirement from a notice to a plan of operations in some cases. This would equate to a 15-day processing period rather than 30 days for a plan involving sampling less than 1,000 tons. For larger operations, there would no difference because a plan of operations would be required regardless of multiple-use class. There would be no difference in bonding requirements because both plans and notices require a financial assurance by regulation. The reader is referred to the motor-vehicle-access issue in Chapter 4 where varying alternatives will have some bearing on authorization (plan or notice), based on variations in MUC. Again, the impact on mineral development is anticipated to be minor.

PC 394: The Final EIS should present an analysis of potential local economic impacts.

Response: Section 4.12.15 analyzed socioeconomic impacts and concluded that impacts were not consequential, in the context of the regional economy. The biggest effect is from grazing leases. San Bernardino County collects monies from taxing the lessee based on the possessory interest tax. Under the Proposed Plan, grazing use on Valley Wells, Valley View, Kessler Springs, and Jean Lake allotments would continue as in the past except during dry years when ephemeral forage is insufficient. In past dry years, the lessee has removed a portion of the cattle herd from the allotment, and those remaining animals sought higher elevation grazing areas with superior forage until rainfall and forage returned throughout the allotment. While the grazing lease is active, losses, if any, in tax revenue would not be noticeable. However, if the lessee relinquishes the grazing lease, all sources of revenue originating from possessory interest tax would cease.

PC 396: The Final EIS should include justification for the inclusion of the 1989 retail sales figures from the Barstow Chamber of Commerce.

Response: Thank you for your comment. The section has been edited in the final document.

PC 397: The Final EIS should analyze the social and economic impacts of route closures to motorized recreationists.

Response: The environmental consequences describing the effects of the Proposed Plan, addressing Motor Vehicle Access-Routes of Travel Designations has been strengthened to more fully describe the impacts to motorized recreationists (4.8 and 4.9) and in the Cumulative Impacts analysis (4.12.11, 4.12.13, and 4.12.15).

PC 398: The BLM should develop a plan to use OHV gas tax monies to support OHV recreation and motorized vehicle impact mitigation.

Response: The Off-Highway Motor Vehicle Recreation Act of 1988 (State of California) enables the allocation of grant funds for the purpose of establishing, maintaining, managing, and rehabilitating off-highway vehicle (OHV) recreation areas, trails, and facilities in California. Grants are available for acquisition, development, planning, operation, maintenance, and resource management. Funding must be used for areas or trails that were, will be, may be, or are currently dedicated for legal off-highway vehicle use. Funds for this program are derived from a biennial fee paid for the registration of off-highway vehicles, from a portion of fuel taxes paid by all vehicles used off-highway for recreation, and from fees collected and income from special events at State Vehicular Recreation Areas. All funds are deposited in the Off-Highway Vehicle Trust Fund administered by the Off-Highway Motor Vehicle Recreation Division of the California Department of Parks and Recreation.

On an annual basis, with involvement from OHV users and non-OHV users of the public lands, the BLM identifies projects to support OHV recreation and mitigate motorized-vehicle impacts. In most cases, such projects do not require an amendment to the applicable land use plan, except where changes in land use allocations require an amendment (e.g., designation of a new off-highway vehicle recreation area on public lands). Applications for funds to support such projects are then made through the Off-Highway Vehicle Grants Program ("green sticker" program). Upon approval of the funds, projects are undertaken.

PC 399: The BLM should reconsider the toll stations proposed on State Highway 190.

Response: The Proposed Plan is not considering such a proposal, and never has done so. This activity would occur within a CalTrans right-of-way, and would therefore be under the jurisdiction of the State Highways Department, if it is under consideration. It would need to be coordinated with Death Valley National Park. BLM would be a commenter on the application or environmental document as a potentially affected interest, just as the public would also wish to be a commenter on such a proposal. BLM has not been notified of such a proposal.

Cultural Resources and Tribal Concerns

PC 403: The Final EIS should include provisions that address the preservation of historical and cultural sites.

PC 404: The BLM should preserve sites of western heritage and cultural significance.

PC 418: The Final EIS should include information about the inventory and protection of Native American cultural sites.

Response: This Proposed Plan would not change the Cultural Resources Element of the CDCA Plan. BLM would continue to implement the CDCA cultural resources management strategy in accordance with the CDCA Plan, as implemented in the CDCA Programmatic Agreement (*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)) and the BLM 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 National Programmatic Agreement and Protocol continue to reinforce all of the goals and actions necessary to achieve the cultural resources management prescriptions outlined in the CDCA Plan, but provide BLM more authority and responsibility in carrying out these responsibilities. The cultural resources management goals for the CDCA Plan include: (a) Recognition through ACEC and other special designations; (b) Preservation and Protection; (c) Monitoring; (d) Inventory; (e) Mitigation Plans; (f) Research, and (g) Review and Coordination. Proposed actions subsequent to the Proposed Plan 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.

Specific to route designation decisions, the FEIS has been strengthened to address this issue. See Chapter 4.9.5 for Impacts to Cultural and Native American Values and strategies to address potential impacts..

PC 405: The Final EIS should analyze the impacts of route closures to the preservation of western culture.

PC 407: The BLM should evaluate motorized travel impacts in context to past disturbances and limit route closures accordingly.

PC 408: The Final EIS should evaluate utilizing multiple-use management principles to protect western culture and values.

PC 412: The BLM should close historic trails to motorized travel.

Response: BLM has been sensitive to develop very specific criteria for closing roads in the desert tortoise subregions. In areas with high mineral, utilities, and recreation values species and habitat conservation would generally not receive the same level of emphasis. The amount of roads and washes/wash systems proposed closed are small and have not significantly added to restrictions and closures affecting economic and social pursuits that are already in place. BLM has also been as sensitive as possible to retaining access where roads are known to provide access for specific purposes, consistent with the criteria identified for the desert tortoise subregions.

PC 406: The Proposed Plan should limit large group recreation activities in areas of potential archeological or other resource value.

Response: Large groups are required to obtain a special recreation permit for many activities in the CDCA (i.e., those uses where the criteria of 43 CFR 8372.1-1 are met). These include a) commercial use; b) competitive use; c) off-road vehicle events involving 50 or more vehicles, and d) special area use (includes ACECs). Permits may be waived for smaller groups if the activity is non-commercial, at the discretion of the Authorized Officer. These rules provide BLM the ability to protect areas of significant archaeological or other resource value.

PC 409: The BLM should maintain limited and strictly monitored motorized vehicle access to the Tonopah & Tidewater Railroad roadbed.

Response: The route designation for the Tonopah and Tidewater (T&T) Railroad grade and related cultural resources sites will be addressed in a subsequent route designation effort, which is currently scheduled to be completed by June, 2004. For some time, BLM has been aware of the call for motor vehicle use focused on the entire T&T grade by some users. With respect to motor vehicle travel on or parallel to the grade in its entirety, two segments are not available for motor vehicle use, and these two segments overlap. A substantial segment in the central Amargosa Canyon has been within the boundary of the Kingston Range Wilderness since 1994. Public use of vehicles in that vicinity is to remain outside the wilderness boundaries.

Prior to designation of the wilderness, the central Amargosa Canyon, which includes the wilderness, was closed to vehicle use in 1974. Again in the CDCA Plan in 1980 the area was closed to protect sensitive resources and still provide for visitor use of the canyon by foot trail. The closure was confirmed during route designation, which occurred at the time of the Amargosa Natural Area ACEC Plan (1983). Inside and outside the closed areas, as a product of erosion and washouts over the years, the T&T grade has become a long series of disconnected segments. As a result, vehicle travel on the grade, authorized or not, is a repeatedly interrupted experience. At a number of sites, vehicles on a raised segment of the grade, so as to continue onward, have no choice but to drive down the side of the segment, across a desert wash and, on the other side, drive up the side of the grade again. At those sites, for many years, this has been having predictable effects on the integrity of the grade, which receives no maintenance.

Regarding provision of vehicle use permits, this would be dependent on the outcome of the subsequent route designation process. The agency remains open to proposals similar in nature to other partnerships that have, for some time, resulted in cultural resources management processes consistent with BLM's scope of responsibility. The impacts to the T&T grade as a cultural resource potentially eligible for the National Register would be evaluated during route designation, and its integrity would be considered in that evaluation, as would other issues of pertinence. These issues and specific proposals would be addressed in the context of the specific route designations for the area of interest.

PC 410: The BLM should keep open access routes to Mesquite Spring.

Response: Routes will be designated for this area within the next three years. At the time of route designation for this area, this issue will be addressed. You are encouraged to:

- 1 Participate in the route designation process for the Amargosa watershed
- 2 Identify specific routes
- 3 Indicate why you think this is the action that should be taken

PC 413: The BLM should not implement the proposed Old Spanish Trail closure.

Response: The 3.8.5 passage in the DEIS reads: "Much of the Old Spanish Trail (Mormon Road) has been paved within the NEMO Planning Area. Tracks of the trail can still be seen at Emigrant Pass just off the Old Spanish Trail Highway as well as at Impassable Pass at the Alvord Mountains and points west. The route leading west from the highway is closed to motorized vehicle use to preserve what remains of the Old Spanish Trail."

The 'closure' of reference relates to the paving of the Old Spanish Trail in and west of Emigrant Pass. Rather than being administratively 'closed', the Trail, except for short segments, was rendered generally unusable by the paving of the Old Spanish Trail Highway between Tecopa, California and Pahrump, Nevada, which the Old Spanish Trail generally followed. Highway planning and design through Emigrant Pass used a centerline (for modern vehicle speeds and safety) very different from the centerline used by Old Spanish Trail wagons and livestock. As a result, in the rugged topography of the Pass, the highway alignment, crossing the Trail, has severed it at several points, in effect creating discrete trail segments. As a result, Trail segments are now under the highway pavement, negotiable for a short distance off the highway, or beyond the reach of motor vehicles, most OHVs included.

PC 414: The BLM should not consider the East Mojave Heritage Trail an historic trail.

Response: As a result of this comment and further investigation, a determination was made to remove the East Mojave Heritage Trail from Table 3. Although the trail is not Congressionally designated as an historic trail, the trail does offer passage by scenic landscapes and historical sites. Reference to its importance and relevance as a vehicle touring route in the planning area will remain as written in section 3.8.5, Historical Trail Touring.

PC 415: The BLM should consider reopening the East Mojave Heritage Trail.

Response: Portions of the East Mojave Heritage Trail (EMHT) were closed as a result of the California Desert Protection Act (CDPA) in 1994. The EMHT was not left open in its entirety because it was not an historic trail. Only Congress has the authority to make changes to wilderness designations. Proposing new wilderness areas or recommending changes in existing wilderness boundaries are beyond the scope of this Land Use Plan.

PC 416: The BLM should acknowledge that the Mojave Indian Tribe inhabited a much larger area than stated in the Draft EIS.

Response: The observations for Native American occupation of the California Desert region in prehistory are summarized from accepted ethnohistories, cultural resources documents, and general information available and are intended only to provide a general context. Differences in interpretation of territorial range for Native American peoples do not alter the analysis of impacts resulting from the Proposed Plan.

PC 417: The Proposed Plan should include protocols respecting tribal legal rights to cultural resource confidentiality.

Response: The proposed plan would not alter the agency's responsibilities for confidentiality regarding the release of sensitive information for archaeological or sacred sites.

PC 419: The Final EIS should emphasize avoidance and locating origins of cultural sites.

PC 422: The Proposed Plan should require archeological survey, with site-specific analysis and mitigation, prior to any ground disturbing mining activities.

Response: The FEIS has been clarified to emphasize that proposed actions resulting from implementation of this Proposed Plan 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. When significant cultural resources would be adversely affected, the appropriate treatment would be determined in consultation with the SHPO and appropriate Tribal Governments.

PC 420: The BLM should maintain motorized access to cultural and Native American sites.

PC 421: The BLM should reconsider proposed route closures within 1/4 mile of sacred sites and cultural resources.

Response: Decisions regarding whether or not to close routes within ¼ mile of noteworthy sacred sites or cultural resources will be considered on a case-by-case basis. Those routes which were determined to remain open, that pass by or end at these cultural sites may provide some type of interpretation to assist in the education of the passerby, depending upon the nature of the site. Some routes would be difficult to close because they pass by these sites while other routes, which offer additional recreational opportunities end at or nearby these sites. Some sites where intensive OHV use is occurring, BLM may construct wayside exhibits to assist in the education of the fragile resource along with protection measures the public can take in the preservation process. Some cultural sites may be fenced to keep people from disturbing these sites. Detailed protection and interpretive measures will be developed in the implementation phase. Some sites have not been sufficiently inventoried to allow public access. Upon completion of these inventories and protective measures, more sites will become available for public viewing and/or interpretation, if needed.

PC 423: The Proposed Plan should end or radically restrict off-road vehicular racing activities to reduce Mojave Indian Tribe cultural resources impacts.

Response: The range of alternatives considers a strategy that would restrict racing activities to OHV open areas (Alternative 2) and analyzes the environmental impacts of that strategy. The Proposed Plan is a modification of Alternative 2, and provides for the following: “Competitive vehicle events may only be held in MUC I with an area designation of “Open” or on specified recreation routes which have been delineated and designated in the CDCA Plan.” See Chapter 4, Section 4.8, particularly 4.8.1 for impacts of the event, and 4.8.5 for impacts of the Proposed Plan.

Technical/Editorial

PC 424:

Preface: The responses from BLM on the technical public comments treat each item as a separate element. Each suggestion or observation and comment was fully compared with the text and changes made where warranted. Because of the nature of the technical and editorial comments from the public, the original responses remain in the text followed by the BLM response.

Comment: Chapter 3-33, Section 3.10 Minerals and Mining, and Appendix K-9-11 – These sections are a reasonable description of the three categories: (1) locatable, (2) leasable, (3) saleable minerals. Figure 3.a., NEMO Active Mines & Mineral Potential map legend has no correlation to that terminology used in Section 3.10, and Appendix K-9-11 (see enclosed Figure 3.a.). (Individual, Las Vegas, NV – #M13)

BLM Response: The terms were inserted into Figure 3.a.

Comment: p. xv. The plan provides “...to the extent feasible, the preferred alternative provides a public access network...Where it does not jeopardize T&E conservation and recovery.” The phrase “to the extent feasible” should be removed—vehicle access should never threaten T&E species. Also, add that vehicle access should not compromise other values, such as esthetic. Also, the goal of the plan should be no vehicle access expansion, not just to keep the same pace of development. Sec. 1.1—Purpose and need—emphasize that not every use has to occur on every square foot of land. (Individual, Ridgecrest, CA – #M57)I note that in line 6 on p. 0-3 there is extra “near.” On Line 8 there is a reference to “Hot Springs”—this should be corrected, presumably it is referring to Tecopa Hot Springs. In the third line—upper should not be capitalized. In the last line on this page, what does “Shoshone-side” mean? (Individual, Ridgecrest, CA – #M57).

BLM Response: The changes were considered, but original form retained, primarily due to budget restraints. Various terms suggested were changed in the text.

Comment: The following comments are offered for your consideration in preparing the Final EIS: To improve readability, we suggest assigning a single designation to the preferred alternative (e.g., Alternative2). Additional numerical designations should only be given to alternatives, which deviate from both “no action”, and the preferred alternative for every topic discussed (i.e., they are completely separate alternatives which stand on their own for the purpose of analysis). Additional sub-alternatives proposing an alternative method of dealing with a specific issue can be designated using letters (e.g., Alternative 2, Option A) or some other method. Formatting the document in this way will reduce the need to continually refer to previous alternatives in the impact analysis section. (U.S. Environmental Protection Agency, San Francisco, CA – #M68)

BLM Response: Done.

Comment: Second bullet states, “What strategies should be pursued to help ensure a continuing riparian flow. . .necessary for T&E plants to survive and thrive?” [[Carson Slough]]. Under the preferred alternative, 2.4.2.2, the DEIS describes the intent to develop strategies within a 3-year period and identifies an action to ‘delineate the Amargosa aquifer’. However, no other explanation is given for this designation, such as its purpose, what area is encompassed, protections afforded and upon what authority such designation is based. In App. B -Implementation Plan, the table on page B-7 provides no task statement consistent with an aquifer ‘designation’. (U.S. National Park Service, Oakland, CA – #M42).

BLM Response: Noted – Tamarisk control, erosion control. The Purpose was stated in Chapter 1. Delineation would take place over a 3-year period. Items 6 and 7 on p B-7 would probably include this delineation.

5) Allotments Colton Hills (09202) and Gold Valley (09212) need to be dropped from BLM’s records. (U.S. National Park Service, Oakland, CA – #M42).

Kessler Springs (09008) is owned by the National Park Service and should be removed from the Table. (U.S. National Park Service, Oakland, CA – #M42).

Piute Valley (9004) Allotment is an ephemeral allotment. (U.S. National Park Service, Oakland, CA – #M42).

BLM Response: So stated in Table 2.10. Code D.

Comment: The last bullet refers to the ‘Amargosa’ aquifer. On page 3-15, under 3.3.2 WATER, there is discussion about the Amargosa River, but not the ‘Amargosa aquifer’. We believe the appropriate reference would be the ‘upper aquifer in the Amargosa Desert consisting of the unconsolidated valley fill sediments (i.e. valley or basin-fill aquifer)’. (U.S. National Park Service, Oakland, CA – #M42).

BLM Response: BLM rdefers to the Amargosa “hydrologic system”, which includes the editing suggestion.

Comment: NPS recommends a clarification of Wilderness Study Area (WSA) “release” language in the CDPA. If the CDPA did not specifically release the land from WSA status, then it is still in WSA status. (U.S. National Park Service, Oakland, CA – #M42).

BLM Response: BLM follows this definition – see section 1.3.6 and Footnote 7.

Comment: The second paragraph-second sentence contends the area is generally characterized by deep water tables. It should also be stated “except where the water tables of the upper and deeper bedrock aquifers intersect the land surface to produce intermediate and large volume spring discharges. These discharges form the flows which maintain riparian and T&E plants and animals.” (U.S. National Park Service, Oakland, CA – #M42).

BLM Response: Comment valid, but omission not a serious flaw.

The last sentence of the first paragraph refers to commercial groundwater pumping in Ash Meadows. This should state that ‘commercial groundwater pumping occurs near Ash Meadows’ in Amargosa Valley. (U.S. National Park Service, Oakland, CA – #M42).

BLM Response: Stated in Text.

Literature Cited (Section 6.2) does not contain a complete listing of references made throughout the document. (U.S. National Park Service, Oakland, CA – #M42).

BLM Response: Updated in Literature Cited.

Fig. 2 is confusing and does not clearly show the grazing allotments within the Mojave National Preserve. NPS recommends allotments be labeled and the retired allotments shown as retired. (U.S. National Park Service, Oakland, CA – #M42).

BLM Response: Now updated and clarified.

Fig. 3 needs to define NPS-owned areas. (U.S. National Park Service, Oakland, CA – #M42).

Several figures, starting with Fig. 3a, incorrectly label the Twentynine Palms Marine Base as Joshua Tree National Park. (U.S. National Park Service, Oakland, CA – #M42).

BLM Response: Updated and clarified.

Fig. 6.a does not accurately reflect the lands within the Mojave National Preserve. (U.S. National Park Service, Oakland, CA – #M42).

BLM Response. For the purposes BLM needs, in this document, the accuracy is sufficient. See NPS – EIS and EMP, Mojave, July, 2000.

Fig. 7.a would be more easily understood without the delineation of NPS boundaries. (U.S. National Park Service, Oakland, CA – #M42).

BLM Response: BLM prefers the version used.

This figure incorrectly shows Clark Mountain as a burro range managed by BLM. (U.S. National Park Service, Oakland, CA – #M42).

BLM Response: Herd area on map depicts historic burro range since the passage of the Wild Horse and Burro Act.

All figures: Maps do not depict Wilderness boundaries on NPS lands. NPS can provide updated maps showing the most current Wilderness boundaries within Mojave National Preserve. (U.S. National Park Service, Oakland, CA – #M42).

BLM Response: BLM Response: Thank you for the offer. The maps are considered sufficient, since BLM doesn't manage wilderness areas on NPS lands.

While removal of horses and burros from NPS land is coordinated between NPS and BLM, it is important that the NEMO not imply that wild horse and burro management on NPS land is a BLM responsibility. The text needs to make clear that the BLM does not manage horses and burros on NPS lands. (U.S. National Park Service, Oakland, CA – #M42).

BLM Response: Implication is not made. There is a cooperative effort for this process between agencies.

These documents [DEIS] should provide more detailed mapping products at a legible scale to allow for the precise delineation of privately owned parcels identified for acquisition from willing sellers, including the provision of legal descriptions and Inyo County Assessor's Parcel Numbers. (Inyo County Board of Supervisors, Independence, CA – #M37).

BLM Response: Full information not known to authors at this time. Data on 15a-c, 13c, 11,9 are sufficient for the purposes of the EIS.

In your draft there are no less than 12 maps that are in error. The shaded area south of 1-40 is the Marine Corps Air-Ground Combat Center, not the Joshua Tree National Park. (Individual, No Address – #M317).

BLM Response: Maps have been corrected.

Chapter 1 page 15: The National Materials and Minerals Policy, Research and Development Act of 1980 should be its own separate bullet. Chapter 1-18: A revised Draft of both the Death Valley National Park and Mojave National Preserve GMP and EIS were issued in the summer of 2000. The text of the Draft Plan/DEIS states that such documents are “expected.” Chapter 1-18: Please add a paragraph on the Joshua Tree National Park General Management Plan Amendment adopted in January 2000.

BLM Response: Text now reflects this development.

Chapter 3-19: The Draft Plan states that three of the allotments covered by the Plan now have portions within Death Valley National Park. For clarity’s sake, please list the three. Chapter 3-31: Rockhounding is prohibited not only in the National Parks in the California Desert but also in the Mojave National “Preserve.” (Preservation/Conservation Organization, Oakland, CA – #M27).

BLM Response: Page 3-20-23 named the allotments that are partially in NPS (Clark Mountain, Crescent Peak and Hunter Mountain.). Chapter 3-31 confirms the comment.

Soil Infiltration and Permeability Rate Standard. The regional standard for soil requires that soils exhibit infiltration and permeability rates appropriate to soil type, climate, geology, land form and past uses. The standard should include an objective or numerical landmark by which one can determine whether the soil infiltration and permeability rate is appropriate. (Recreational Organization, San Diego, CA – #M67).

BLM Response: As with other parameters used to establish standards and guidelines, the planning process will determine the scientific basis for measuring the above mentioned factors. See comment below for species standards as an example.

Comment: Objective Standard By Which Species Can Be Evaluated Must Be Provided in Addition to Indicators Listed. The EIS at page 2-6 lists the standards of public health in the NEMO Planning Area. For native species, the EIS lists indicators for healthy, productive, and diverse habitats for native species. These indicators include photosynthetic and ecological processes, plant vigor, nutrient cycle, energy flow, etc. The EIS cites to no objective standard for judging whether the plants meet these indicators. (Recreational Organization, San Diego, CA – #M67).

BLM Response: The 15 grazing management practices include standards of Public Land Health that reflect a holistic biological view considered by BLM to be necessary for native species management. Basic principles of the botanical and conservation sciences would be used to finalize each parametric estimate for accuracy in developing the standards. An assortment of representative scientific references to use for the basis of the standards includes:

- 1) Latting, J., and P, G. Rowlands (Ed.) 1995. The California Desert: An Introduction to Natural Resources and Man’s Impact. Vols. I and II. June Latting Books. Riverside, CA 92507. 665 p.
- 2) Buckley, G.P. (Ed.) 1989. Biological Habitat Reconstruction. Belhaven Press. London
- 3) Bassard, C.C., J.M Randall, and M.C. Hoshovsky. (Eds.). 12000. Invasive Plants of California’s Wildlands. University of California Press. Berkeley. 360 p.
- 4) Gilpin, M., and I Hanski. 1991. Metapopulation Dynamics: Empirical and Theoretical Investigations. Academic Press. London. 336 p.
- 5) Teague, R.D., and E. Decker. 1979. Wildlife Conservation: Principles and Practices. The Wildlife Society. 280 p.

Comment: Desert Tortoise Conservation and Recovery 1. Citation for Desert Tortoise Habitat Goals Must be Provided. At page 2-13, the EIS identifies the goals for Desert Tortoise habitat categories 1, 2, and 3. The EIS should cite to the document that defines these goals.

BLM Response: In section 2.2, citations are listed re. This issue. The Recovery Plan for Desert Tortoise (Mojave Population), the Tortoise Rangeland Plan and Foreman (1998).

Comment: 2. Biological Opinions Should be Appended to the EIS. The EIS at page 2-14 lists the current biological opinions and programmatic agreements that would be part of the No Action Alternative. The EIS should include these biological opinions as an Appendix to the EIS.

BLM Response: This is not a general practice in NEPA documents of this nature. Biological Opinions are all available at local offices of USFWS.

Comment: 3. Maps and Rationales Must be Provided for Alternative of the Modified Recovery Plan. The EIS at page 2-16 identifies Alternative 2, the Modified Recovery Plan. As part of this Modified Recovery Plan, “Category I habitat would be adjusted slightly to coincide with the critical habitat boundaries including the Ivanpah Unit (Category I eliminated north of the second main linear utility running across the southern extent of Ivanpah Dry Lake).” Given that the Ivanpah unit has experienced substantial Desert Tortoise mortality due to disease, the EIS should explain why this area continues to be designated as critical habitat. (Recreational Organization, San Diego, CA – #M67).

BLM Response: N change in text. USFWS determines critical habitat. BLM must manage as such.

Comment: Amargosa Vole Recovery Plan Must be Appended to the EIS. The EIS at page 2-30 refers to the Amargosa Vole Recovery Plan. This plan should be included as an appendix to the EIS. (Recreational Organization, San Diego, CA – #M67).

BLM Response: Appendix H deals with this in detail.

Comment: The EIS Fails to Support Statements About Plant Decisions in the Lower Carson Slough Area. The EIS at page 2-36 states that portions of Carson Slough: (1) have been designated as critical habitat for the Amargosa Niterwort and the threatened Ash Meadows Gumplant, and (2) are known to support the BLM designated sensitive Tecopa Birdsbeak as well. Finally, the EIS claims that a federally threatened Spring loving centauray may also occupy this area. The EIS should cite to the biological data that support these statements. Carson Slough Desert Management Route Designation and Implementation. The EIS at page 2-38 discusses Carson Slough. However, the EIS provides no evidence that OHV activity threatens or otherwise affects protected plant species in Carson Slough. Therefore, there is no perceptible benefit from route designations that reduce OHV opportunities in this area. (Recreational Organization, San Diego, CA – #M67).

BLM Response: Appropriate references are now cited in the text. Critical habitat designation by USFWS must be complied with by BLM. Reducing OHV traffic and access is a part of the compliance.

Comment: **B. Wildlife** 1. Non-water Associated Activities Impacts to Towhee Habitat. The EIS, at page 3-10, in discussing the Inyo California towhee, states that potential threats to the towhee’s habitat “include wild burros and horses, mining, recreational activities, cattle grazing, water exportation and encroachment by rural residents.” Because the towhee’s habitat includes riparian habitat and a planned streambed habitat surrounding springs, the EIS should discuss—with references to technical data—how mining and recreational activities and other non-water associated activities threaten towhee habitat.

BLM Response: Towhee critical habitat mandates special management precautions. Everything ends up in the water. Reference in the text to La Berteauz (1998) and USFWS (1998).

Comment: 2. Does the NEMO Planning Area Contain Southwestern Willow Flycatcher Habitat? The EIS at page 3-12 discusses the Southwestern Willow Flycatcher. The EIS notes that Southwestern Willow Flycatchers nest only in dense riparian vegetation associated with streams, rivers, lakes, springs, and other watercourses and wetlands. The EIS does not state whether or not there are any Southwestern Willow Flycatchers present in the NEMO Planning Area, nor whether there is any potential habitat for the Southwestern Willow Flycatcher in the NEMO Planning Area.

BLM Response: Suitable habitat is sufficient to be precautionary.

3. The EIS's Discussion of the Western Yellow-billed Cuckoo Lacks Relevance and Support. The EIS at page 3-13 and 3-14 discusses the Western Yellow-billed Cuckoo, but fails to identify the extent to which the species or their habitat are present in the NEMO Planning Area. In addition, the EIS at page 3-14 states that the cause of the decline of the Western Yellow-billed Cuckoo historically and recently primarily from habitat loss on the breeding grounds. The EIS should cite to the biological information that supports that statement. (Recreational Organization, San Diego, CA – #M67).

BLM Response: See reference Layman and Halterman (1989) in text, and others.

Comment: III. AFFECTED ENVIRONMENT A. Vegetation 1. The EIS Fails to Cite to the Federal Register Designation of Critical Planning Area. In describing the south-central and southern area of the NEMO Planning Area, the EIS at page 2-1 states simply that this is Desert Tortoise habitat. This bare statement should be supported by reference to the Federal Register page that discusses the designation of critical habitat for the Desert Tortoise, and how that designated area coincides with the south-central and southern area of the NEMO Planning Area. 2. Support Must be Provided for Statements Regarding Plant Species Critical Habitat. The EIS at page 3-3 states that the critical habitat designated areas for the Amargosa niterwort and Ash Meadows Gumplant are separated by a 1.2 mile-wide stretch of public lands. The EIS then states that both critical habitat designated units, as well as the area between the units, are suspected to support the federal listed threatened Spring loving centaur. The EIS should refer to the technical information that supports this statement.

BLM Response. See above comments. References are inserted into Chapter 2 (2.4) and Appendix I.

Comment: 3. Statement Regarding Numbers of Plant Species Must be Supported. The EIS at page 3-3 states that certain ranges within the NEMO Planning Area contain an unusually high number of special status plants. The EIS should refer to the biological study that supports that statement. (Recreational Organization, San Diego, CA – #M67).

BLM Response: Refer to website for California Native Plant Society. <http://www.cnps.org/rareplants/relations/blm.htm> Also refer to John Willoughby, State Botanist for BLM. 2800 Cottage Way. Room W-1834. Sacramento, CA.

Comment: 4. Not all Public Recreation is Unsupervised and Unorganized. The EIS at page 3-25 states that public recreation use of the BLM-administered lands is unsupervised and unorganized. To the contrary, many organized off-road vehicle groups conduct their recreation in an organized manner.

BLM Response: Refer to Section 2.9.1 re. Organized events.

Comment: 5. Absence of Information Does Not Justify Inferior Environmental Protection. The EIS at page 3-56 discusses released WSA MUC proposals. In discussing Cerro Gordo, the EIS states that lack of inventory data precluded a higher sensitivity rating for this area. A lack of information should not automatically defer to lower environmental protection. Please provide the Standard for Changing Area MUC Designations. The EIS describes areas for which MUC designation changes are proposed. What is the standard for changing a MUC designation from MUC M to MUC L?

BLM Response: Refer to next comment and response. As an example, the rationale for MUC change is that certain categories may more appropriately support specific management goals for resources while still allowing for other activities to occur. This is the case in the NECO area for management of bighorn sheep while permitting mining operations to occur.

Comment: 7. The EIS Fails to Support Statements Regarding Organized Competitive Vehicle Events. At page 3-58 the EIS discusses organized competitive vehicle events. The EIS identifies the vegetation, wildlife, soil, water, air quality, cultural resources and wilderness in the Barstow to Vegas course. For all of these entries the EIS should cite to the biological report or other technical document that supports the statements made.

BLM Response: A high sensitivity rating would require an EA for projects. The role of the BLM is to protect resources. Inventories would be carried out to assess the current status of resources so that MUC categories could be adjusted if necessary.

Comment: 8. The EIS Must Provide Evidence For Claimed Race Course Event Impacts On Vegetation. The EIS states at page 3-58 that the vegetation along the 1990 proposed course is not fully recovered from previous years' events. The EIS should cite to the technical document that has analyzed the vegetation and come to that conclusion. (Recreational Organization, San Diego, CA – #M67).

BLM Response: A substantial body of evidence exists on the effects of OHV on desert and other vegetation. See Chapter 4, 4.9.1.6.

Comment: 6. Objective Standard By Which Species Can Be Evaluated Must Be Provided in Addition to Indicators Listed. The EIS at page 2-6 lists the standards of public health in the NEMO Planning Area. For native species, the EIS lists indicators for healthy, productive, and diverse habitats for native species. These indicators include photosynthetic and ecological processes, plant vigor, nutrient cycle, energy flow, etc. The EIS cites to no objective standard for judging whether the plants meet these indicators. (Recreational Organization, San Diego, CA – #M67).

BLM Response: Chapter 2, Section 2.1 and Appendix B discuss the development of standards and guidelines as a function of future applications on basic scientific principles for rangeland health (this includes many native species), and refers to the NPS "Vital Signs" program.

Comment: 9. Please Provide Citation For Field Inspection of Race Course Vegetation Regrowth. The EIS at page 3-59 says that the proposed route around Solomon's Knob in the Needles Resource Area was last used in a 1974 race and a 1990 Field Inspection Event showed little regrowth of vegetation. The EIS should cite to the field inspection for verification of that fact.

BLM Response: Refer to Chapter 4, section 4.9.1.6.

Comment: 10. The CDCA Plan Motorized-Vehicle Access Element Is Incomplete. The EIS at page 3-63 discusses motor vehicle access and routes of travel. The EIS notes that the BLM previously managed access under the Interim Critical Management Program (ICMP) that became invalid with approval of the Proposed Plans and the new OHV areas designations. However, since the CDCA Plan Motorized-Vehicle Access Element has not been completed, existing routes of travel in MUC M and MUC L areas will continue to follow the ICMP mapping. Baseline conditions cannot be fully evaluated until the CDCA Plan Motorized-Vehicle Access Element is completed.

BLM Response: Noted. The pertinent sections of the text were amplified, and Figures were redrawn to reflect these concerns.

Comment: 11. The EIS Must Analyze Motor Vehicle Access Impacts. The EIS at page 3-62 discusses motor vehicle access and routes of travel. In this section discussing the affected environment, the EIS fails to discuss effects of motor vehicle access on vegetation, wildlife, water, air quality, cultural resources, wilderness, recreation and socioeconomic.

BLM Response. Chapter 4 discusses these variables in detail regarding each candidate alternative.

Comment: 12. Biological Soil Crust Recover Claims Lack Support. The EIS at page 4-4 discusses biological soil crusts. The EIS makes statements regarding the condition of biological soil crusts noting that the less it rains the slower the recovery of biological soil crusts, and that it can take decades before biotics will begin to recover. The EIS should cite to the technical information or biological study that supports these statements. (Recreational Organization, San Diego, CA – #M67).

BLM Response: Ample information is provided about the phenomenon as listed in the five references in the paragraph in Chapter 4.

Comments: Appendix T was added after the fact. Because if you look in the first part of your book, it never mentions it. You can start in the first part of your text, and it doesn't mention Surprise Canyon all the way through. And that's clearly in violation of NEPA. (Individual, No Address – #M323).

BLM Response: Oversight in Chapter 4. Surprise Canyon Creek is analyzed in Section 4.11 and in Chapter 2, Section 2.12 as well as in appendix T, and Chapter 8, Figure 15c.

U.2 Demographics

Demographic reporting allows managers to focus on specific areas of concern linked to respondent categories, geographic areas, and response types. Managers can use this information to form an overall picture of who submits comments, how they respond, where they live, and what organizations or government agencies they are affiliated with. Demographic reports can display very general to very specific categories of information derived from public comment letters based on client needs. For example, a report can show the number of respondents by state, county or city, or can identify the number of responses from certain affiliations, such as recreational organizations.

U.2.1 Geographic Representation

Geographic representation was tracked for each respondent. Correspondence was received from 50 of the United States and Puerto Rico. In addition, numerous respondents revealed no geographic origin. The following tables report the number of respondents and signatures by state, and the number of respondents and signatures by county in California.

Table U-1 – Geographic Representation of Response by State for NEMO

			Number of Signatures
United States	Alabama	4	4
United States	Alaska	3	3
United States	Arizona	169	172
United States	Arkansas	1	1
United States	California	405	439
United States	Colorado	36	36
United States	Connecticut	3	3
United States	Delaware	2	2
United States	District of Columbia	7	7
United States	Florida	19	19
United States	Georgia	10	10
United States	Hawaii	2	2
United States	Iowa	4	4
United States	Idaho	8	8
United States	Illinois	23	23
United States	Indiana	3	3
United States	Kansas	2	2
United States	Kentucky	4	4
United States	Louisiana	6	6
United States	Maine	5	5
United States	Maryland	12	12
United States	Massachusetts	17	17
United States	Michigan	18	18
United States	Minnesota	9	9
United States	Missouri	11	11
United States	Montana	7	7
United States	Nebraska	2	2
United States	Nevada	13	13
United States	New Hampshire	1	1
United States	New Jersey	16	16
United States	New Mexico	26	26
United States	New York	41	41
United States	North Carolina	19	19

			Number of Signatures
United States	North Dakota	2	2
United States	Ohio	11	11
United States	Oklahoma	3	3
United States	Oregon	15	16
United States	Pennsylvania	21	21
United States	Puerto Rico	1	1
United States	Rhode Island	2	2
United States	South Carolina	4	4
United States	Tennessee	9	9
United States	Texas	30	31
United States	Utah	7	7
United States	Vermont	7	7
United States	Virginia	15	15
United States	Washington	33	33
United States	Wisconsin	10	10
United States	West Virginia	6	6
United States	Wyoming	2	2
Unaffiliated		65	66
Total		1,151	1,191

Table U-2– Geographic Representation of Response by California Counties for NEMO

			Signatures
California	Alameda	35	36
California	Butte	4	5
California	Contra Costa	5	5
California	Del Norte	1	1
California	El Dorado	2	2
California	Fresno	6	6
California	Humboldt	11	11
California	Inyo	9	12
California	Kern	7	7
California	Los Angeles	54	59
California	Marin	13	13
California	Mariposa	1	1
California	Mendocino	3	3
California	Monterey	2	2
California	Nevada	6	6
California	Orange	19	19
California	Placer	2	2
California	Riverside	10	10
California	Sacramento	13	30
California	San Bernardino	28	34
California	San Diego	41	42
California	San Francisco	32	32
California	San Luis Obispo	7	7
California	San Mateo	11	11
California	Santa Barbara	10	10
California	Santa Clara	28	28
California	Santa Cruz	13	13
California	Solano	2	2
California	Sonoma	11	11
California	Stanislaus	2	2
California	Tulare	1	1
California	Toulumne	1	1
California	Ventura	6	6

			Signatures
California	Yolo	4	4
	Unidentified	5	5
Total		405	439

U.2.2 Organizational Affiliation

Responses were received from various organizations and unaffiliated individuals including Federal, State, and County government agencies and representatives, multiple use/wise use organizations, environmental groups, and various user groups such as recreational and mining organizations. Organization types were tracked for each response submitted during the comment period.

Table U-3– Number of Responses/Signatures by Organizational Affiliation for NEMO

			Number of Signatures
B	Business (my/our; Chamber of Commerce)	1	1
C	County Government Agency/Elected Official	5	5
D	Place Based Group (represents a region)	1	1
F	Federal Agency/Elected Official	2	2
I	Unaffiliated Individual	1,094	1,115
P	Preservation/Conservation Organization	17	18
Q	Tribal Government/Elected Official/Tribal Member/Association	1	1
R	Recreational Organization (Motorized/Non-motorized, non-specific)	23	24
S	State Government Agency/Elected Official	4	21
T	Town/City Government Agency/Elected Officials/Association	1	1
Z	Multiple Use/Wise Use Organization	2	2
Total		1,151	1,191

U.2.3 Response Type

Response types were tracked for each response submitted during the comment period. Responses were received in the form of letters, forms, transcripts, and one resolution.

Table U-4– Number of Responses/Signatures by Response Type for NEMO

			Number of Signatures
1	Letter	85	118
2	Form	1,004	1,012
3	Resolution	1	1
4	Action Alert	0	0
5	Transcript	60	60
Total		1,150	1,191

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Appendix V

USFWS Biological Opinion for Threatened and Endangered Plants in the Mojave Desert

New Appendix



United States Department of the Interior



FISH AND WILDLIFE SERVICE

Ventura Fish and Wildlife Office
2493 Portola Road, Suite B
Ventura, California 93003

February 27, 2002

Memorandum

To: State Director, Bureau of Land Management, Sacramento, California

From:  Field Supervisor, Ventura Fish and Wildlife Office, Ventura, California 

Subject: Biological Opinion for the California Desert Conservation Area Plan [Lane-Mountain Milk-vetch, Ash Meadows Gumplant, and Amargosa Niterwort]
(6840(P) CA-063.50) (1-8-01-F-18)

This document transmits the U.S. Fish and Wildlife Service's (Service) biological opinion based on our review of the California Desert Conservation Area Plan. The proposed action is the California Desert Conservation Area Plan as it has been formally amended since 1980, modified by previous consultations related to grazing, modified by proposed interim conservation measures, and proposed to be modified by the Northern and Eastern Mojave bioregional plan. At issue are the effects of the California Desert Conservation Area Plan, as modified and proposed for modification, and ongoing activities occurring in the California Desert Conservation Area on the federally endangered Lane Mountain milk-vetch (*Astragalus jaegerianus*) and Amargosa niterwort (*Nitrophila mohavensis*) and the threatened Ash Meadows gumplant (*Grindelia fraxino-pratensis*) and the designated critical habitat of the latter two species. This document was prepared in accordance with section 7(a)(2) of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 *et seq.*) (Act). Your request for formal consultation was received on January 31, 2001.

This biological opinion is based on the following information: (1) the California Desert Conservation Area Plan, as modified by various planning amendments between 1980 and 1999; (2) the Draft Environmental Impact Statement for the Northern and Eastern Mojave Planning Area; (3) your biological evaluation (Bureau 2001a); (4) information that was transmitted in a memorandum from the Bureau of Land Management (Bureau) to the Service on September 27, 2001; (5) various written and oral communications, including meetings between staff of the Service and the Bureau; (6) previous biological opinions on sheep and cattle grazing; and (7) various reports and publications. A complete administrative record of this consultation is on file in the Service's Ventura Fish and Wildlife office.

CONSULTATION HISTORY

On March 16, 2000, the Center for Biological Diversity, the Sierra Club, and the Public Employees for Environmental Responsibility filed a lawsuit against the Bureau. The plaintiffs alleged that the Bureau violated section 7(a)(2) of the Act and its implementing regulations by failing to initiate and complete a programmatic consultation with the Service on the effects of the California Desert Conservation Area Plan, its amendments, and all related actions that may affect listed species in the California Desert Conservation Area that are authorized, approved, allowed, or otherwise carried out pursuant to the California Desert Conservation Area Plan and its amendments. The plaintiffs also alleged that the Bureau violated section 7(d) of the Act and its implementing regulations by authorizing, allowing, or otherwise carrying out a variety of land use practices and other projects that might affect federally listed species prior to completing a programmatic consultation with the Service on the California Desert Conservation Area Plan and its amendments.

On August 25, 2000, the plaintiffs and the Bureau agreed to a settlement agreement that was approved by the U.S. District Court, Northern District of California, San Francisco Division. Terms of the agreement required that the Bureau enter into formal consultation with the Service under section 7(a)(2) of the Act on the California Desert Conservation Area Plan as it would be modified by proposed amendments resulting from various planning efforts. On January 16, 2001, the plaintiffs and the Bureau agreed to a second settlement agreement that described 58 measures intended to promote the conservation of various listed species, including the three addressed in this consultation, within the California desert.

The biological evaluation (Bureau 2001a) suggested that the threatened spring-loving centaury (*Centaurium namophilum* var. *namophilum*) may occur in the area occupied by the Ash Meadows gumplant. At least two species of centaury occur in the Ash Meadows area (Knight 1987); the taxonomic identity of the centaury plants in the area where the Ash Meadows gumplant occurs in California has not been determined. The riparian habitat in the lower Carson Slough area in California is drier than what is typically associated with the listed variety of centaury. For these reasons, we will not consider the centaury taxon in the project area as the listed variety until such time that a conclusive taxonomic determination is made. This taxon will not be evaluated further in this document.

We provided a draft biological opinion for your review on January 24, 2002. You provided comments on the draft by facsimile on February 15, 2002 (Bureau 2002). We incorporated many of your comments verbatim; we appreciate the efforts of your staff to clarify several aspects of the California Desert Conservation Area Plan. In a few cases, after discussions with your staff, we incorporated the comments in a modified form.

In our cover memorandum for the draft biological opinion, we inquired as to the status of lands within the expansion area for Fort Irwin. The Fort Irwin Military Land Withdrawal Act of 2001 reserved a portion of the area occupied by the Lane Mountain milk-vetch for various military

purposes and “conservation and related research.” As you clarified in your response to the draft biological opinion, responsibility for management of these lands passed to the Department of the Army when this legislation was signed. This biological opinion has been revised to reflect the current management situation.

DESCRIPTION OF THE PROPOSED ACTION

Purpose and Function of the California Desert Conservation Area Plan

Congress designated the California Desert Conservation Area with section 601(c) of the Federal Land Policy and Management Act of 1976. To provide for management of recreational use and to resolve other resource and public land use conflicts, the Federal Land Policy and Management Act also directed the Secretary of the Interior to “prepare and implement a comprehensive, long-range plan for management, use, development, and protection of the public lands within the California Desert Conservation Area.” The purpose, as specified by Congress, was “to provide for the immediate and future protection and administration of the public lands in the California Desert within the framework of a program of multiple use and sustained yield, and the maintenance of environmental quality.” The California Desert Conservation Area Plan was signed in January 1980 and now serves as the primary document that describes the basic management principles the Bureau uses for managing its portion of the California Desert Conservation Area. Since adoption, nine major amendments to the California Desert Conservation Area Plan have been completed.

The California Desert Conservation Area Plan employs three basic tools for managing resources in the California Desert Conservation Area. These tools are:

1. Four multiple-use classes are the basis of a land zoning system that allows for a variety of uses and resource conservation activities.
2. Twelve elements provide detailed treatments and prescriptions addressing the management of different land uses and resources.
3. The designation of special management areas, including, but not limited to Special Areas and Areas of Critical Environmental Concern, provides for the conservation of specific resource values.

Previous Consultations

The Bureau and Service have completed numerous formal consultations for actions that have occurred within the boundary of the California Desert Conservation Area. The only previous consultations relevant to any of the three species considered in this biological opinion regarded sheep grazing (1-6-91-F-18 and 1-8-94-F-16). As a result of the earlier biological opinion, subsequent extensions of that biological opinion, and the later consultation, the Bureau has not

allowed the grazing of sheep within most areas of critical habitat of the threatened desert tortoise (*Gopherus agassizii*) since approximately 1991; the removal of sheep grazing from this area benefits the Lane Mountain milk-vetch. The 1994 consultation will remain in effect until the Western Mojave Coordinated Management Plan is finalized and implemented.

Purpose and Function of the Proposed Interim Measures

The Bureau has proposed to implement several interim measures to protect threatened and endangered species within the California Desert Conservation Area. The interim measures were developed to provide short-term conservation benefits that can be implemented without incurring the long time frames that are required to complete the comprehensive bioregional plans.

Most of the interim measures will remain in effect until the California Desert Conservation Area Plan can be amended through the development of the bioregional plans. The final measures amending the California Desert Conservation Area Plan in the bioregional plans may differ from the interim measures presented here. As new amendments are proposed for the Plan, the Bureau will consult, pursuant to section 7(a)(2) of the Act, with the Service on the proposed changes.

Three interim measures proposed by the Bureau are relevant to the species being considered in this biological opinion. One measure, fencing of occurrences of the Amargosa niterwort and Ash Meadows gumplant, has already been implemented; additional discussion of this measure is included in the Environmental Baseline section of this biological opinion. To protect the Lane Mountain milk-vetch, the Bureau has proposed to retain all public lands containing populations of this species, consistent with Fort Irwin expansion legislation of December 2000. The Bureau also proposed to consider land exchanges or disposal involving listed species only if the exchanges or disposal would benefit the species.

Purpose and Function of the Bioregional Plans

Because the California Desert Conservation Area covers approximately 25 million acres and land management issues are substantially different across the desert landscape, federal, state, and local land management agencies have divided the California Desert Conservation Area into five bioregional planning areas. These include the Western Mojave Desert, the Northern and Eastern Mojave Desert, the Northern and Eastern Colorado Desert, the Western Colorado Desert, and the Coachella Valley. Major interagency planning efforts have been underway for some time in four of the five areas. Planning efforts have not yet begun in the Western Colorado Desert bioregion. The bioregional plans will be or have been written to develop region-specific management activities that are applicable to the local region. As such, the plans will address unique biological resource issues that are applicable to a given area and provide solutions that address local land management needs. The Bureau has participated in the bioregional planning efforts with the intent of amending the California Desert Conservation Area Plan to develop area-specific management plans that will address and improve conservation management of biological resources, particularly as it relates to protection and recovery of threatened and endangered

species. The species considered in this biological opinion occur within the Western Mojave Desert and Northern and Eastern Mojave Desert bioregional planning areas. The West Mojave Coordinated Management Plan is currently being developed; the draft Northern and Eastern Mojave plan has been released for public review.

Future Consultations

The California Desert Conservation Area Plan states that threatened and endangered species will be protected through compliance with the Act. The Bureau also notes in other documents that future consultations, pursuant to section 7(a)(2) of the Act, would be required for site-specific actions. Consequently, we have not repeated these commitments throughout the description of the proposed actions.

Multiple-Use Classes

To more effectively and consistently manage its portion of land within the California Desert Conservation Area boundary, the Bureau has developed a land zoning system that provides specific land management prescriptions. Under this zoning strategy, most lands managed by the Bureau are assigned one of four multiple-use classes. The multiple-use class assignment is based on the considered sensitivity of resources and kinds of uses occurring in each geographic area. The four multiple-use classes are Class C (Controlled Use), Class L (Limited Use), Class M (Moderate Use), and Class I (Intensive Use).

Multiple-Use Class C: Formally designated wilderness areas are managed under this class. Congress designated wilderness areas across large portions of the California Desert Conservation Area in 1994 with the California Desert Protection Act; these Congressional designations supercede the multiple-use class boundaries assigned by the Bureau in 1980 when the California Desert Conservation Area Plan was finalized.

Multiple-Use Class L: Lands within this class include areas that are managed to provide for lower density, carefully controlled multiple uses of resources while ensuring that sensitive values are not significantly diminished.

Multiple-Use Class M: Lands within this class include areas that are managed to provide for a wide variety of present or future uses that include mining, livestock grazing, recreation, energy, and utility development.

Multiple-Use Class I: Lands within this class include areas that will experience concentrated use serving human needs. The Bureau attempts to mitigate impacts to resource values in Class I lands and attempts to rehabilitate these disturbed areas to the extent possible while conserving resources and mitigating impacts to resource values.

In addition to the four multiple-use classes, the Bureau also manages a limited amount of land that has not been classified. Parcels in the “unclassified lands” category are managed on a case by case basis, according to the land tenure adjustment element that is described in greater detail below.

The Lane Mountain milk-vetch, Amargosa niterwort, and Ash Meadows gumplant do not occur on any Class I, C, or unclassified lands. Consequently, we will not discuss these multiple-use classes further in this biological opinion. The following section describes the differences between Class L and M lands as they relate to the species under consideration in this biological opinion.

All land-use actions and resource-management activities on public lands must meet the guidelines for the class of land on which they would occur. These guidelines are divided into the following 19 categories and are more fully described in the California Desert Conservation Area Plan (Bureau 1999). Implementation of most guidelines within Class L and M lands would require any proposed action to undergo site-specific analysis, with protective measures added to any permit, grant, or mining action (plans of operation or notice) processed by the Bureau. In the following description of these guidelines, we have omitted discussions that are not relevant to the management of the Lane Mountain milk-vetch, Amargosa niterwort, and Ash Meadows gumplant.

1. Agriculture: Agricultural practices and uses are not allowed in Class L and M lands. Because this program guidance prohibits the disturbance of land that may be occupied by these species, it will not adversely affect and will benefit the species being considered in this biological opinion. Consequently, the agricultural guidelines will not be discussed further in this document.
2. Air quality: The Bureau manages Class L and M lands to protect air quality and visibility in accordance with Class II objectives of Part C of the Clean Air Act unless otherwise designated another class by the State of California as a result of recommendations developed by any air-quality management plan developed by the Bureau. Management activities that conform with Class II objectives will result, at a minimum, in the maintenance of existing air quality conditions and will not result in the degradation of current air quality conditions. We anticipate that this guideline is not likely to adversely affect the species being considered in this biological opinion because maintenance of Class II objectives should not impair the growth or reproduction of individuals of these species. Consequently, the air quality guidelines will not be discussed further in this document.
3. Water quality: Within Class L, areas will be managed to provide for the protection and enhancement of surface and groundwater resources, except for instances of short-term degradation caused by water development projects. (“Water development projects” are generally considered to be springboxes and other devices used at springs and streams to

provide water to livestock and wildlife (Foreman, pers. comm.) Best management practices, developed by the Bureau, during the planning process for specific projects, will be used to avoid degradation.

Because they are intended to protect and enhance water quality, the guidelines for water quality are unlikely to adversely affect the Ash Meadows gumplant. The Lane Mountain milk-vetch is not a water-dependent species; these guidelines would not affect it. Consequently, this guideline will not be discussed further in this document in relation to the Ash Meadows gumplant and Lane Mountain milk-vetch.

Within Class M, areas will be managed to minimize degradation of water resources. Best management practices, developed by the Bureau, during the planning process for specific projects, will be used to avoid degradation.

4. Cultural and paleontological resources: The program guidance calls for the Bureau to preserve and protect archaeological and paleontological values that occur in both Class L and M lands.
5. Native American values: Cultural and religious values of Native Americans will be preserved where relevant and protected when applicable.
6. Electrical generation facilities: The Bureau's guidelines preclude the possibility of establishing nuclear and fossil fuel facilities on Class L lands. Because this program guidance prohibits the disturbance of land that may be occupied by these species on Class L lands, it will not adversely affect the species being considered in this biological opinion. We will not discuss nuclear and fossil fuel facilities on Class L lands further in this document.

The Bureau's guidelines allow the establishment of nuclear, fossil fuel, wind, solar, and geothermal facilities on Class M lands and wind, solar, and geothermal facilities on Class L lands.

Existing facilities in both Class L and M lands may be maintained and upgraded or improved in accordance with special use permits or by amendments to rights-of-way. No such facilities occur within the habitat of these three species; therefore, this guidance will not affect the Lane Mountain milk-vetch, Amargosa niterwort, and Ash Meadows gumplant. Consequently, we will not discuss the maintenance or improvement of existing electrical generation facilities further in this document.

7. Transmission facilities: Within Class L and M lands, new gas, electric, and water transmission facilities and cables for interstate communication may be allowed only within designated corridors: these corridors were developed specifically for large-scale facilities. To minimize the number of separate rights-of-way for different and unrelated

utility projects, 16 planning corridors have been identified. No utility corridors are located within the habitat of the three species being considered in this biological opinion; therefore, they will not be affected by this guideline. Consequently, we will not discuss new gas, electric, and water transmission facilities and cables for interstate communication further in this document.

- 7a. Distribution facilities: Within Class L and M lands, existing facilities may be maintained and upgraded or improved in accordance with existing right-of-way grants. This guideline will not affect the Amargosa niterwort or Ash Meadows gumplant because no utilities currently exist within their habitats. Consequently, this guideline, in relation to these two species, will not be discussed further in this biological opinion.

Within Class L lands, new distribution systems may be allowed and will be placed underground, where feasible, unless this would have a more detrimental effect on the environment than surface alignment. New distribution facilities will be placed within existing rights-of-way, where they are reasonably available.

Within Class M lands, new distribution systems may be allowed and will be placed within existing rights-of-way, where they are reasonably available.

8. Communication sites: Existing facilities in both Class L and M lands may be maintained and used in accordance with right-of-way grants and applicable regulations. This guideline will not affect the Amargosa niterwort or Ash Meadows gumplant because no communication sites currently exist within their habitats. Consequently, this guideline, in relation to these two species, will not be discussed further in this biological opinion.

Within Class L and M lands, new sites may be allowed.

9. Fire management: Measures to suppress fires will be taken in accordance with specific fire management plans subject to such conditions as the authorized officer deems necessary. Fire suppression may involve the use of motorized vehicles, aircraft, and fire retardant chemicals.
10. Vegetation Harvesting: On Class L and M lands, removal of native plants for commercial and non-commercial purposes and harvesting by mechanical means may be allowed by permit. Unusual plant assemblages will be considered when conducting site-specific impact analyses so impacts can be minimized.

Mechanical control to manipulate vegetation will not be allowed on Class L lands. Because this guideline precludes adverse effects to the listed species, we will not discuss it in relation to Class L lands further in this document. On Class M lands, mechanical control of vegetation may be allowed after consideration of possible impacts.

Aerial application of chemical controls to manipulate vegetation will not be allowed on Class L and M lands. Because this guideline precludes adverse effects to the listed species under consideration in this biological opinion, we will not discuss it further in this document.

Eradication of noxious weeds on Class L lands by chemical means may be allowed after site-specific planning. Spot application of pesticides on Class M lands may be allowed after site-specific planning.

Exclosures may be allowed within Class L and M lands.

Prescribed burning may be allowed within Class L and M lands after development of a site-specific management plan.

11. Land-tenure adjustment: The Bureau's program guidance for land-tenure adjustment is designed to direct the acquisition and disposal of public lands within the California Desert Conservation Area. The purpose for acquiring and disposing of public lands is related to the difficulty of effectively and efficiently managing a land base that possesses an intermingled land ownership. The Bureau therefore has a program for acquiring lands that may improve the operational management aspects for special areas such as areas of critical environmental concern, intensive use recreation areas, and Class C lands. Conversely, other lands that may have a limited resource value may be disposed of at fair market value if the action is deemed to be beneficial.

Program guidance does not allow the sale of Class L lands. Additionally, the Bureau has proposed to retain all public lands containing populations of the Lane Mountain milk-vetch. The Ash Meadows gumplant occurs only on Class L lands. The guideline and the proposed interim measure preclude the disposal of all lands supporting the Lane Mountain milk-vetch.

Program guidelines allow the sale of Class M lands. A substantial portion of the habitat of the Amargosa niterwort occurs within Class M lands; the disposal of parcels containing such habitat could be greatly detrimental to the conservation of the species. However, the Bureau has proposed the creation of an area of critical environmental concern to protect this species. A key strategy in protecting any species is the consolidation of land ownership. Therefore, the disposal of any lands supporting the Amargosa niterwort would be counter productive and highly unlikely.

For these reasons, this guideline is not likely to adversely affect the Lane Mountain milk-vetch, Amargosa niterwort, and Ash Meadows gumplant. We will not discuss program guidance with regard to land-tenure adjustment further in this document.

12. Livestock grazing: Grazing activities may be permitted on Class L and M lands; however, the Bureau has not established a grazing allotment in the area where the Ash Meadows gumplant and Amargosa niterwort are known to occur. Therefore, grazing within the ranges of these species cannot occur. Grazing historically occurred within habitat of the Lane Mountain milk-vetch; however, past consultations between the Service and Bureau regarding the effects of sheep grazing on the desert tortoise have resulted in the cessation of grazing in the areas where this plant is known to occur. A long-term resolution of the sheep grazing issue in areas inhabited by the Lane Mountain milk-vetch will be reached through the West Mojave Coordinated Management Plan.

Because livestock grazing within habitat occupied by the Lane Mountain milk-vetch, Amargosa niterwort, and Ash Meadows gumplant is precluded by the Bureau's existing management, these species are not likely to be adversely affected by this aspect of the California Desert Conservation Area Plan. Consequently, we will not discuss it further in this document.

13. Mineral exploration and development: Exploration for and development of leasable minerals are allowed within Class L and M lands. Leasable materials include sodium, potassium, oil, gas, and geothermal resources. The Bureau must prepare an environmental assessment, in compliance with the National Environmental Policy Act; mitigation and reclamation measures will be required to protect and rehabilitate sensitive, scenic, ecological, wildlife, vegetation, and cultural values. In certain cases, the Bureau may proceed after the adoption of a categorical exclusion, as defined by the National Environmental Policy Act.

Locatable materials include iron, gold, silver, talc, tungsten, zinc, rare earths, and borates. The location of mining claims is non-discretionary. Operations on mining claims within Class L and M lands are subject to 43 Code of Federal Regulations (CFR) 3809 and applicable State and local laws. The Bureau will review plans of operation for potential impact to sensitive resources; mitigation, subject to technical and economic feasibility, will be required.

The extraction of saleable minerals, which include sand and gravel, is allowed within Class L and M lands. An environmental assessment will be required for any new materials sales location, except for instances when the adoption of a categorical exclusion is deemed appropriate. The continued use of existing areas of sand and gravel extraction is allowed, subject to permits issued by the Bureau.

14. Motorized-vehicle access and transportation: On Class L lands, new roads and ways may be developed under right-of-way grants or pursuant to regulations or approved plans of operation. Motorized vehicle use will be allowed on existing routes of travel until designation of routes is accomplished.

On Class M lands, motorized vehicle use will be allowed on existing routes of travel unless closed or limited by the authorized officer. New routes may be allowed upon approval of the authorized officer.

On Class L and M lands, the Bureau can implement periodic or seasonal closures or limit use of routes. Access will be provided for mineral exploration and development.

Within Class L lands, railroads and trams may be allowed to serve authorized uses if no other viable alternative is available. Within Class M lands, railroads and trams may be allowed.

Within Class L lands, temporary landing strips may be allowed by permit. Within Class M lands, airports and landing strips may be allowed by lease, subject to conformance with county or regional airport loans and approval by the Department of Defense and Federal Aviation Administration.

15. Recreation: Within Class L lands, the Bureau's guidelines allow for recreation which generally involves low to moderate user densities. Recreational activities can include backpacking; camping at primitive, unimproved sites; hiking; horseback riding; rockhounding; nature study; rock climbing; and non-competitive vehicle touring and events on approved routes of travel. Any organized event requires a permit specifying the conditions of use, which could include the definition of the approved routes and prohibitions, such as no pit, start, finish, or spectator areas.

Within Class M lands, the Bureau's guidelines allow for recreation which may involve moderate to high user densities. Recreational activities can include those permitted for Class L lands. Competitive events involving motorized vehicles are limited to existing routes of travel and must be approved by the authorized officer. Pit, start, and finish areas must be approved by the authorized officer. All competitive events involving 50 or more vehicles require permits.

On Class L and M lands, trails are open for non-vehicle use; new trails for non-motorized access may be allowed. The Bureau's guidelines also provide for permanent or temporary facilities for resource protection and public health and safety.

16. Waste disposal: The guidelines for Class L lands do not allow for the establishment of hazardous waste sites or new non-hazardous waste disposal sites. Because this guideline precludes adverse effects to the listed species under consideration in this biological opinion, we will not discuss it further in this document in relation to Class L lands.

Within Class M lands, public lands managed by the Bureau may not be used for disposal of hazardous or non-hazardous waste. Where locations suitable for such disposal are found on Bureau lands, these lands may be transferred to other ownership for this use.

The discussion in this section of the biological opinion on land-tenure adjustment provides a rationale for why the Bureau would not dispose of any Class M lands on which the Lane Mountain milk-vetch and Amargosa niterwort occur. For those reasons, the waste disposal guideline is not likely to adversely affect the listed species under consideration in this biological opinion; therefore, we will not discuss it further in this document.

17. Wildlife species and habitats: Within Class L and M lands, control of depredating wildlife and pests will be allowed in accordance with existing State and federal laws. Habitat may be manipulated to improve its value for wildlife. Within Class M lands, chemical and mechanical manipulation may be allowed. The reintroduction or introduction of native or established exotic species is allowed within Class L and M lands.
18. Wetlands: Within Class L and M lands, program guidance for wetland and riparian areas requires that these habitats be managed in accordance with Executive Order 11990, legislative and Secretarial direction, and Bureau manual 6470 (Wetland-Riparian Area Protection and Management). Implementation of management actions that are conducted in conformance with this guidance is expected to benefit the Ash Meadows gumplant and Amargosa niterwort. Because the Lane Mountain milk-vetch does not occur in or near wetland or riparian habitat, this guidance will not affect this species. Because this guideline is not likely to adversely affect the listed species under consideration in this biological opinion, we will not discuss it further in this document.
19. Wild horses and burros: The Bureau manages horses and burros under its jurisdiction according to the guidelines contained within the Wild and Free-Roaming Horse and Burro Act. Management activities are designed to achieve and maintain population levels that ensure healthy herds while also maintaining a thriving natural ecological balance and accommodating multiple use activities within the local area. Management of burros and horses is facilitated with the designation of herd management areas. In the draft Northern and Eastern Mojave plan, the Bureau proposes to administratively change the number of horses and burros in the Chicago Valley Herd Management Area from the current level of 28 horses and 28 burros to 12 horses and 0 burros.

The Chicago Valley Herd Management Area overlays the critical habitat unit for the Amargosa niterwort and the only one of the twelve critical habitat units of the Ash Meadows gumplant that is in California. The horses in the herd management area generally frequent the area near Death Valley Junction and, on rare occasions, may be present near the Franklin Lake playa south of the habitat of listed species; although the Death Valley Junction area is near the critical habitat of the Amargosa niterwort, the Amargosa niterwort habitat is not typically preferred by horses. Additionally, the horses rarely occupy areas where these two listed plants are present. Finally, few horses inhabit the herd management area; the amount of disturbance these individuals may cause in the

limited time they may spend within occupied habitat of the Amargosa niterwort and Ash Meadows gumplant is negligible. The Bureau has concluded and we concur that its program guidance and ongoing activities for the wild horse and burro element is not likely to adversely affect the Ash Meadows gumplant and Amargosa niterwort.

Neither horses or burros occur within areas occupied by the Lane Mountain milk-vetch. The Bureau has concluded and we concur that the wild horse and burro element will not affect this plant species. Consequently, the wild horse and burro element will not be discussed further in this document with regard to the Lane Mountain milk-vetch.

Elements

Twelve program elements provide more specific application of the multiple-use class guidelines for resources or activities that have been identified as a matter of public interest. Each element has a set of goals and planned actions and a description of how these goals and actions will be implemented and monitored. Descriptions of the twelve elements follow.

Cultural Resources Element: Historic and prehistoric remains that include, but are not limited to, paleontological resources, such as vertebrate and invertebrate fossils, historic and prehistoric routes, road side artifacts, and historic buildings are managed under this element. Typically, activities associated with this program element are designed to protect historic and prehistoric remains. The Bureau may undertake activities to stabilize or restore areas supporting cultural and paleontological resources. Locations supporting these resources may be monitored. The Bureau may also permit well-directed research at sites supporting these resources.

Native American Element: American Indian tribes have lived within the boundary of the California Desert Conservation Area for several thousand years and have left thousands of sites containing Native American artifacts such as burial remains, lithic scatter sites, and objects associated with historic or prehistoric hunting camps or long-term residences. Members of Native American tribes consider Bureau lands within the California Desert Conservation Area as part of their tribal homeland; they may wish to use these lands for a variety of activities that relate to hunting, religious worship, and the collection or cultivation of plant resources.

To protect historic and prehistoric artifacts and provide for the continued use of the desert landscape by Native Americans, the Bureau uses several tools, including land use designations (*e.g.*, Class C or L) to protect Native American artifacts and promote traditional land uses and customs and designation of Areas of Critical Environmental Concern and development of activity plans for site-specific management guidelines. The Bureau and different tribal governments also hold formal and informal discussions or communications on an irregular basis. Guidance for this element requires the Bureau to provide full consideration to Native American values in land use planning and management decisions; the Bureau has also committed to manage and protect these values whenever prudent and feasible.

Wildlife Element: The Bureau manages wildlife through a variety of mechanisms that include the development of habitat management plans or activity plans for areas of critical environmental concern, the designation of special management areas or vehicle routes, or the development of Sikes Act agreements. This element calls for baseline monitoring of certain wildlife populations and how use of the desert may be affecting this resource.

Vegetation Element: Vegetation management within the California Desert Conservation Area may include vegetation production; plant harvesting; management of rare, threatened, and endangered species; designation and management of unusual plant assemblages; and vegetation manipulation that is designed to promote the growth of desirable species such as jojoba (*Simmondsia californica*) or retard the spread of undesirable weedy plants such as salt cedar (*Tamarix ramosissima*). Vegetation production is typically a passive, naturally occurring process that is influenced by seasonal growth patterns and precipitation rates. Management of rare, threatened, or endangered species typically includes survey work designed to determine their distribution, abundance, and status. Unusual plant assemblages are plant communities that are recognized for their unusual age, size, cover, or density, or that represent a disjunct distribution. Unusual plant assemblages also include relatively rare plant assemblages that are typically associated with wetland, riparian, limestone outcrop, or sand dune habitats. Designation of an unusual plant assemblage benefits vegetation communities because these areas receive additional consideration during impact analyses.

The Bureau manages wetland and riparian areas in the California Desert Conservation Area with specific objectives to avoid long- and short-term impacts associated with their destruction, loss, or degradation and to preserve and enhance their natural and beneficial values. This management may include constraining or excluding those uses that cause significant long-term ecological damage. The Bureau has designated at least portions of the habitats of the Ash Meadows gumplant and Amargosa niterwort as the Seep and Springs, Mesquite Bosque, and Brackish Water Marsh Unusual Plant Assemblages. Because of their designation as unusual plant assemblages and the specific objectives for managing wetlands and riparian areas, we concur with the Bureau's determination that the program guidance with regard to vegetation management is likely to benefit these species.

Wilderness Element: The Bureau has concluded and we concur that its program guidance for the wilderness element is not likely to adversely affect the Lane Mountain milk-vetch, Amargosa niterwort, or Ash Meadows gumplant because these species are not located within wilderness areas. Consequently, the wilderness element will not be discussed further in this document.

Wild Horses and Burros Element: The Bureau has concluded and we have concurred that the wild horse and burro element is not likely to adversely affect the Lane Mountain milk-vetch, Amargosa niterwort, or Ash Meadows gumplant. The basis for this conclusion is discussed in the Multiple-Use Class (wild horse and burro) section of this biological opinion.

Livestock Grazing Element: We have concluded that the livestock grazing element is not likely to affect the Lane Mountain milk-vetch, Amargosa niterwort, or Ash Meadows gumplant. The basis for this conclusion is discussed in the Multiple-Use Class (livestock grazing) section of this biological opinion.

Recreation Element: This element includes activities that involve both motorized (*e.g.*, dune buggies, dirt bikes, all terrain vehicles, and other vehicles) and non-motorized recreation (*e.g.*, target shooting, land sailing, rock hounding, hiking, sight seeing, hunting, camping, bird watching, and nature study). Motorized recreation includes point-to-point travel on existing routes as part of organized events or on a casual basis; it also involves free play within designated off-highway vehicle management areas. The element also provides for the development of trails and facilities to meet visitor service needs. The Bureau has a public outreach program that is intended to provide visitors with information on the desert and increase environmental awareness; a volunteer program and maps and brochures produced by the Bureau assist in this effort. Monitoring of this visitor services program is designed to provide accurate information on levels of recreational use and adequacy of public facilities.

Motorized-Vehicle Access Element: Motorized vehicles are the primary tool that most visitors use to access various portions of the California Desert Conservation Area. The Bureau distinguishes between the use of mechanized vehicles for recreation purposes (*e.g.*, competitive events, motorcycle free-play) and the use of vehicles to convey visitors to various areas of the desert. Because funding is limited and Bureau lands in the California Desert Conservation Area are extensive, the Bureau does not intensively patrol lands under its administration to ensure that the public complies with its vehicular access guidelines. Because the species under consideration in this biological opinion do not occur on Class C and I lands, guidelines for these areas will not be discussed herein.

Motorized vehicular access on Bureau lands within the California Desert Conservation Area is managed with the aid of area and route designations. Area designations include “open,” “closed,” or “limited” use categories.

Areas that are classified as being “open” allow travel anywhere if the vehicle is driven in a responsible manner and private property rights are respected. Lands in this category include certain sand dunes and lake beds.

Vehicular use in “closed” areas is normally not permitted. Prohibitions against vehicular use typically apply to land in Areas of Critical Environmental Concern and Special Areas where provided for in management plans, certain sand dunes and dry lake beds, and select areas that are identified in the Bureau’s Interim Critical Management Plan. This Interim Critical Management Plan established guidelines for vehicle use that are to remain in effect until routes are designated for the California Desert Conservation Area.

Vehicle use in “closed” areas may be permitted in certain cases. Fire, military, emergency, or law enforcement vehicles may be used in these areas for emergency purposes. Combat or combat support vehicles may be used for national defense purposes. Finally, vehicle use may be expressly authorized by an agency head under a permit, lease, or contract; and when vehicles are used for official purposes by employees, agents, or designated representatives of the federal government or one of its contractors.

In “limited” use areas, motorized-vehicle access is allowed only on certain “routes of travel” which include roads, ways, trails, and washes. At a minimum, vehicle use is restricted to existing routes of travel. An existing route of travel is a route that existed before the approval of the California Desert Conservation Area Plan in 1980. These routes must have had a minimum width of 2 feet, showed substantial surface evidence of prior vehicle use, or, for washes, had a history of prior use.

Vehicle access in “limited” use areas is further modified by different land use classifications. Within Class M lands, access is limited to existing routes, unless the Bureau has determined that use on specific routes must be limited further. Within Class L areas, vehicle access is directed toward use of approved routes of travel. Approved routes include primary access routes intended for regular use and for linking desert attractions for the general public and secondary access routes intended to meet specific user needs. In Areas of Critical Environmental Concern where vehicle use is allowed, vehicle access will be managed under the guidelines for Class L lands.

Stopping, parking, and vehicular camping along “routes of travel” is limited to within 300 feet of a route. In some locations, specific parking or stopping areas may be signed “open” or “closed” to protect fragile or sensitive resources adjacent to the route or to provide a safe place to stop.

Vehicle use in desert washes is governed by the local area designation. Vehicle use in desert washes is prohibited in areas that have been designated as being “closed.” Vehicle access in desert washes is permitted in areas that are designated as being “open.” In all “limited” use areas, vehicle use in desert washes will be controlled according to the travel restrictions that are applicable to the local multiple-use class category. In addition, washes may have travel restrictions (*e.g.*, speed limits or seasonal closure) that are designed to protect resources found in or along the wash or to minimize conflicts with other uses.

The Bureau may post signs that describe the approved type of motorized vehicle access (open, closed, limited) that applies to a given area. The Bureau will also, with public involvement, determine which routes in Class L or M lands need to be closed or limited in some way. Routes not approved for vehicle access would, in most instances, be obliterated, barricaded, signed, or otherwise marked.

In areas with mining operations, additional access needs are managed in accordance with the Bureau’s Exploration and Mining-Wilderness Review Program regulations (43 CFR 3802) and the 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, competitive events, or communication sites, are permitted on an individual basis under Federal Land Policy and Management Act guidelines and other appropriate regulations.

Geology, Energy, Minerals Resources Element: Forty-six mineral commodities, including some of national and international importance, are known to exist in the California Desert Conservation Area. Substantial resources of geothermal energy are also present in the California desert. In the California Desert Conservation Area, approximately 360 exploration and mining plans of operation are active; approximately 22 of the mining and 5 to 10 of the exploration operations that are currently active have substantial development footprints.

Most exploration and development activity on public lands in the California Desert Conservation Area is guided and authorized under the General Mining Law of 1872 (30 U.S.C. 22 *et seq.*). Other applicable laws that regulate extraction and exploration for mineral resources include the Mineral Leasing Act of 1920 (30 U.S.C. 181 *et seq.*), Geothermal Steam Act of 1970 (30 U.S.C. 1001 *et seq.*), and the Materials Act of 1947, as amended (30 U.S.C. 701 *et seq.*). Collectively, these laws allow use of surface resources provided that the activities comply with appropriate federal and state laws and rules. Regulations developed pursuant to the Federal Land Policy and Management Act (43 CFR 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 and undue impairment to public lands and resources in the California Desert Conservation Area.

The Code of Federal Regulations addresses three distinct levels of mining law. Text appearing in the 1980 California Desert Conservation Area Plan has been revised to include changes that were addressed in the revised surface management regulations at 43 CFR 3809, published in the *Federal Register* on January 20, 2001, and amended in October 2001. The new regulations affect three distinct levels of mining operations based on surface disturbance and degree of impact in sensitive areas. These include casual use, notices, and plans of operation.

Casual Use: Casual use is defined as activities causing no or negligible surface disturbance to public lands or resources. Mining conducted under the casual use category includes the collection of geochemical, rock, soil, or mineral specimens using hand tools, hand panning, sluicing, and small portable suction dredges. It also generally includes use of metal detectors, gold spears and other battery-operated devices for sensing the presence of minerals, and hand and battery-operated drywashers. Operators may use motorized vehicles for casual use activities provided the use is consistent with the regulations governing such use, off-road vehicle use designations contained in land-use plans, and the terms of temporary closures ordered by the Bureau. Because of the guidelines in the California Desert Conservation Area Plan, vehicles cannot be operated off roads as part of the casual use provisions of the mining regulations within habitat of the three species under consideration in this biological opinion. Casual use does not include use of mechanized earth-moving equipment, truck-mounted drilling equipment, motorized vehicles in areas when designated as closed to "off-road vehicles," chemicals, or

explosives. It also does not include “occupancy” or operations in areas where the cumulative effects of the activities result in more than negligible disturbance. Mining activity conducted under the casual use category does not require that the operator notify the Bureau or acquire its approval prior to conducting field activities. Operators must reclaim any casual-use disturbance that is created during their activities. If activities do not qualify as casual use, an operator must submit a notice or plan of operation, whichever is applicable.

Where the cumulative effects of casual use by individuals or groups have resulted in, or are reasonably expected to result in, more than negligible disturbance, the Bureau’s State Director may establish specific areas as he or she deems necessary. In such cases, any individual or group intending to conduct activities under the mining laws must contact the Bureau 15 calendar days before beginning activities to determine whether the individual or group must submit a notice or plan of operation.

Notices: Operations under a notice are limited to exploration activity and involve surface disturbances greater than those associated with casual use. Actions associated with this category involve sampling, drilling, or developing surface workings to evaluate the type, extent, quantity, or quality of mineral values present. Exploration does not include activities where material is extracted for commercial use or sale.

Notices are not allowed on “any lands or waters known to contain federally proposed or listed threatened or endangered species or their proposed or designated critical habitat, unless [the Bureau] allows for other action under a formal land-use plan or threatened or endangered species recovery plan” (43 CFR 3809.11(c)(6)). None of the Bureau’s land-use plans in the California Desert Conservation Area provide for the use of notices in habitat of threatened or endangered species. For these reasons, operations conducted under a notice are not likely to adversely affect the listed species under consideration in this biological opinion. We will not discuss notices further in this document.

Plan of Operation: A Bureau-approved plan of operation is required before the initiation of exploration or mining activities that are greater than casual use or are acceptable under a notice. A plan of operation is required for any bulk sampling in which the operator will remove 1,000 tons or more of presumed ore for testing. A plan of operation is required for any operations causing surface disturbance greater than casual use in the following special status areas that occur within habitat of the three plant species being considered in this biological opinion:

1. lands designated as Class C or L,
2. designated areas of critical environmental concern,
3. areas designated as “closed” [under regulations at 43 CFR 8364 and published in the *Federal Register*] to off-road vehicle use [meaning cross-country travel], and
4. any lands or waters known to contain federally proposed or listed threatened or endangered species or their proposed or designated critical habitat, unless the Bureau allows for other action under a formal land-use plan or recovery plan.

The plan of operation must contain a complete description of the entire mining operation. Pertinent information in the plan will include, but not be limited to, the location and spatial extent of the proposed mining operation, the type of equipment that will be used to extract ore, a map showing the location of the project area in sufficient detail for Bureau staff to be able to find it and the location of access routes intended to be used, improved, or constructed during the mining activity, the type of support facilities, location of drill sites (to the extent possible), measures to prevent unnecessary or undue degradation, and a reclamation plan for the land involved. The plan of operation must demonstrate that the proposed operations would not result in unnecessary or undue degradation, or undue impairment to public lands in the California Desert Conservation Area.

Under the mining regulations, lands affected by all operations will be reclaimed, regardless of whether the operations are conducted under the casual use category, under a notice, or under a plan of operation. Regulations for reclamation activities are provided in 43 CFR 3809.1-3(d) and include guidance regarding the development of access routes; disposal of tailings, dumps, deleterious materials or substances, and other waste produced by the operations; reclamation of the disturbed area; and inspection of the reclaimed area.

Approval of any plan of operation will be subject to changes or conditions that are necessary to meet the performance standards and to prevent unnecessary or undue degradation. The Bureau may require the operator to incorporate into the plan of operation other agency permits, final approved engineering designs and plans, or other conditions of approval. No operations may be conducted until the Bureau approves the plan of operation and receives the financial guarantee.

Extraction of geothermal, oil, and gas reserves may also take place on Bureau lands. Areas that may contain geothermal resources may be designated as a “known or potential geothermal resource area.”

All operating plans are reviewed to ensure that the compliance guidelines of the National Environmental Policy Act are met. An operating plan may be conditioned and required to proceed with stipulations, modifications, or amendments that are developed through the process of environmental review. Plans are stipulated to bring the operation into compliance with the requirements regarding undue or unnecessary degradation and undue impairment, and to ensure protection of natural resources, reasonable reclamation, and proper conservation of the mineral resource. Policy directs that all operating plans and operations conducted on public land be inspected to ensure compliance with the terms of approval, regulations, and statutes.

Reclamation includes those activities associated with recontouring waste piles, reshaping pit walls and other excavations, removal of permanent or temporary facilities or structures, and soil placement, preparation, and in some cases, reseeding and maintenance of plants. Reclamation may also include any measures required to enhance or facilitate enhancement of previously disturbed areas or to modify areas to facilitate or accept displaced wildlife. As related to assuring

a diverse and complete habitat as existed before operations, restoration of the area may be required. This normally entails inventory and consideration of the local biological features and the development of measures and time frames to ensure complete recovery, if required.

The Bureau requires that operators post a bond for surface disturbing operations conducted under a notice, plan of operation, or activity conducted under the Mineral Leasing or Materials Acts. The bond is required to cover liability for reclaiming disturbances approved in the plan of operation.

Mineral leasing, or any other activity, will require an environmental analysis pursuant to the National Environmental Policy Act unless exempted. Activities affecting a threatened or endangered species will not qualify for an exemption (*i.e.*, categorical exclusion) from this requirement. Mineral material sales in Class L and M lands are processed under 43 CFR 3600. If a new extraction area in a Class L area is expected to be larger than 5 acres in size, documentation pursuant to the National Environmental Policy Act will be prepared to cover the entire area of potential extraction.

No mining operations will be allowed if such activity would cause unnecessary or undue degradation.

Energy Production and Utility Corridors Element: The Bureau has concluded and we have concurred that the portion of this element regarding utility corridors is not likely to adversely affect the Lane Mountain milk-vetch, Amargosa niterwort, or Ash Meadows gumplant. The basis for this conclusion is discussed in the Multiple-Use Class (transmission facilities) section of this biological opinion.

The Bureau may also allow the siting of microwave tower sites, and conventional, solar, geothermal, wind, and nuclear power plants on Bureau lands within the California Desert Conservation Area.

Land-Tenure Adjustment Element: This element is not likely to adversely affect the Lane Mountain milk-vetch, Amargosa niterwort, and Ash Meadows gumplant for the reasons discussed in the Multiple-Use Class (land-tenure adjustment) section of this biological opinion.

Special Management Areas

The third major management tool that is used for planning and management purposes in the California Desert Conservation Area Plan involves the designation of special management areas, such as Areas of Critical Environmental Concern or other Special Areas. Other areas which possess rare, unique, or unusual qualities of scientific, educational, cultural, or recreational significance may be designated as research natural areas, outstanding natural areas, other natural areas, national natural landmarks, national historical landmarks, national register of historic

places, historic American engineering records, national scenic trails, national historic trails, man and biosphere reserves, and recreation lands.

After an area has been formally designated as an area of critical environmental concern or other Special Area, a site-specific activity plan is prepared. Activity plans vary in size and complexity depending on the nature of the resources and uses within the area of critical environmental concern. Activity plans clearly identify the ongoing management objectives for the area of critical environmental concern. The activity plan also includes a description of types of future uses, activities, or management practices considered compatible with the purposes of the area of critical environmental concern and a description of any existing incompatible uses, activities, or practices within the area. The plan also provides a schedule for implementing management goals. The activity plan includes the details of implementing the special management requirements, such as patrol schedules, posting signs, patrolling, and fencing specifications for facilities. Plans are prepared by interdisciplinary teams that consider all of the resources and uses present. Plans are subject to public review and environmental analysis.

Development, when wisely planned and properly managed, will take place in areas of critical environmental concern if the basic intent of protection of historic, cultural, scenic, or natural values is assured. In the case of certain wildlife and cultural resources, surface disturbances from mining, motorized-vehicle access, and grazing or other uses will be controlled. In some cases, fencing may be used to prevent unintentional impacts. Some valuable wildlife resources will require assistance in the way of reducing or eliminating competition for water sources or forage. Directional signs and visitor use areas will be developed and designated to encourage visitor cooperation; informational facilities and interpretive programs will be developed to increase visitors' knowledge of and sensitivity to the protective needs of important natural and cultural resource values. Consultation with the adjacent land owners will be conducted when areas of critical environmental concern and their management may conflict with adjacent owners' land uses and requirements.

Management prescriptions for areas of critical environmental concern may override the multiple-use class guidelines for the local area. The Bureau monitors existing conditions within an area of critical environmental concern to ensure that resource degradation is not occurring. Monitoring data will be used to guide corrective actions that may be necessary.

In summary, areas of critical environmental concern and other special areas are established to conserve specific resources; the presence of a listed taxon within such an area would prompt the development and implementation of management to conserve that taxon. Therefore, the program guidance for special management areas is not likely to adversely affect the Lane Mountain milk-vetch, Ash Meadows gumplant, or Amargosa niterwort. The program guidance for this basic component of the California Desert Conservation Area Plan will not be discussed further in this biological opinion.

Management Actions associated with the Proposed Northern and Eastern Mojave Bioregional Plan

The draft Northern and Eastern Mojave bioregional plan proposes specific management actions that relate to the Amargosa niterwort and Ash Meadows gumplant. The Bureau proposes to create a Lower Carson Slough Area of Critical Environmental Concern. The 4,340-acre area of critical environmental concern would include one critical habitat unit that has been designated for each of the two species and would be dedicated to conservation of special status plant populations, Amargosa River watershed values, ephemeral wetlands, mesquite bosques and riparian areas. The area of critical environmental concern would include 1,200 acres of critical habitat of the Amargosa niterwort, 340 acres of critical habitat of the Ash Meadows gumplant, and 2,800 acres along the Lower Carson Slough that would provide linkage between the two critical habitat units.

Management of the proposed Lower Carson Slough Area of Critical Environmental Concern would be governed by the following principles:

1. The Bureau proposes to manage the Lower Carson Slough Area of Critical Environmental Concern according to a management plan that would be designed to accomplish conservation objectives for special status plants and riparian, ephemeral wetland and mesquite bosque habitats.
2. The management strategy for managing the Lower Carson Slough Area of Critical Environmental Concern would be integrated with the strategy for managing the proposed Amargosa River Area of Critical Environmental Concern.
3. The management plan for the Lower Carson Slough Area of Critical Environmental Concern would be completed within 3 years and would include consultation, pursuant to section 7 of the Act, with the Service if the scope of actions so warrants. The management plan would:
 - A. Identify the location of listed species and develop appropriate measures to protect them;
 - B. Develop a monitoring program for and determine the habitat needs of the Amargosa niterwort and Ash Meadows gumplant;
 - C. Implement route designations;
 - D. Develop a strategy for conserving and monitoring ephemeral wetlands, mesquite bosques, and riparian areas in cooperation with adjacent private landowners and other federal, state, and local agencies;
 - E. Identify mechanisms to track progress in reaching population and recovery goals of the listed species;
 - F. Develop guidelines for road construction and other activities adjacent to listed plant populations;

- G. Administratively change the appropriate management level for wild horses and burros to 12 horses and 0 burros to reflect the current management strategy; and
- H. Delineate the Amargosa aquifer and develop a strategy in cooperation with other Federal, State, and local agencies to safeguard surface and groundwater flows.

As a result of the settlement agreement with the Center for Biological Diversity, the Bureau constructed, in the fall of 2001, a barbed wire fence on both sides of Stateline Road between the towns of Death Valley Junction, California and Pahrump, Nevada. The total length of the fence is approximately 3 miles; its western edge terminates approximately 2 miles east of Death Valley Junction. Each end of the fence possesses a section that angles away from the road at approximately 30 degrees. These fence sections are meant to create an appearance that the fence encloses a particular area and prevents entry by vehicles.

STATUS OF THE SPECIES

Lane Mountain Milk-vetch

The Lane Mountain milk-vetch was listed as endangered on October 6, 1998 (63 *Federal Register* 53596); critical habitat has not been designated. A recovery plan is currently being prepared.

The Lane Mountain milk-vetch is a perennial plant species in the pea family. It is a slender, diffuse plant, 12 to 27.5 inches tall, with straggling, freely branched stems that arise from a buried root-crown (Barneby 1964). Herbage is light-gray or greenish, strigulose with short, fine, straight hairs. The flowers, 5 to 15 per stalk, are cream to purple, or lighter with veins of a deeper color. Fruits are pencil-shaped, linear, smooth, and pendant, 0.6 to 1 inch long.

Plants of this species typically grow under and entangled within the canopy of low shrubs. Few plants have been observed in the open. Most of the host species are intricately branched low shrubs, but a few of the observed hosts were bunch grasses (*Stipa* sp.) and subshrubs such as Mojave aster (*Machaeranthera tortifolia*) and wishbone bush (*Mirabilis bigelovii*). Host plants were usually living, although a few hosts have been dead shrubs.

The Lane Mountain milk-vetch appeared to have a very short growing period in a very dry years (Bagley 1989). The perennial rootstock may allow the Lane Mountain milk-vetch to survive occasional dry years, while longer periods of drought might be endured by remaining dormant (Beatley in Bagley 1989).

The Lane Mountain milk-vetch is known only from San Bernardino County, California, in a small area in the west Mojave Desert to the west and northeast of Lane Mountain. Approximately one-sixteenth of the area occupied by the known occurrences of this species is located within the boundaries of the U.S. Army's National Training Center and Fort Irwin. By legislation passed in late 2001, jurisdiction over approximately 110,000 acres adjacent to the

western boundary of Fort Irwin were transferred to the Army. This area, which is no longer managed by the Bureau, supports approximately one-half of the area occupied by the known occurrences of this species. The remainder of the area occupied by known occurrences, which appears to be somewhat less than one-half of the known occupied habitat, is on Bureau and private lands to the west and southwest of Fort Irwin. (This quantification should be considered preliminary; the Army has not provided any detailed information on the results of its survey work on this species.) The entire known range of Lane Mountain milk-vetch occurs within an area of land that is approximately 16 miles in diameter. Based on the available historic and recent information, the Lane Mountain milk-vetch does not appear to have been more widespread than is currently known; no extirpations of population have been documented.

The Lane Mountain milk-vetch is known to occur at elevations of approximately 3,150 to 3,850 feet. It is most frequently found within Mojave creosote bush scrub (Holland 1988, Cheatham and Haller 1975) or creosote bush series (Sawyer and Keeler-Wolf 1995). The scrub community at Lane Mountain milk-vetch sites is typically a diverse mix of shrub species. Brandt *et al.* (1997) characterized milk-vetch sites as areas with Nevada Mormon tea (*Ephedra nevadensis*) and Cooper goldenbush (*Ericameria cooperi*) dominant and where the shrub density is greater than in surrounding areas.

The Lane Mountain milk-vetch occurs on rocky, very low ridges, only a foot or two higher than the main bajada slope, and rocky low hills, 10 to 20 feet high, where bedrock is exposed or probably near the surface (Lee and Ro Consulting Engineers 1986). It appears to be largely confined to granitic substrates.

The Lane Mountain milk-vetch typically blooms in April and May. Nothing further is known of the reproductive biology of this species.

In the spring and summer of 2001, the U.S. Army conducted extensive surveys for the Lane Mountain milk-vetch. During these surveys, approximately 6,000 individuals of the Lane Mountain milk-vetch were detected. Based on calculations that considered the distribution and abundance of plants within the areas that were surveyed and the amount of other potentially suitable habitat, the Army has predicted the total number of individuals to be approximately 19,000 (Wertenberger, pers. comm.). In general, the plants were found in and around areas where they had previously been known to exist. The Army has yet to release a final report on the survey efforts; therefore, this information should be considered as preliminary.

The species was listed because of threats related to habitat destruction from dry wash gold mining, other mining activities (materials lease mining), rock and mineral collecting, off-highway vehicle activity, and potentially from increasing fire frequency and any associated fire suppression activities. The expansion of Fort Irwin was also identified as a potential threat. Sheep grazing has not occurred within the habitat of this species since 1989 as a result of a consultation between the Service and Bureau regarding the desert tortoise.

At the time the proposed rule was being prepared, the Army conducted some vehicular use within its habitat at the National Training Center. Since that time, the Army has installed protective fencing between at least one site supporting the Lane Mountain milk-vetch and a vehicle route; we are unaware how individuals of this species in other locations at Fort Irwin may be affected by the Army's activities.

Ash Meadows Gumplant

The Ash Meadows gumplant was federally listed as a threatened species with designated critical habitat on May 20, 1985 (50 *Federal Register* 20777). The Service (1990) has completed a multi-species recovery plan that includes the Ash Meadows gumplant.

The Ash Meadows gumplant is an erect, biennial or more often perennial, herb of the sunflower (Asteraceae) family. Plants are 2.3 to 3.3 feet in height and the leaves and stems are glabrous-resinous (sticky). It has one to three smooth, leafy, tan-reddish stems arising from a woody root-stock. The dark green leaves are leathery, generally oblanceolate-oblong, acute, and entire-serrate toward the top. The inflorescence is openly branched with several heads on the terminal branchlets. The yellow flowers consist of heads measuring approximately 0.3 inch, with approximately 15 disk flowers and 13 ray flowers. In bud, the disk flowers are covered with a white gum-like substance. The phyllaries are resinous dotted and the fruit is an achene, approximately 0.1 inch long, with two stout awns.

Flowering occurs from June through October (Beatley 1976). Seed dispersal could occur by means of wind or water and possibly by mammals or birds. The pollinators for this species are unknown at this time (Cochrane 1981).

The Ash Meadows gumplant is known only from moist, meadow habitats along the Carson Slough drainage in Nevada and California, from Ash Meadows National Wildlife Refuge in Nevada downstream to Franklin Playa, California. Exhaustive surveys to determine the precise distribution of the Ash Meadows gumplant have not been completed. Known occurrences in California are predominantly located on Bureau lands; it may also occur on land that is owned by the State of California.

The Ash Meadows gumplant primarily occurs in saltgrass meadows along streams and surrounding pools in the vicinity of ash-screwbean-mesquite woodlands and desert shadscale scrub vegetation. It occasionally occurs on open alkali clay soils in drier shadscale habitats or in clay barrens where groundwater is at or near the surface and where other Ash Meadow endemics are found. It is quite robust in marshy areas along some dirt roads where runoff accumulates and saturates soils throughout a longer portion of the year. The Carson Slough occurrences grow in full sunlight and in the lowest topographic areas associated with water (Cochrane 1981).

The dominant plant species that co-occurs with the Ash Meadows gumplant is saltgrass (*Distichlis spicata* var. *stricta*) and the common associates within this saltgrass meadow type

community include spring-loving centaury (*Centaurium namophilum*), seep willow (*Baccharis emoryi*), yerba mansa (*Anemopsis californica*), western niterwort (*Nitrophila occidentalis*), loosestrife (*Lythrum californicum*) and iva (*Iva acerosa*). In the wooded areas, and on the drier sites, the common associates include velvet ash (*Fraxinus velutina* var. *coriacea*), screwbean mesquite (*Prosopis pubescens*), shadscale (*Atriplex confertifolia*), alkali sacaton (*Sporobolus airoides*), alkali goldenbush (*Isocoma acradenia*), rabbitbush (*Chrysothamnus albidus*), seepweed (*Suaeda* sp.), and other saltbush (*Atriplex* sp.) species.

This species also appears to colonize recently disturbed areas, almost appearing weed-like, along roadsides adjacent to meadows. The quick colonization may be due to the removal of the usual associated plant competitors (Cochrane 1981, Reveal and Beatley 1971, Mozingo and Williams 1980).

Critical habitat includes 12 discontinuous areas that collectively include 1,968 acres (Service 1990). Primary constituent elements were not identified at the time critical habitat has designated but the final rule suggested that the critical habitat delineation was based on the presence of saltgrass meadows along streams and pools or drier areas with alkali clay soils. The designated critical habitat in California, which covers approximately 340 acres, is limited to land that is managed by the Bureau.

Current threats to the Ash Meadows gumplant include reduced or re-channeled spring outflow caused by adjacent land development or water diversion and the disturbance and loss of the limited habitat available to this species from camping, staging areas, road maintenance and mining activities. Although the Chicago Valley Herd Management Area overlaps the California portion of the critical habitat of this species, the horses concentrate their use in xeric areas that are not occupied by the Ash Meadows gumplant; this species inhabits more mesic areas approximately five miles from where the horses usually gather. Consequently, for this reason and because of the low number of horses, impacts from horses are most likely negligible. The potential exists for the establishment and spread of salt cedar, which displaces native plants, alters the composition and structure of native plant communities, and generally eliminates surface water and moist soil regimes in wetland and meadow habitats. If this exotic plant were to become well established in the vicinity of Ash Meadows gumplant populations, the surface water necessary for this species to survive and associated habitat could be affected. The one square mile of State land within California that may be occupied by this species has not historically been subject to development or disturbance.

Amargosa Niterwort

The Amargosa niterwort was listed as endangered, with critical habitat, on June 19, 1985 (50 *Federal Register* 20777). The Service (1990) has completed a multi-species recovery plan that includes this species. The Amargosa niterwort is also listed by the State of California as endangered.

The Amargosa niterwort is a small, erect perennial with an extensive, heavy, underground rootstock. The stems are glabrous, pinkish, compactly branched, and up to approximately four inches tall. The leaves clasp the stem in opposite pairs, are rounded-ovate, somewhat succulent, concave in the upper portion, up to 0.1 inch long, and pointed at the ends. Perfect flowers are mostly single in the axils of the upper leaves and are composed of sepals only. The calyx is less than 0.1 inch long and rose-colored when fresh. Each flower has one small, shiny black seed. Seed viability, longevity, dormancy and germination requirements are unknown (Reveal 1978).

Plants can over-winter as underground rootstocks, with new plants starting to be formed in March. Flowering occurs from late April to October.

The known distribution of the Amargosa niterwort is confined to the Amargosa River drainage along the California-Nevada border. The majority of plants within Nevada are contained within the boundary of the Ash Meadows National Wildlife Refuge. A limited number of plants in Nevada also occur on Bureau lands immediately west of the boundary of the national wildlife refuge. The remaining distribution of the species occurs within the California Desert Conservation Area boundary. Surveys for the species have been conducted along the lower reaches of the Amargosa River within the boundary of Death Valley National Park, but no plants were found (Service 1996). Exhaustive surveys to determine the precise distribution of the Amargosa niterwort have not been completed. Known occurrences in California are predominantly located on Bureau lands; it may also occur on land owned by the State of California.

The Amargosa niterwort occurs on open, highly alkaline mudflats and low sand around alkali sink vegetation lacking appreciable standing water and supporting very little vegetation, with extensive salt crust development. This habitat is composed of highly saline and alkaline soils that are hydrated to varying degrees by seepage from freshwater springs that lie many miles to the north and east in Ash Meadows, Nevada (Beatley 1977). One of these alkaline flats is located at Franklin Playa, California, near where the Lower Carson Slough meets the Amargosa River. The Amargosa niterwort is found at elevations of 1,970 to 2,460 feet. Associated plants include shadscale, Parry's saltbush (*Atriplex parryi*), iva, Tecopa bird's-beak (*Cordylanthus tecopensis*), short-pedicelled cleomella (*Cleomella brevipes*), pickleweed (*Allenrolfia occidentalis*), and saltgrass.

The critical habitat, which includes 1,200 acres, occurs within one contiguous block. Primary constituent elements were not identified at the time critical habitat was designated but the final rule suggested that the critical habitat delineation was based on the presence of salt-encrusted alkaline flats. The designated critical habitat in California is limited to land that is managed by the Bureau.

The Amargosa niterwort was listed because the plant has a small geographic distribution that experienced off-road vehicle activity, nearby mining activity, and effects associated with groundwater depletion. The restricted range of this species makes it susceptible to natural

catastrophic events such as flooding and drought, as well as the genetic and demographic consequences of small populations. Potential threats to the species include local groundwater depletion; streambed alteration; road maintenance; mining, including exploratory drilling and claim marker placement; and cross country vehicle travel. The potential introduction and spread of salt cedar poses an additional threat to this species. Salt cedar has not been observed near Franklin Playa to date, although it occurs downstream on the Amargosa River in the vicinity of Grimshaw Basin. Although the Chicago Valley Herd Management Area overlaps the critical habitat of this species, the horses concentrate their use in xeric areas that are not occupied by the Amargosa niterwort; this species inhabits more mesic areas approximately three miles from where the horses usually gather. Consequently, for this reason and because of the low number of horses, impacts from horses are most likely negligible. The one square mile of State land within California that may be occupied by this species has not historically been subject to development or disturbance.

ENVIRONMENTAL BASELINE

Lane Mountain Milk-vetch

The Lane Mountain milk-vetch is currently known to occur in two general areas separated by Lane Mountain. A small portion of the more northerly occurrence remains on public lands on the northeastern flank of Lane Mountain; this occurrence continues to the northeast of the Paradise Range from Paradise Valley to the area of the Montana Mine on lands now managed by the Army. The second area is located west of Lane Mountain in an area known as Coolgardie Mesa; it extends south and west to the eastern flanks of the Mud Hills.

This baseline does not consider those individuals of the Lane Mountain milk-vetch occurring on lands that were recently transferred by legislation to the Army. Most of the habitat of this species that remains on public lands is managed as Class M; a small portion of known occupied habitat near the northeastern-most corner of the Mud Hills may be within an area managed as Class L. Some plants within the California Desert Conservation Area are also likely to occur on private lands. The acreage of known occupied habitat has not been quantified.

Ash Meadows Gumplant

Within the California Desert Conservation Area, the Ash Meadows gumplant is only known to occur within the 340-acre area of critical habitat located along the border between California and Nevada. This area is located 2.5 to 3.5 miles north of Stateline Road that connects the towns of Death Valley Junction, California and Pahrump, Nevada. All of the area occupied by the species in California is Class L land. Encompassing Lower Carson Slough and Franklin Playa, these lands have been designated as the Brackish Water Marsh Unusual Plant Assemblage (Bureau 1999).

Numerous markers representing mining claims are located in the Death Valley Junction area where the Ash Meadows gumplant occur. In 1989 or 1990, vehicle use in an area with mining claim markers resulted in numerous off-road vehicle tracks one mile south of the Ash Meadows gumplant occurrences (Threloff, pers. comm.).

In 1995, approximately 15,000 acre-feet of groundwater were pumped in the Amargosa Desert, which is the area that supports the Ash Meadows gumplant. More than 40,000 acre-feet per year of permitted and certificated water rights currently exist within the basin (Pal Consultants, Inc. 1997). The permitted and certificated water rights in the Amargosa Desert exceed the perennial yield of the local aquifer by a magnitude of 200 to 300 percent (Essington, pers. comm., 2000). People are moving to the Amargosa Basin in increasing numbers; most, if not all, of the water needed for human use in this area is dependant on groundwater. The groundwater pumping that is already occurring is likely lowering the water table in various areas of the basin. These water withdrawals will degrade habitat of the Ash Meadows gumplant; the potential exists that such degradation has already begun.

Amargosa Niterwort

The distribution of the Amargosa niterwort is limited to lands within the Northern and Eastern Mojave Desert bioregional planning area. The geographic distribution of the species in California consists of two disjunct populations. The majority of plants are present in a north-south trending polygon located two to three miles east of the town of Death Valley Junction. This area was designated as the Brackish Water Marsh Unusual Plant Assemblage by the Bureau in 1980 and as critical habitat by the Service. The critical habitat is bisected by Stateline Road. No other roads in this area are currently available to vehicle travel; pedestrian use by the public in the area where the plants occurs is very infrequent. The known range of the species was recently extended approximately one mile further south of its previously known location (Knight 1990).

The second occurrence of the Amargosa niterwort is in the Tecopa Hot Springs area, in close proximity to or on lands managed by the Bureau. This area has been developed through one or more Bureau-authorized leases that have been issued to the County of Inyo. The leased public lands include a 2-unit bathhouse facility, a 251-unit commercial campsite, community center, entrance roads, parking lots, four public restrooms, numerous out buildings and electrical hookups, at least one active sewage lagoon, and water piping between the various facilities (Bureau 2001b). These facilities generally serve the recreational pursuits of the local public and retirees that tend to stay in the area during the winter months. The Amargosa niterwort was documented as occurring within 300 feet of the northern edge of the active sewage lagoon in 1986 (California Natural Diversity Database 2000). The Bureau-leased lands are within an area designated as Class L.

In 1986, 1991, and 1994, 500 to 1,500 individuals of the Amargosa niterwort were found in the Tecopa area in 2 areas a few hundred feet north and northeast of the Tecopa Hot Springs

Community Center (California Natural Diversity Database 2000). The ownership of the lands where these occurrences are located has not been determined, but the plants that are located 0.2 mile northwest of the community center likely occur on Bureau-managed lands. The Amargosa niterwort was not found during recent surveys in this location (Threloff, pers. comm.). The historical distribution of the Amargosa niterwort in the Tecopa Hot Springs area was probably much larger than what currently exists because substantial portions of the local landscape have been altered by the development and use of the bath houses.

Numerous markers representing mining claims are located in the Death Valley Junction area where the Amargosa niterwort occurs. In 1989 or 1990, unauthorized vehicle use where mining claim markers are present resulted in numerous off-road vehicle tracks in areas where the Amargosa niterwort is present (Threloff, pers. comm.).

Stateline Road traverses critical habitat of the Amargosa niterwort and lands managed by the Bureau. The road is periodically subject to maintenance activities that are approved by the Bureau and conducted by the County of Inyo. In the course of completing these road improvement projects during the past 10 years, road graders and front-end loaders have strayed from the pavement and onto suitable habitat of the Amargosa niterwort.

Lands supporting the species near Franklin Playa have been damaged previously by unauthorized mineral exploration and installation of claim markers (Knight 1990). A herd of fewer than 10 wild horses (Chicago Valley Herd Management Area) are known to inhabit these same public lands because an artesian water source is located nearby. This wild horse herd is managed under objectives outlined in the Chicago Valley Herd Management Area Plan. No trampling impacts to the species have been noted to date, though this possibility exists.

The critical habitat of the Amargosa niterwort includes 1,200 acres. Approximately 360 acres are Class M lands; the remainder occurs on Class L lands. This occurrence also extends to the south of the critical habitat boundary within Class M lands; the acreage of the remainder of this occurrence has not been determined. The entire critical habitat unit is not occupied and is not suitable habitat for this species. The Amargosa niterwort at Tecopa Hot Springs is also located on Class L lands; the size of this occurrence has not been determined.

The groundwater pumping described in the previous section of this biological opinion is also likely to affect the Amargosa niterwort. We do not know, at this time, the historic extent of the Amargosa niterwort occurrences in this area and how groundwater withdrawals may have affected them.

EFFECTS OF THE ACTION

We conducted our analysis in a stepwise fashion. We begin our analysis with a general description of how various anthropogenic activities could affect the Lane Mountain milk-vetch, Amargosa niterwort, and Ash Meadows gumplant and their habitats.

We then review how the overall management direction provided by the California Desert Conservation Area Plan, as amended and modified, could affect the Lane Mountain milk-vetch, Amargosa niterwort, and Ash Meadows gumplant. The California Desert Conservation Area Plan provides program guidance to the Bureau for its activities within the California desert; the multiple-use classes and elements of the California Desert Conservation Area Plan direct how the Bureau balances resource conservation and use. The California Desert Conservation Area Plan also provides the fundamental authorization for many ongoing activities, such as casual recreational use, that do not require site-specific analysis by the Bureau. We did not analyze the effects of any site-specific future actions. As the California Desert Conservation Area Plan notes, site-specific actions may be allowed after they are analyzed pursuant to the National Environmental Policy Act; the Bureau must also comply with section 7(a)(2) of the Act when it is considering these future actions.

Finally, the Bureau's proposed action includes certain modifications to the California Desert Conservation Area Plan, as amended. These modifications are the consultation on sheep grazing for the desert tortoise between the Service and Bureau, the Bureau's proposed interim measures, and the actions proposed in the draft Northern and Eastern Mojave bioregional plan. In some cases, these modifications have altered the manner in which the California Desert Conservation Area Plan may have affected the listed species being considered in this consultation. Where these modifications have eliminated the likelihood of adverse effects, we have noted this situation in the Description of the Proposed Action section of this biological opinion and will not repeat the analysis herein. An example of this situation has occurred with the livestock grazing element with regard to the Lane Mountain milk-vetch; because a previous consultation has caused the cessation of sheep grazing within habitat of the Lane Mountain milk-vetch, we will not reconsider the potential effects of that activity on the species.

Our consideration of the overall effects of the Bureau's program guidance on listed species includes, at least to some degree, an evaluation of how likely an action is to occur. For example, the pumping of groundwater from an area that does not contain groundwater is not likely to occur; therefore, even though the program guidance and multiple-use class may allow this activity, it would not occur.

Additionally, the Bureau would consult on each future action that it proposes to approve, undertake, or fund, pursuant to the requirements of section 7(a)(2) of the Act. The potential exists that, in this biological opinion, we may find that the Bureau's guidance is not likely to jeopardize the continued existence of a species, but that a specific action may be proposed in the future that could result in a finding of jeopardy. Such a circumstance could occur if advances in technology or changes in economics alter the feasibility of a specific project. For example, deep groundwater may be economical to pump only for a project proponent with large amounts of capital expecting a large financial return. If our subsequent biological opinion on the specific action concluded in jeopardy, the Bureau could determine that the action, as proposed, would not proceed; for mining actions, the Bureau could prohibit the proposed action on the basis that it would result in undue and unnecessary degradation (Foreman, pers. comm.).

Effects of Anthropogenic Activities on Listed Plant Species

In this section, we attempted to briefly summarize how various anthropogenic activities could affect the Lane Mountain milk-vetch, Amargosa niterwort, and Ash Meadows gumplant. Note that this analysis is general in nature and is not intended to apply to any specific action that is or may be authorized by the Bureau.

The use and maintenance of roads can affect listed plant species in several ways. Plants and habitat that are on or immediately adjacent to roads can be lost or disturbed when vehicles stray from the road during use or maintenance activities. Dust and mud generated by motorized vehicles, whether they are maintaining or using the road, can cover plants and interfere with physiological functions ultimately affecting plant vigor, reproduction, and survival; this impact would be greatest near the road and in areas traversed by numerous roads. Invasive, nonnative plants can be transported into areas along roads. Modifying drainage patterns, such as through the use of culverts where roads cross drainages, may cause unnatural plant distributions.

We are unaware of any trails that traverse habitat of the Lane Mountain milk-vetch, Amargosa niterwort, or Ash Meadows gumplant. However, the terrain in which these species live is generally accessible on foot. The primary effect of walking through habitat of these species would be trampling of plants. Individuals of the Lane Mountain milk-vetch are less likely to be trampled because of their occurrence within shrubs. Foot travel has the potential to spread seeds of non-native species. Given that people on foot cannot travel as far or as fast as those in vehicles, impacts from walking likely pose a low degree of threat to these species.

Ground-disturbing activities within habitat of the Lane Mountain milk-vetch, Amargosa niterwort, and Ash Meadows gumplant could occur as a result of the implementation of the guidelines and elements of the California Desert Conservation Area Plan. Impacts to the listed plants that would likely result from disturbance of the ground include direct removal of plants and seeds, trampling of plants, destruction and disturbance of habitat, changes in hydrology, burial of plants and seeds under overburden and spoils, and interference with pollination and seed dispersal. Ground-disturbing activities can accelerate the spread of invasive non-native plant species by destruction of soil crusts and cryptogams; these non-native species, in turn, can compete with the listed species for nutrients, germination sites, and scarce moisture, and alter the ability of the area to carry wild fires. The species being considered in this biological opinion are not adapted to fire; consequently, fires could result in a substantial loss of individual plants and severely alter the plant community structure within their habitats.

Fragmentation of habitat could result in a decline in the health of the occurrences of the species under consideration in this biological opinion. If the occurrences or portions of the occurrences are separated from one another by habitat that pollinators cannot cross, pollinators may not have adequate access to ensure propagation. At this time, we do not have information on the pollination ecology of these species. Fragmented habitat is also more susceptible to indirect effects, such as dust from roads and other disturbed areas and invasion by non-native species.

Groundwater pumping and water diversion within the region pose the greatest known threat to the persistence of the Ash Meadows gumplant and Amargosa niterwort. Habitat of the Ash Meadows gumplant typically consists of saltgrass meadows along streams and pools and may infrequently include drier areas with alkali clay soils; the Amargosa niterwort is associated with salt encrusted alkali flats that tend to have persistent soil moisture. Extraction of water from the aquifer that supports these species may reduce the overall extent of habitat, dessicate plants, reduce the likelihood of seed germination, reduce the number and distribution of plants in the local area, and change the hydrological regimes that are an integral component of their critical habitats. Alterations in the hydrological regimes that promote the presence of the Amargosa niterwort and the Ash Meadows gumplant could improve environmental conditions favored by other plant species, thereby resulting in pervasive changes in the overall structure and composition of the plant community that are less conducive to the presence of the listed species.

The use of herbicides could result in direct mortality of individuals of the Lane Mountain milk-vetch, Amargosa niterwort, and Ash Meadows gumplant. Other pesticides may reduce or eliminate the populations of pollinators. Both the active ingredient and surfactants may be toxic to individuals of the listed species and pollinators.

The presence of the culverted road that bisects the critical habitat of the Amargosa niterwort alters the hydrology of the Carson Slough drainage and probably results in an unnatural plant distribution that is caused by altered surface water flows.

Effects of Multiple-Use Classes, Guidelines, and Elements

In the following sections, we combined our evaluations of the guidelines for the relevant multiple-use classes and of the elements of the California Desert Conservation Area Plan. Where appropriate, we also evaluated the potential impacts of ongoing uses; note that this biological opinion does not analyze the potential effects of any future specific actions requiring approval, authorization, or implementation by the Bureau.

Water Quality

The Bureau's guidelines for water quality on Class L lands provide for the protection and enhancement of surface and groundwater resources except for instances of short-term degradation caused by water development projects. Within Class M lands, the guidelines state that management activities will be implemented to minimize degradation of water resources. We do not have information that would allow predictions of how the Ash Meadows gumplant and Amargosa niterwort would be affected by variations in water quality, but increases in these compounds may create conditions that promote the presence of invasive plant species and thereby act to the detriment of these species.

In the Tecopa Hot Springs area, the Bureau has authorized or facilitated the operation of a sewage lagoon that receives untreated water from four public restrooms. The Lahonton Regional

Water Quality Control Board has informed the Bureau that the sewage lagoon is leaking and that repairs would probably be necessary in the near future. Information on the quality and quantity of the effluent that may be escaping the lagoon is not available, but untreated sewage is likely to have elevated levels of bacteria and nitrogenous waste products. As noted in the previous paragraph, we do not have information on the effects of water quality on the Amargosa niterwort.

Cultural and Paleontological Resources and Native American Values

We have combined these guidelines and elements because the Bureau's program guidance is generally similar for cultural and paleontological resources and Native American values. It calls for the preservation and protection of archaeological and paleontological values and sites of value to Native Americans that occur in both Class L and M lands. The Bureau may authorize some activities associated with these resources and values that could occur with habitat of the three species being considered in this biological opinion. However, these activities would generally be fairly restricted in scale, such as the stabilization or protection of a site or research that may result in ground disturbance, use of vehicles on existing routes of travel, and walking through habitat of the listed species.

The Bureau is unaware of any cultural and paleontological resources or Native American values within the habitat of the Lane Mountain milk-vetch, Amargosa niterwort, or Ash Meadows gumplant. Because of the existing program guidelines and elements and the nature of activities that could occur under them, the Lane Mountain milk-vetch, Amargosa niterwort, and Ash Meadows gumplant and the critical habitat of the latter two species are not likely to be substantially adversely affected by activities related to the Bureau's management of cultural and paleontological resources or Native American values.

Electrical Generation Facilities

The guidelines and elements of the California Desert Conservation Area Plan allow the establishment of nuclear, fossil fuel, wind, solar, and geothermal facilities on Class M lands and wind, solar, and geothermal facilities on Class L lands. The California Desert Conservation Area Plan notes that a typical powerplant occupies 2,500 to 3,000 acres (Bureau 1999). Solar power plants, such as the existing facilities at Kramer Junction and Harper Dry Lake, cover large areas; the direct ground disturbance associated with wind farms may be substantially less, but the extensive system of roads to connect turbines and other facilities would also result in a great degree of habitat loss and fragmentation over large areas. Solar, fossil fuel, and nuclear facilities require substantial amounts of water to operate. By comparison, the occupied habitat of the Amargosa niterwort within the critical habitat unit is approximately 65 acres and the entire critical habitat unit of the Ash Meadows gumplant in California covers approximately 340 acres. Although the area inhabited by the Lane Mountain milk-vetch is somewhat more extensive, it also is very restricted in its distribution.

The Lane Mountain milk-vetch, Amargosa niterwort, and Ash Meadows gumplant occupy small geographic areas. Because of the relatively restricted areas occupied by these species, the placement of an energy-generating facility within occurrences of these three species could result in the extirpation of that occurrence. The Ash Meadows gumplant and Amargosa niterwort would also likely be affected by the extraction of water to service the plant; for this reason, power plants that have the potential to affect the local hydrology adjacent to habitat occupied by these species could cause substantial degradation of the occurrence by reducing or degrading an essential physical feature needed for their survival. Consequently, the authorization and development of a power plant of any type within or adjacent to habitat occupied by any of these three species could appreciably degrade the ability of these species to survive and recover. For the Ash Meadows gumplant and Amargosa niterwort, the ability of their critical habitat to support their survival and recovery could also be compromised.

The program guidance for energy-generating facilities within the California Desert Conservation Area Plan does not provide substantial assurance that the Lane Mountain milk-vetch, Amargosa niterwort, and Ash Meadows gumplant will be adequately conserved. However, other factors must be considered in conducting an analysis of whether program guidance could result in an irreversible decline in the status of a species. In this particular case, the additional factors to consider include the likelihood that such energy-generating facilities would be developed in or near habitat of these species, changes in technology and need, and the creation of the Lower Carson Slough Area of Critical Environmental Concern, as proposed by the Bureau in the draft environmental impact statement for the Northern and Eastern Mojave bioregion.

At present, the likelihood that an energy-generating facility would be developed within or near habitat of any of these three species appears to be low for several reasons. First, the Amargosa niterwort and Ash Meadows gumplant and portions of the range of the Lane Mountain milk-vetch are located in remote locations, far from any large transmission line that would be needed to convey power from the facility to a market. The remaining portion of the range of the Lane Mountain milk-vetch on public lands is reasonably close to a major transmission line; although this area does not appear to be suitable for a wind energy development, other energy-generating facilities may be feasible.

Changes in technology and need could render more attractive sites that are currently unsuitable for a facility. The economics of building a transmission line from a remote site may be feasible if energy prices are high; additionally, other facilities that require energy could be built closer to new generating sites so power would not need to be transmitted over long distances. Advances in energy-generating technologies, such as turbines that produce power with less wind, may increase the likelihood that areas occupied by these species could be viewed favorably for energy development in the future.

Finally, the Bureau intends to designate the Lower Carson Slough Area of Critical Environmental Concern through the Northern and Eastern Mojave bioregional plan. As part of this proposal, the Bureau would develop a management plan for the area of critical environmental concern and

begin implementation within 3 years. Among other goals, the management plan would be developed to protect the Amargosa niterwort and Ash Meadows gumplant. We also note the California Desert Conservation Area Plan states that the designation of areas of critical environmental concern includes a process for identifying management actions that are necessary to protect sensitive resource values. The management direction for areas of critical environmental concern can override the multiple-use class guidelines; therefore, the Bureau has the ability to craft a management plan for the Lower Carson Slough Area of Critical Environmental Concern that could alleviate or eliminate the potential for energy-generating facilities to affect the survival and recovery of the Amargosa niterwort and Ash Meadows gumplant. Because of the less remote location of a portion of its range and the lack of a proposal to designate an area of critical environmental concern, the Lane Mountain milk-vetch remains at greater risk from the development of an energy-generating facility.

To summarize the potential effects of this program guidance on these species, the remoteness of the Amargosa niterwort and Ash Meadows gumplant, the lack of any current energy-generating facilities in or near their habitat, and the Bureau's proposal to designate an area of critical environmental concern to protect these species provide evidence that the management direction regarding electrical generation facilities is not likely to substantially impair the survival and recovery of these species or reduce the ability of their critical habitat to support them. Because of the proximity of the remaining portion of the range of the Lane Mountain milk-vetch on public lands to a major transmission line and the lack of a proposal for a protective area of critical environmental concern, the program guidance with regard to electrical generation facilities may pose a substantial risk to this species.

Distribution Facilities for Electricity

The maintenance and upgrading or improvement of existing facilities in accordance with existing right-of-way grants within Class M lands could result in the disturbance or loss of a limited amount of habitat and individuals in the Lane Mountain milk-vetch occurrence west of Lane Mountain. A distribution line parallels Copper City Road, a primary route of travel, which crosses through this occurrence. The potential also exists that vehicles associated with maintaining, upgrading, or improving the distribution line could accelerate the spread of the non-native Sahara mustard (*Brassica tournefortii*) by transporting seeds from the southern portion of Copper City Road, where this species already exists, and by disturbing soils.

The guidelines allow for the development of new distribution systems within Class L and M lands. The guidelines direct that new distribution facilities will be placed within existing rights-of-way, where they are reasonably available; within Class L lands, facilities would be placed underground unless this alternative was more damaging to the environment. The development of new distribution facilities, either within or outside of existing rights-of-way, within Class L and M lands could result in the disturbance or loss of a substantial amount of habitat and individuals of the Lane Mountain milk-vetch, Amargosa niterwort, and Ash Meadows gumplant. These impacts would likely be particularly detrimental if they occurred outside of existing rights-of-

way; in such cases, the roads used to provide access to the facilities during construction and maintenance would fragment habitat and allow additional potential for unauthorized use of areas inhabited by these species. As noted in the previous paragraph, the threat of invasive non-native species is likely to increase with the disturbance associated with the development of new distribution facilities.

As noted in the discussion of energy-generating facilities, we must also consider the likelihood that such facilities would be constructed. Distribution facilities are currently absent from habitat of the Amargosa niterwort and Ash Meadows gumplant and absent from most of the area occupied by the Lane Mountain milk-vetch. The existing situation seems to indicate that the likelihood of such facilities being developed in the near future may be limited; however, it does not preclude this possibility.

Communication Sites

The guidelines allow for the maintenance and use, in accordance with right-of-way grants and applicable regulations, of existing facilities in both Class L and M lands. Lane Mountain, which is located to the east of the westernmost occurrence of the Lane Mountain milk-vetch, supports communications sites. The access road to these sites traverses habitat for this species. Although the communication facilities are located outside of habitat, maintenance and use of the road to the sites could result in loss of individuals and habitat of the Lane Mountain milk-vetch; given that the access road is well-established and has been used for numerous years, the direct loss of individuals is unlikely; dusting of plants located along the access route and the spread of non-native species may be the more important threats. Overall, the effect of the maintenance of the Lane Mountain communication sites on the Lane Mountain milk-vetch is likely to be minor.

The guidelines allow the development of new sites within Class L and M lands. The potential impacts of new communication sites would likely be similar to those described for new distribution lines. In the case of new communication sites, the impacts would likely be less linear, except in cases where a new access road was required.

The proliferation of new communication sites over the past several years would seem to indicate that the potential activity allowed by this guideline could result in substantial degradation and loss of habitat and individuals of the Lane Mountain milk-vetch, Amargosa niterwort, and Ash Meadows gumplant. The locations of these species, which is generally away from major routes of travel, would seem to place them outside of areas with high potential for communication sites. However, as noted previously in this biological opinion, unforeseen changes in technology and need could alter the present situation.

Fire Management

The Bureau's guidance states that measures to suppress fires will be taken in accordance with specific fire management plans subject to such conditions as the authorized officer deems

necessary. Fire management plans provide a framework that describes the use of motorized vehicles, aircraft, and fire retardant chemicals that could be used to combat fires.

The use of motorized vehicles within habitat of the Lane Mountain milk-vetch, Amargosa niterwort, and Ash Meadows gumplant would likely result in the crushing of individual plants, disturbance of seed banks that were not directly affected by fire, disturbance of soils that may later facilitate the colonization of invasive, non-native species, and injury or death of host plants of the Lane Mountain milk-vetch. Chemical fire retardants may also affect the three plant species by altering water quality or killing pollinators; however, specific studies on these potential effects have not been conducted.

The habitats that support the Lane Mountain milk-vetch, Ash Meadows gumplant, and Amargosa niterwort do not naturally support fire-based ecological processes. Therefore, although fire suppression could result in deleterious effects to these species and the critical habitat of the Amargosa niterwort and Ash Meadows gumplant, the suppression of wildfires in these areas is likely to provide a net benefit to these three species.

The plant community where the Ash Meadows gumplant and Amargosa niterwort occur is relatively sparse, the fuel characteristics in this habitat are not, at this time, conducive to the spread of fire. Similar conditions exist in the small Paradise Valley occurrence of the Lane Mountain milk-vetch on public lands. Therefore, the potential that a fire would occur and that the subsequent fire suppression would affect these species in these areas is low. However, the plant community where the Lane Mountain milk-vetch exists on Coolgardie Mesa may be dense enough to carry a fire. Given the proximity of private residences in this area, fire and subsequent suppression are more likely to occur within this habitat.

Vegetation Harvesting

On Class L and M lands, the Bureau can allow, by permit, the removal of native plants for commercial and non-commercial purposes and harvesting by mechanical means. These activities could affect the Lane Mountain milk-vetch, Ash Meadows gumplant, and Amargosa niterwort throughout their ranges. Potential impacts could include loss of habitat and individuals, particularly if the harvesting method involves the use of machinery; trampling of individual plants; fragmentation of habitat, if the harvesting is extensive and results in some conversion of habitat; and introduction of non-native species. If harvesting equipment is used in numerous locations, the potential for spreading non-native species could be substantial.

The severity of these effects would vary directly in relation to the scale and method of harvesting. The collection of a few samples of plants by hand while walking cross-country would have far less impact than the mechanical harvest of a large area. The only proposals, of which we are aware, to harvest plants within habitat of these species have involved the limited removal of portions of Lane Mountain milk-vetch plants for research; these activities were reviewed by both

the Service and Bureau under their respective authorities. At this time, the removal of vegetation does not appear to be a substantial threat to these species.

On Class M lands, mechanical control of vegetation may be allowed after consideration of possible impacts. These activities could affect the Lane Mountain milk-vetch and Amargosa niterwort where they occur on Class M lands. Potential impacts would be similar to those described with regard to the harvesting of plants by mechanical means.

After site-specific planning, the Bureau's program direction allows the eradication of noxious weeds on Class L lands by chemical means and spot application of pesticides on Class M lands. The use of herbicides to destroy weeds could result in the mortality of some individuals of the Lane Mountain milk-vetch, Amargosa niterwort, and Ash Meadows gumplant; the potential also exists that pesticide use on Class M lands could affect pollinator species. However, the control of weeds and other pests within habitat of listed species can provide important benefits; consequently, the overall program direction with regard to the use of pesticides on Class L and M lands is positive.

The Bureau's program direction allows enclosures within Class L and M lands. The potential exists that some individuals of the listed plants may be trampled during installation and maintenance of enclosures; some ground disturbance would also likely occur. However, the amount of trampling and ground disturbance and trampling would likely be fairly minor. Additionally, enclosures can be useful in protecting sensitive resources and can assist in conducting research which may provide information that is important for the recovery of the species.

The Bureau's program direction allows prescribed burning within Class L and M lands after development of a site-specific management plan. The species being considered in this biological opinion are not adapted to fire; fire is not a necessary ecological factor within the habitats in which they occur. Consequently, fires could have severe detrimental effects on the species and the community structure of their habitats. At this time, the use of prescribed burning within their habitat is not appropriate. Given that the Bureau is not likely to conduct prescribed burns within the habitat of these species, this program direction poses a low degree of threat.

After site-specific planning, the Bureau's program direction allows the eradication of noxious weeds on Class L lands by chemical means and spot application of pesticides on Class M lands. The use of herbicides to destroy weeds could result in the mortality of some individuals of the Lane Mountain milk-vetch, Amargosa niterwort, and Ash Meadows gumplant; the potential also exists that pesticide use on Class M lands could affect pollinator species. However, the control of weeds and other pests within habitat of listed species can provide important benefits; consequently, the overall program direction with regard to the use of pesticides on Class L and M lands is positive.

Mineral Exploration and Development

The Bureau's guidelines allow the exploration for and development of minerals on Class L and M lands. If these activities are conducted under the casual use category, as described in the California Desert Conservation Area Plan and the Description of the Proposed Action section of this biological opinion, miners or prospectors are not required to send the Bureau a notice or plan of operation that describes the mining-related actions prior to their implementation. However, the mining regulations state that "(o)perators may use motorized vehicles for casual use activities provided the use is consistent with the regulations governing such use..., off-road vehicle use designations contained in (Bureau)-land-use plans, and the terms of temporary closures ordered by (the Bureau)" (43 CFR 3809.5(1)); the California Desert Conservation Area Plan is the land-use plan which established that vehicles were confined to existing roads within Class L and M lands. Consequently, under the casual use provisions as defined for the California Desert Conservation Area, operators may not use vehicles off of established roads.

Individuals of the listed plant species could be crushed by the foot traffic of operators or equipment during exploration. Ground disturbance may also occur as a result of exploration. The ground-disturbing activity that may occur could result in the invasion of non-native plants. The guidelines require that disturbances created during casual use be restored. Restoration attempts often fail in the harsh climate of the desert. However, because the disturbance allowed under casual use is minimal, the required restoration may be attainable. A possible exception would be invasion by non-native plants, in part because this effect would likely not be seen for months after the casual use and restoration occurred.

Without off-road vehicle use, the amount and size of other equipment that may be employed during casual use is likely to be limited. For this reason, the amount of disturbance to individuals and habitats of the Lane Mountain milk-vetch, Amargosa niterwort, and Ash Meadows gumplant that may occur as a result of casual use under the mining guidance of the California Desert Conservation Area Plan is likely to be limited.

Certain areas on the western portion of Coolgardie Mesa are popular with mining clubs. The claims in this area are held by groups that allow members to mine within the claim. This activity has resulted in the development of extensive surface disturbance. We are not aware that this mining activity is occurring within habitat of the Lane Mountain milk-vetch; during visits by Service staff to these sites, the soils appeared deeper than those usually occupied by the Lane Mountain milk-vetch. However, given the discovery, by botanists working for the Army, of this species on the eastern slopes of the Mud Hills, some potential exists that mining club activity may affect this species.

A plan of operation, approved by the Bureau, is required before the initiation of exploration or mining activities that would have impacts greater than would be expected under the casual use or notice required categories. A plan of operation is also required for any bulk sampling in which the operator will remove 1,000 tons or more of presumed ore for testing. Activities associated

with plans of operation could result in the loss of individuals of the three listed plant species, loss of their habitat, ground disturbance, and the introduction or spread of non-native plant species. The Bureau will require restoration of lands disturbed during the mining activities conducted under plans of operations. However, restoration efforts may not be successful in re-establishing habitat for and individuals of the listed species because we do not fully understand the conditions that these species require and may not be able to restore those aspects that we do understand. For example, we know that the Lane Mountain milk-vetch grows only on thin soils; the technology may not exist to allow the restoration of the environmental conditions required by individuals of this species.

The mining laws allow individuals and corporations to apply for patents on public lands that have valid existing rights. Once these lands are removed from federal ownership, any individuals of the listed plant species which are located on the patented lands would receive little, if any, protection under the authorities of the Act. However, on October 1, 1994, Congress placed a moratorium on the acceptance of new mineral patent applications. The moratorium remains in effect with the passage of the Interior Appropriations Act HR 2217 (section 309), signed by the President on November 5, 2001. For this reason, patenting of public lands is not likely to adversely affect the listed species under consideration in this biological opinion at this time. However, should Congress not renew the moratorium at some point in the future, the potential exists that these species could be adversely affected. Additional consultation, pursuant to section 7(a)(2) of the Act, may not be required because the patenting of land is not a discretionary action on the part of the Bureau.

Extraction of geothermal, oil, and gas reserves may take place within Class L and M lands. The general area in the vicinity of critical habitats of the Amargosa niterwort and Ash Meadows gumplant has been designated as a potential geothermal resource area. In the event that suitable geothermal resources were present within or near habitat of the two species, the development of infrastructure for geothermal facilities could result in substantial ground disturbance, occupation, and loss of habitat of these species; development of geothermal resources could alter the regional hydrology to the extent that soil moisture regimes and other hydrological features would be negatively affected. Substantial alteration of the hydrological regime could result in an extensive decline in the status of these species. At the present time, the likelihood of geothermal development in the area of Death Valley Junction, where the Amargosa niterwort and Ash Meadows gumplant are located, is low because the hydro-thermal gradient is not great enough to warrant development of an energy facility; the potential for geothermal development to occur at Tecopa is greater (Essington, pers. comm.).

Any activity related to mineral exploration and development that resulted in the removal of water from water courses or the aquifer that maintained the mesic conditions in habitats that are occupied by the Amargosa niterwort and Ash Meadows gumplant would likely affect these species; the removal of a large amount of water from a drainage or aquifer would likely cause substantial deleterious effects. Changes in other hydrological conditions, such as water quality, may also degrade habitat and result in a reduction in the number of individuals of these species.

The proposed establishment of the Lower Carson Slough Area of Critical Environmental Concern does not, in itself, eliminate the potential for adverse effects related to mining activity or exploration. Until such time that a management plan for the area of critical environmental concern specifically modifies or eliminates mining activities near and within the area occupied by the Amargosa niterwort and Ash Meadows gumplant, the Bureau's guidance with regard to mining activities will continue to have the potential to adversely affect the species and their critical habitat. The lack of a proposal to develop and manage an area of critical environmental concern places the Lane Mountain milk-vetch at relatively greater risk from mineral exploration and development. Historically, large-scale mines have not been proposed within habitat of these species.

The Bureau may refuse to approve a plan of operations until the plan encompasses the Bureau's mitigation and compensation requirements. The mitigation required by the Bureau could reduce the level of the adverse effects of a mining operation; compensation could potentially offset a portion of the residual impacts.

The mining laws and regulations require avoidance of unnecessary and undue degradation and reclamation of disturbed areas. If the Service found that a proposed plan of operations was likely to jeopardize the continued existence of one or more of the listed species or adversely modify its critical habitat, the Bureau, with the authorities at 43 CFR 3809.411(d)(3)(iii), "may disapprove of or withhold a plan of operations if the proposed operations 'would result in unnecessary or undue degradation of public lands'" (Bureau 2002). Unnecessary or undue degradation is defined as "conditions, activities, or practices that, among other things, 'fail to comply with ... other Federal or State laws related to environmental protection..." (Bureau 2002). The Bureau also noted that a biological opinion from the Service concluding that a plan of operations would likely jeopardize the continued existence of a species "would certainly indicate a failure to comply with the standards of the Endangered Species Act, and would, therefore, constitute unnecessary and undue degradation."

Under the current baseline conditions for these species and critical habitat of the Ash Meadows gumplant and Amargosa niterwort, consultation, pursuant to section 7(a)(2) of the Act, on a small mine may not result in a determination of jeopardy or adverse modification. Therefore, although the Bureau would require the operator to reduce effects and compensate, the likely outcome of such a mining operation would be a long-term or permanent removal of individuals and habitat of the Lane Mountain milk-vetch, Amargosa niterwort, or Ash Meadows gumplant. If an operator proposed a mine that would have effects rising to the level of jeopardy to the species or adverse modification of critical habitat, the Bureau has the regulatory authority to disapprove the proposal.

In summary, the California Desert Conservation Area Plan does not contain specific program guidance that would preclude mining in areas occupied by the Lane Mountain milk-vetch, Ash Meadows gumplant, or Amargosa niterwort. However, the generally low mineral potential of the areas occupied by these species (Bureau 2002, see map 11 [economic mineral resources] in

Bureau 1999), the lack of any substantial mining efforts in the action area in the past, and the Bureau's unnecessary and undue degradation standard provide some assurance that mining activity is unlikely to substantially degrade the baseline for the Lane Mountain milk-vetch, Amargosa niterwort, and Ash Meadows gumplant.

Motorized-vehicle Access and Transportation

Under the Bureau's existing guidance, new roads and ways may be developed within Class L and M lands. The development of new roads and ways would result in habitat loss and fragmentation and loss of individuals of the Lane Mountain milk-vetch, Amargosa niterwort, and Ash Meadows gumplant. In addition to disturbance and fragmentation of habitat, new roads and ways that cross drainages inhabited by the Amargosa niterwort and Ash Meadows gumplant could disrupt the natural hydrological regime. The loss, disturbance, or fragmentation of habitat and the disruption of hydrological regimes could reduce the ability of the critical habitat units of the Amargosa niterwort and Ash Meadows gumplant to support these species. All new roads increase the likelihood of invasion by non-native plant species.

The Bureau's guidance allows the use of motorized vehicles on existing routes of travel until designation of routes is accomplished. Vehicle use on the existing routes of travel is not likely to affect the listed species under consideration in this biological opinion in a substantial manner. Dust generated from use of the road may cover individuals near the road and interfere with pollination or photosynthesis. Currently, no roads traverse habitat of the Ash Meadows gumplant and the new fence along Stateline Road that bisects critical habitat of the Amargosa niterwort precludes travel on an existing route immediately south of the road. Habitat occupied by the Lane Mountain milk-vetch is crossed by several roads; however, our casual observations seem to indicate that the plants appear equally abundant both near and away from roads.

The Bureau's guidance allows cars and trucks to drive and park up to 300 feet from a route of travel. Such off-road travel can crush plants, degrade habitat (particularly when vehicles need to be extracted from deep sand, damp areas, or rocky terrain), and cause the spread of non-native plant species. In habitat occupied by the Amargosa niterwort and Ash Meadows gumplant, vehicles traveling off road can also alter soil moisture regimes. The crushing of host plants that are necessary for the establishment and persistence of the Lane Mountain milk-vetch could occur within habitat of this species.

The presence of routes of travel through or near the habitats of listed species presents an ongoing level of threat to these species from illegal vehicle use. Although the section 7 process is not intended to review illegal activities, unauthorized off-road use occurs at least partially as a result of authorized activities. The new fence that bisects the critical habitat of the Amargosa niterwort should reduce the likelihood of unauthorized off-road activity. Because the general terrain where the Lane Mountain milk-vetch occurs is more rugged than where the Ash Meadows gumplant and Amargosa niterwort occur, some drivers may perceive some level of challenge in driving off-road in that plant's habitat and attempt to leave existing routes. We have observed extensive

tracks made by motorcycles within and adjacent to habitat of the Lane Mountain milk-vetch, both on Coolgardie Mesa and on former public lands west of the Paradise Range.

Within Class L and M lands, railroads and trams may be allowed. Under certain conditions, temporary landing strips may be allowed in Class L lands and airports and landing strips may be allowed within Class M lands. Railroads, trams, temporary landing strips, and airports do not currently exist in areas where the three listed species occur. These facilities, if developed, could result in loss and fragmentation of habitat, loss of individual plants, disruption of hydrological regimes, and the spread of non-native species. At this time, the likelihood of these facilities or operations being proposed is low.

Recreation

Within Class L lands, the Bureau's guidelines allow for recreation which generally involves low to moderate user densities. Recreational activities can include backpacking; camping at primitive, unimproved sites; hiking; horseback riding; rockhounding; nature study; and rock climbing. Non-competitive vehicle touring and events on approved routes of travel are also permitted under existing Bureau guidance. Any organized event requires a permit specifying the conditions of use, which could include the definition of the approved routes and prohibitions, such as no pit, start, finish, or spectator areas.

Within Class M lands, the Bureau's guidelines allow for recreation which may involve moderate to high user densities. Recreational activities can include those permitted for Class L lands. Competitive events involving motorized vehicles are limited to existing routes of travel and must be approved by the authorized officer. Pit, start, and finish areas must be approved by the authorized officer. All competitive events involving 50 or more vehicles require permits.

Many of the effects of activities that could occur under the Bureau's guidance for recreation have been discussed previously in the Effects of the Action section of this biological opinion (*e.g.*, the effects of the use of roads by vehicles and walking through habitat). Other recreational activities, such as horseback riding through habitat of the Lane Mountain milk-vetch, Amargosa niterwort, and Ash Meadows gumplant, could also cause disturbance of the ground, crushing of plants, and introduction of non-native species. However, the areas that support these species have not been used extensively in the past for authorized recreational activities. Consequently, the threat to these species from general recreation is low.

Unauthorized activities, particularly off-road vehicle use, have caused degradation of habitat in and near areas occupied by the Lane Mountain milk-vetch. The access provided by the Bureau for legitimate uses, such as recreation, facilitates some degree of unauthorized use.

The Bureau periodically renews a lease to the County for Inyo for the public bath house at Tecopa Hot Springs; we will discuss this ongoing use here because the recreation guidelines allow the development of permanent or temporary facilities if they promote public health and

safety. The bath house facilities occur on Class L lands; the Bureau's guidance on such lands provides for recreation with low to moderate user densities.

Past and current uses and the development of infrastructure in the vicinity of the bath houses has likely adversely affected the Amargosa niterwort in numerous ways (Bureau 2001b). Compaction of soils has likely affected the establishment of seedlings. Capping of the spring source and diversion of surface water to the bath houses has affected the moist soil regime that is necessary for the establishment and persistence of the Amargosa niterwort. The establishment of non-native, invasive plant species, including an unidentified species of palm tree, salt cedar, and athel trees (*Tamarix aphylla*), has likely reduced the overall amount of habitat that could be occupied by the Amargosa niterwort. The existing sewage lagoon and various water pipelines require periodic maintenance and replacement; these activities require disturbance of potential or occupied habitat. These activities have likely resulted in the loss of individuals of the Amargosa niterwort and fragmentation of its remaining habitat. Installation of the bath houses preceded the listing of the Amargosa niterwort; however, the continuation of many of these activities since the listing have largely been a result of insufficient survey data that would have allowed the Bureau to recognize the presence of the Amargosa niterwort and avoid impacts to individuals or their habitat.

Wildlife Species and Habitats

Within Class L and M lands, the Bureau's guidance allows the control of depredating wildlife and pests in accordance with existing State and federal laws. Reintroduction or introduction of native species or established exotic species is also allowed on Class L and M lands. Projects that are designed to manipulate habitat quality for wildlife benefits are allowed; within Class M lands, chemical and mechanical manipulation may be allowed. The Bureau may also monitor the status of certain wildlife populations and how public use of the desert may be affecting this resource.

Mechanical manipulations that involve ground disturbance may crush individuals of the listed plant species or create conditions that facilitate the replacement of a native plant community with exotic species that may replace the native flora. Ground disturbance may also destroy the host plants that are necessary for successful recruitment of the Lane Mountain milk-vetch.

The control of pest species could affect the Lane Mountain milk-vetch, Amargosa niterwort, and Ash Meadows gumplant both positively and negatively. The removal of pests could assist in restoring native biological communities, which would likely be beneficial to the listed species. However, the implementation of control measures could cause ground disturbance, loss of individuals of the listed species, and other adverse effects.

Baseline monitoring could adversely affect the Lane Mountain milk-vetch, Amargosa niterwort, and Ash Meadows gumplant if individual plants are crushed by workers traversing occupied habitat; minor ground disturbance and the spread of non-native plant species may also occur during monitoring. However, in general, the level of activity associated with monitoring would

likely result in minor impacts; additionally, the information gained during such monitoring could be useful in management of the listed taxa.

The deliberate introduction or reintroduction of wildlife species or wildlife management activities involving chemical and mechanical manipulations could cause loss of individuals and habitat through ground disturbance, result in the inadvertent introduction of non-native species, or reduce the abundance of pollinator species. The introduction or reintroduction of wildlife species could also affect these species if the introduced species forages on individuals of the listed species or the host plants of the Lane Mountain milk-vetch or alters the existing ecological conditions in some manner. However, the Bureau has not authorized any activities involving in areas where the Ash Meadows gumplant, Amargosa niterwort, and Lane Mountain milk-vetch occur. Consequently, the program guidance for wildlife species and habitats does not appear to pose a substantial threat to these species or critical habitat of the Amargosa niterwort and Ash Meadows gumplant at this time.

Miscellaneous Activities

The Bureau will occasionally undertake, authorize, or fund activities that were not specifically addressed by a particular element or land use activity in the California Desert Conservation Area Plan. For example, guidance regarding the authorization of a project for the sole purpose of pumping groundwater may be lacking, superficially described, or very general. Such a project in the vicinity of the Amargosa niterwort could potentially be approved within the current guidelines of the Plan; the authorization could result in lower local groundwater tables that adversely affect the survival and recovery of the species. We recognize the development of program-level guidance relevant to every potential activity that could occur in the California Desert Conservation Area is not feasible. However, actions approved without guidance that addresses the specific needs of listed species could cumulatively lead to irreversible degradation of the species' condition.

Summary

The amended California Desert Conservation Area Plan provides general guidance to the Bureau for its management of activities within the California Desert Conservation Area. A portion of the guidelines for the multiple-use classes and the elements clearly benefits the conservation of the Lane Mountain milk-vetch, Amargosa niterwort, and Ash Meadows gumplant; for example, prohibiting the development of nuclear and fossil fuel plants within Class L lands ensures that the Ash Meadows gumplant, which occurs only on such lands, would not be threatened by this type of activity. Other guidelines for the multiple-use classes and the elements allow activities to occur that could have substantial adverse effects on the listed species; as an example, the guidelines allow the development of wind and solar plants within Class L lands. However, except for casual uses (*e.g.*, casual mining exploration, vehicle use on existing roads, hiking, vehicle camping along existing roads), activities and projects will receive site-specific environmental review and consultation with the Service pursuant to section 7(a)(2) of the Act.

Therefore, all activities and projects, except casual uses, may be denied, modified, or mitigated to reduce adverse effects to listed species.

The development of an area of critical environmental concern in the lower Carson Slough area should provide increased protection to the Ash Meadows gumplant and Amargosa niterwort; the ultimate value of the designation of the area of critical environmental concern cannot be determined until its management plan is developed and implemented. As mentioned previously in this section of the biological opinion, the remote locations of most of the occurrences of the Lane Mountain milk-vetch, Amargosa niterwort, and Ash Meadows gumplant lend some degree of protection from many of the activities allowed by the guidelines and elements that could adversely affect them. We have also noted that, in at least two cases (specifically, unauthorized off-road vehicle use and authorization of the lease for the Tecopa Hot Springs bath house within habitat of the Lane Mountain milk-vetch and Amargosa niterwort, respectively), damage to habitat of these species has occurred. The Bureau has addressed unauthorized off-road vehicle use by constructing a fence along both sides of the paved road that bisects critical habitat of the Amargosa niterwort; monitoring will determine the effectiveness of the fence.

The low level of activities that are ongoing within the habitat of the Lane Mountain milk-vetch, Amargosa niterwort, and Ash Meadows gumplant provides an indication that most occurrences of these species are not experiencing direct and immediate threats and impacts as a result of the implementation of the California Desert Conservation Area Plan. The level of threat could increase in the future as human needs and activity patterns change.

CUMULATIVE EFFECTS

Cumulative effects include the effects of future State, tribal, local, or private actions that are reasonably certain to occur in the action area considered in this biological opinion. Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the Act. We are unaware of any non-federal actions that are reasonably certain to affect these species.

CONCLUSION

After reviewing the current status of these species, the environmental baseline for the action area, the effects of the proposed action, and the cumulative effects, it is our biological opinion that continued implementation of California Desert Conservation Area Plan, as modified by previous amendments, previous consultations on listed species, the proposed Northern and Eastern Mojave bioregional plan, and the interim measures, is not likely to jeopardize the continued existence of the Amargosa niterwort, Ash Meadows gumplant, and Lane Mountain milk-vetch. It is also our biological opinion that the proposed action is not likely to destroy or adversely modify the critical habitat of the Amargosa niterwort and Ash Meadows gumplant.

We have reached these conclusions because the Bureau has proposed and implemented, in some cases, measures to avoid or minimize adverse effects to and further the conservation of the Lane Mountain milk-vetch, Amargosa niterwort, and Ash Meadows gumplant and their habitats. Additionally, the Bureau has proposed to create the Lower Carson Slough Area of Critical Environmental Concern; management guidance adopted for specific areas of critical environmental concern can override the general program guidance. Therefore, although some aspects of the Bureau's program guidance may allow activities to occur that could have substantial detrimental effects on the Ash Meadows gumplant and Amargosa niterwort, little likelihood exists that such actions would occur before the management plan for the area of critical environmental concern is developed and implemented. Finally, every future discretionary action that the Bureau would undertake, authorize, or fund that may affect these species is subject to the requirements of section 7(a)(2) of the Act. Program guidance in the California Desert Conservation Area Plan clearly states that the Bureau will comply with the Act; this compliance includes following the guidance provided by all biological opinions provided by the Service.

INCIDENTAL TAKE STATEMENT

Section 9 of the Act does not address the incidental take of listed plant species; however, protection of listed plants is provided in that the Act requires a Federal permit for the removal or reduction to possession of endangered or threatened plants from Federal lands. Furthermore, it is unlawful for any person to remove, cut, dig up, or damage or destroy a listed plant species in knowing violation of any law or regulation of any state or in the course of any violation of a state criminal trespass law.

CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the Act directs Federal agencies to use their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop information.

The California Desert Conservation Area Plan provides the Bureau with management direction for much or all of the geographic range of the Lane Mountain milk-vetch, Amargosa niterwort, and Ash Meadows gumplant and thereby has a profound effect on their survival and recovery. The importance of the California desert to the conservation of these species magnifies the importance for the California Desert Conservation Area Plan and the collective effects of its implementation to reflect the recovery goals or needs of listed species, as described in approved recovery plans. However, in its current configuration, the California Desert Conservation Area Plan is structured to a great degree to rely on section 7(a)(2) consultation to avoid jeopardy or adverse modification of critical habitat, rather than to establish a program that promotes recovery of listed species in conformance with section 7(a)(1) of the Act.

The recovery plan for the listed species of Ash Meadows (Service 1990) identifies several tasks that are intended to promote the protection and recovery of the Amargosa niterwort and Ash Meadows gumplant. The Bureau's biological assessment notes that the guidelines for Class L lands are "generally consistent" with the management recommendations for the Amargosa niterwort and Ash Meadows gumplant in the recovery plan; it also notes that the guidelines for Class M lands are "in conflict" with the management recommendations for the Amargosa niterwort in the recovery plan. We concur that the Class L guidelines provide a greater degree of protection than those of Class M. However, even the Class L guidelines allow activities that could have substantial deleterious effects on listed species that occur on these lands. We fully understand that all future actions would be subject to full review, under the authorities of section 7(a)(2) of the Act, and that the Bureau could deny proposals for activities that would compromise the survival and recovery of the listed species. However, the current management direction allows potential conflict between development and conservation. The Bureau could, through the development of guidance in the form of the management plan for the area of critical environmental concern, provide clear direction that the primary goal in areas occupied by these species is their survival and recovery.

We have based the following conservation recommendations on tasks contained in the recovery plan for the Amargosa niterwort and Ash Meadows gumplant, our understanding of the recovery needs of these species, and potential threats to their survival and recovery.

1. The Bureau should include provisions in the management plan for the Lower Carson Slough Area of Critical Environmental Concern that are designed to reduce or avoid any adverse effects of mineral entry on the Amargosa niterwort and Ash Meadows gumplant. These provisions could include conducting a validity examination on all claims for which a plan of operations is proposed. The Bureau should establish a program, possibly working with non-governmental organizations, to acquire any mining claims which the validity examination determines are valid.
2. The Bureau should adopt guidelines that prohibit the diversion or export of ground or surface water from the Lower Carson Slough Area of Critical Environmental Concern; this prohibition should also be extended to include areas that may be outside of the area of critical environmental concern but which contribute to its hydrological conditions.
3. The Bureau should remove salt cedar from within habitat of the Ash Meadows gumplant and Amargosa niterwort, monitor these areas, and take measures to control it when it re-invades.
4. The Bureau should conduct or promote studies of the ecology of these species, including the factors that control the population size of the Amargosa niterwort and Ash Meadows gumplant. Data gathered from these efforts should be incorporated into impact analyses that the Bureau may conduct as it reviews and authorizes future project proposals.

5. The Bureau should monitor the effectiveness of the fence that was installed in the vicinity of the proposed Lower Carson Slough Area of Critical Environmental Concern. If annual monitoring within three years of the time of fence construction indicates that unauthorized off-road vehicle activity still affects the Ash Meadows gumplant, the Amargosa niterwort, or their critical habitat, the design or extent of the fence should be modified to better protect the listed species.
6. The Bureau should expand its water monitoring activities to track long-term hydrological conditions along the length of the Amargosa River that supports the Amargosa niterwort and Ash Meadows gumplant and their habitats within the California Desert Conservation Area. We also recommend that the Bureau expand these activities to the entire length of the Amargosa River in the California Desert Conservation Area to ensure that water resource values in the entire watershed are monitored.
7. The Bureau should work closely with other agencies (*i.e.*, the National Park Service and Bureau offices in Nevada) that also have a stake in the management of aquatic and riparian environments along the Amargosa River. Coordination of protective management strategies across the entire Amargosa River watershed will serve to better protect water-dependent species and result in more effective understanding of land use patterns that have the potential to degrade aquatic and riparian habitats and species in an acute or chronic manner.
8. The Bureau should conduct in-depth resource inventories of water-dependant species along the Amargosa River that have narrow geographic or endemic geographic distributions. These species are vulnerable to potential population declines that may result from anthropogenic activities. After the status of sensitive species has been determined, the Bureau should develop and implement rigorous monitoring strategies for assessing and tracking temporal trends in population numbers and habitat quality.
9. The Bureau should review the impacts that are currently resulting from the periodic renewal of the lease that allows public bathing and use at the Tecopa Hot Springs facility. Pending this evaluation, the Bureau should develop and implement a management plan that promotes the maintenance and recovery of the Amargosa niterwort in the local area.

The Service is currently drafting a recovery plan for the Lane Mountain milk-vetch. Our conservation recommendations are based on tasks contained in the administrative draft of the recovery plan, our understanding of the recovery needs of this species, and the potential threats to its survival and recovery.

10. The Bureau should, after reviewing information gathered by the Army in 2001, complete surveys for the Lane Mountain milk-vetch to determine the full extent of its range; during these surveys, field workers should also document any threats to the species and disturbed areas that they encounter.

11. The Bureau should designate areas occupied by the Lane Mountain milk-vetch on land it manages as areas of critical environmental concern and develop a management plan that addresses the recovery needs of this species.
12. The Bureau should acquire any private lands occupied by the Lane Mountain milk-vetch or within 1 mile of occupied habitat areas to maintain the ecological processes on which the species depends.
13. The Bureau should include provisions in a management plan for the recommended area of critical environmental concern that are designed to reduce or avoid any adverse effects of mineral entry on the Lane Mountain milk-vetch. These provisions could include conducting a validity examination on all claims for which a plan of operations is proposed. The Bureau should establish a program, possibly working with non-governmental organizations, to acquire any mining claims which the validity examination determines are valid.
14. The Bureau should determine whether mining activity conducted by clubs on Coolgardie Mesa are affecting the Lane Mountain milk-vetch and the ecological processes upon which it depends. If the Bureau determines that these activities are adversely affecting this species, it should undertake actions to remediate the situation.
15. The Bureau should undertake research to ensure that management actions are appropriate and will contribute to the long-term survival of the Lane Mountain milk-vetch.
16. The Bureau should conduct or promote studies on habitat requirements, dispersal, colonization, reproduction, and interspecific interactions that may limit population numbers or densities (*e.g.*, herbivory, pollinators) to augment understanding of the species' ecology as it pertains to long-term persistence.
17. The Bureau should monitor the demographics, population trends, and threats to the Lane Mountain milk-vetch on a long-term basis.
18. The Bureau should restore degraded habitat in or near Lane Mountain milk-vetch populations.
19. The Bureau should control the spread of Sahara mustard into habitat of the Lane Mountain milk-vetch through regular monitoring and removal.

The Service requests notification of the implementation of any conservation recommendations so we may be kept informed of actions minimizing or avoiding adverse effects or benefitting listed species or their habitats.

REINITIATION NOTICE

This concludes formal consultation on the effects of the California Desert Conservation Area Plan, as amended, and proposed for modification, on the Lane Mountain milk-vetch, Ash Meadows gumplant, and Amargosa niterwort. As provided in 50 CFR §402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been retained (or is authorized by law) and if (1) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; (2) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat not considered in this opinion; or (3) a new species is listed or critical habitat designated may be affected by the action.

If you have any questions regarding this biological opinion, please contact Doug Threloff or Ray Bransfield of our Ventura Fish and Wildlife Office at (805) 644-1766 or George Walker of our Barstow Fish and Wildlife Office at (760) 255-8852.

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Appendix W

USFWS Biological Opinion for Threatened Desert Tortoise in the Planning Area

New Appendix



United States Department of the Interior

FISH AND WILDLIFE SERVICE

Ventura Fish and Wildlife Office
2493 Portola Road, Suite B
Ventura, California 93003

June 17, 2002

Memorandum

To: State Director, Bureau of Land Management, Sacramento, California

From: *Acting* Field Supervisor, *Paul [Signature]* Ventura Fish and Wildlife Office, Ventura, California

Subject: Biological Opinion for the California Desert Conservation Area Plan [Desert Tortoise] (6840(P) CA-063.50) (1-8-01-F-16)

This document transmits the U.S. Fish and Wildlife Service's (Service) biological opinion based on our review of the California Desert Conservation Area Plan. The proposed action is the California Desert Conservation Area Plan as it has been formally amended since 1980, modified by previous consultations related to grazing in the western Mojave Desert, modified by proposed interim conservation measures, and proposed to be modified by the Northern and Eastern Mojave and Northern and Eastern Colorado bioregional plans. At issue are the effects of the California Desert Conservation Area Plan, as modified and proposed for modification, and ongoing activities occurring in the California Desert Conservation Area on the federally threatened desert tortoise (*Gopherus agassizii*) and its critical habitat. This document was prepared in accordance with section 7(a)(2) of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 *et seq.*) (Act). Your request for formal consultation was received on January 31, 2001.

This biological opinion is based on the following information: (1) the California Desert Conservation Area Plan, as modified by various planning amendments between 1980 and 1999 (Bureau of Land Management [Bureau] 1999); (2) the draft environmental impact statement for the northern and eastern Mojave Desert planning area (Bureau 2001b); (3) the draft environmental impact statement for the northern and eastern Colorado Desert planning area (Bureau and California Department of Fish and Game 2001); (4) your biological evaluation (Bureau 2001a); (5) information that you transmitted to us in a memorandum on September 27, 2001; (6) various written and oral communications, including meetings among staff of the Service and the Bureau; (6) previous biological opinions on sheep and cattle grazing; and (8) various reports and publications. A complete administrative record of this consultation is on file in the Service's Ventura Fish and Wildlife office.

CONSULTATION HISTORY

On March 16, 2000, the Center for Biological Diversity, the Sierra Club, and the Public Employees for Environmental Responsibility filed a lawsuit against the Bureau. The plaintiffs alleged that the Bureau violated section 7(a)(2) of the Act and its implementing regulations by failing to initiate and complete a programmatic consultation with Service on the effects of the California Desert Conservation Area Plan, its amendments, and all related actions that may affect listed species in the California Desert Conservation Area that are authorized, approved, allowed, or otherwise carried out pursuant to the California Desert Conservation Area Plan and its amendments. The plaintiffs also alleged that the Bureau violated section 7(d) of the Act and its implementing regulations by authorizing, allowing, or otherwise carrying out a variety of land use practices and other projects that may affect federally listed species prior to completing consultation with the Service on the California Desert Conservation Area Plan and its amendments.

On August 25, 2000, the plaintiffs and the Bureau agreed to a settlement agreement that was approved by the U.S. District Court, Northern California Division. Terms of the agreement required that the Bureau enter into formal consultation with the Service under section 7(a)(2) of the Act on the California Desert Conservation Area Plan as it would be modified by proposed amendments resulting from various planning efforts. On January 16, 2001, the plaintiffs and the Bureau agreed to a second settlement agreement that described 58 measures intended to promote the conservation of various listed species within the California desert.

We provided a draft biological opinion on the effects of the California Desert Conservation Area Plan on the desert tortoise and its critical habitat to you on May 8, 2002 (Service 2002). By memorandum dated May 24, 2002, you provided comments on our draft document (Bureau 2002b). We have addressed and incorporated, where appropriate, the comments in your memorandum.

In the Northern and Eastern Mojave and Northern and Eastern Colorado plans, the Bureau proposed an expedited consultation mechanism for future projects that may occur in these areas. Given the results of recent court decisions, we do not believe that the mechanism proposed by the Bureau would not provide adequate project-specific review. Personnel from the Service and Bureau discussed alternative means of conducting adequate project-specific reviews in an expedited manner while the Bureau was considering the draft biological opinion; however, we did not develop a process that satisfied both agencies. Consequently, we have agreed to discuss this issue again after issuance of this document.

DESCRIPTION OF THE PROPOSED ACTION

Purpose and Function of the California Desert Conservation Area Plan

Congress designated the California Desert Conservation Area with section 601(c) of the Federal Land Policy and Management Act of 1976. To provide for management of recreational use and

to resolve other resource and public land use conflicts, the Federal Land Policy and Management Act also directed the Secretary of the Interior to “prepare and implement a comprehensive, long-range plan for management, use, development, and protection of the public lands within the California Desert Conservation Area.” The purpose, as specified by Congress, was “to provide for the immediate and future protection and administration of the public lands in the California Desert within the framework of a program of multiple use and sustained yield, and the maintenance of environmental quality.” The California Desert Conservation Area Plan was signed in January 1980 and now serves as the primary document that describes the basic management principles the Bureau uses for managing its portion of the California Desert Conservation Area. Since adoption, nine major amendments to the California Desert Conservation Area Plan have been completed.

The California Desert Conservation Area Plan employs three basic tools for managing resources in the California Desert Conservation Area. These tools are:

1. Four multiple-use classes are the basis of a land zoning system that allows for a variety of uses and resource conservation activities.
2. Twelve elements provide detailed treatments and prescriptions addressing the management of different land uses and resources.
3. The designation of special management areas, including, but not limited to Special Areas and Areas of Critical Environmental Concern provides for the conservation of specific resource values.

Previous Consultations

The Bureau and Service have completed approximately 292 formal consultations for actions affecting the desert tortoise or its critical habitat within the boundary of the California Desert Conservation Area. This number does not accurately reflect the number of actions that the Bureau has authorized or implemented for several reasons. First, several formal consultations were programmatic in nature and considered the effects of numerous separate actions; the several biological opinions that evaluated the effects of pipeline maintenance are examples of this type of consultation. Other consultations were conducted as a result of the designation of critical habitat for the desert tortoise; these biological opinions evaluated the effects on critical habitat of actions for which consultation on the desert tortoise had already been completed. Finally, we have completed consultation on several actions which were never implemented; the waste disposal sites in the Cady Mountains and at Broadwell and Bristol Dry Lakes are examples of such consultations. In addition to these formal consultations, the Bureau and Service have engaged in numerous informal consultations.

Previous consultations on the effects of livestock grazing in the California desert on the desert tortoise have substantially changed, at least in some cases, the manner in which this activity

occurs. As a result of consultations on sheep grazing (1-6-F-91-F-18 and 1-8-94-F-16), the Bureau has not allowed the grazing of sheep within most of the area of critical habitat of the desert tortoise since approximately 1991. The later consultation will remain in effect in the western Mojave Desert until the Western Mojave Coordinated Management Plan is finalized and implemented.

We have issued several biological opinions to the Bureau with regard to cattle and the desert tortoise. We issued a biological opinion regarding 4 allotments along the eastern slope of the Sierra Nevada in August 1992 (1-6-92-F-55, Service 1994b)). In March 1994, we issued a biological opinion regarding 25 allotments, primarily in the eastern Mojave Desert (1-8-94-F-17). Both of these biological opinions concluded that the Bureau's cattle grazing program in the California Desert Conservation Area was not likely to jeopardize the continued existence of the desert tortoise. On April 20, 1994, the Service issued a biological opinion that evaluated the effects of cattle grazing on critical habitat, which had recently been designated (1-5-94-F-107); we concluded that the Bureau's rangewide cattle grazing program was not likely to adversely modify critical habitat the desert tortoise (Service 1994a).

The Service and Bureau have also consulted programmatically on the effects of small mines, small projects, remediation of illegal dumps, dual sport events, installation of minor electrical utilities, and pipeline maintenance on the desert tortoise and its critical habitat. These consultations were conducted to expedite the consultation process for the numerous projects that were similar in nature and had relatively minor effects on the desert tortoise; because of compensation requirements imposed by the Bureau, some acquisition of lands important to the recovery of the species has also occurred as a result of these programs. In the biological opinions for all of these consultations, the Service concluded that the proposed actions were not likely to jeopardize the continued existence of the desert tortoise or adversely modify its critical habitat because of the protective measures proposed by the Bureau, the likelihood that these actions could be undertaken with little or no injury to or mortality of desert tortoises, and the small area of disturbance in relation to the available habitat of the species. These consultations will remain in effect throughout the California Desert Conservation Area unless subsequent consultation procedures are implemented.

Purpose and Function of the Proposed Interim Measures

The Bureau has proposed to implement several interim measures to protect threatened and endangered species within the California Desert Conservation Area. The interim measures were developed to provide short-term conservation benefits that can be implemented without incurring the long time frames that are required to complete the comprehensive bioregional plans.

Most of the interim measures will remain in effect until the California Desert Conservation Area Plan can be amended through the development of the bioregional plans. The final measures amending the California Desert Conservation Area Plan in the bioregional plans may differ from the interim measures presented here. As new amendments are proposed for the Plan, the Bureau will consult, pursuant to section 7(a)(2) of the Act, with the Service on the proposed changes.

The following measures have been modified to some degree since the Bureau requested consultation because of changes in the settlement agreement and the completion of at least a portion of the tasks. The numbering of the measures follows that contained in the Bureau's biological assessment. However, the Bureau (2002c) provided additional information regarding changes to measure 7 in a memorandum dated April 29, 2002; additionally, measure 6 from the biological assessment has been combined with measure 1.

1. The Bureau has implemented emergency road closures in the west Mojave planning area in the Red Mountain, Kramer, Fremont, Superior, and Newberry/Rodman route subregions. The Bureau will maintain the emergency route closures in the Ord Mountain pilot area and the route closures in the Red Mountain, Fremont, Kramer, Superior, and Newberry/Rodman polygons of the west Mojave planning area until the West Mojave Coordinated Management Plan is completed.
2. The Bureau will close the Red Mountain, Fremont, Superior, Kramer, and Newberry/Rodman route subregions in the west Mojave planning area to shooting, except for hunting and target practice at paper targets specifically created for such purpose.
3. To benefit the desert tortoise (and other threatened and endangered species), the Bureau will amend its brochures and maps distributed to the public to encourage camping only in previously disturbed sites.
4. The Bureau will not authorize competitive events for motorized off-highway vehicles outside of designated off-highway vehicle open areas except for events passing through the Navy Parachute Range between the Plaster City and Superstition Hills Off-highway Vehicle Management Area. Dual sport events conforming with the existing biological opinion are not restricted by this interim measure.
5. The Bureau will place the highest priority of its management program for burros (*Equus asinus*) on the removal of burros in the habitat of threatened or endangered species. The Bureau hired two monitoring specialists to conduct habitat evaluations in burro herd management areas during 2001.
 - 7a. Cattle grazing will not be authorized in desert tortoise habitat in the Tunawee Common and Hansen Common allotments as shown on maps provided by the Bureau (2002c). In the Hansen Common Allotment, grazing would not occur on an 3,500-acre area downslope of the Second Los Angeles Aqueduct. In the Tunawee Common Allotment, grazing would not occur on an 1,800-acre area south of Little Lake between the western boundary of the Naval Air Weapons Station, China Lake and Highway 395.
 - 7b. Grazing will not be authorized in desert tortoise habitat in the Ord Mountain, Cronese Lake, Harper Dry Lake, Cady Mountains, Rattlesnake Canyon, Rudnick Common, and Walker Pass allotments in the areas shown on maps provided by the Bureau (2002c) from

March 1 through June 15 and from September 7 through November 7. Information on the areas from which grazing would be excluded is provided in the following table.

Allotment	Acres in Allotment	Acres in Exclusion Area (% of allotment)	Acres of Critical Habitat in Allotment	Acres of Excluded Critical Habitat (% of Critical Habitat in Allotment)
Ord Mountain	154,848	67,350 (43)	102,141	41,650 (41)
Cronese Lake	65,304	18,000 (28)	30,080	18,000 (60)
Harper Dry Lake	26,314	18,954 (72)	16,482	16,482 (100)
Cady Mountains	231,897	88,320 (38)	0	-
Rattlesnake Canyon	28,757	6,600 (23)	0	-
Rudnick Common	236,184	31,000 (13)	0	-
Walker Pass	96,974	32,100 (33)	0	-

- 7c. On the Ord Mountain, Cronese Lake, and Harper Dry Lake allotments, grazing will not exceed 62,842 animal-days per year, 13,383 animals-days per year, and 17,033 animal-days per year, respectively. [These limits are the average use reported in the 1997, 1998, and 1999 billing years.]
8. For protection of habitat of the desert tortoise (and other threatened and endangered species), the Bureau will maintain the Whitewater Allotment in rest until the Coachella Valley bioregional plan is signed.
9. For protection of habitat of the desert tortoise, the Bureau will not authorize grazing in the Pilot Knob Allotment until the West Mojave Coordinated Management Plan is signed.
10. The Bureau will develop, in coordination with the Service and others, and implement a stipulation regarding roadside berm size and slope for graded roads on Bureau lands. The intent of the stipulation is to reduce the entrapment and mortality of desert tortoises on graded roads. The Bureau will require right-of-way holders to change grading practices

on Bureau-administered public lands to conform to this new stipulation. The Bureau will work with county governments to encourage application of the stipulation to county maintained roads. The Bureau will implement the new stipulation as soon as reasonably possible.

Purpose and Function of the Bioregional Plans

Because the California Desert Conservation Area covers approximately 25 million acres and land management issues are substantially different across the desert landscape, federal, state, and local land management agencies have divided the California Desert Conservation Area into five bioregional planning areas. These include the Western Mojave Desert, the Northern and Eastern Mojave Desert, the Northern and Eastern Colorado Desert, the Western Colorado Desert, and the Coachella Valley. Major interagency planning efforts have been underway for some time in four of the five areas. Planning efforts have not yet begun in the Western Colorado Desert bioregion. The bioregional plans will be or have been written to develop region-specific management activities that are applicable to the local region. As such, the plans will address unique biological resource issues that are applicable to a given area and provide solutions that address local land management needs. The Bureau has participated in the bioregional planning efforts with the intent of amending the California Desert Conservation Area Plan to develop area-specific management plans that will address and improve conservation management of biological resources, particularly as it relates to protection and recovery of threatened and endangered species. The desert tortoise occurs within all of the bioregional planning areas. The West Mojave Coordinated Management and Coachella Valley Plans are currently being developed; the draft Northern and Eastern Mojave and Northern and Eastern Colorado plans have been released for public review.

Future Consultations

The California Desert Conservation Area Plan provides program guidance in numerous places that threatened and endangered species will be protected through compliance with the Act. The Bureau also notes in other documents that future consultations, pursuant to section 7(a)(2) of the Act, would be required for site-specific actions. Consequently, we have not repeated these commitments throughout the description of the proposed actions.

Multiple-Use Classes

To more effectively and consistently manage its portion of land within the California Desert Conservation Area boundary, the Bureau has developed a land zoning system that provides specific land management prescriptions. Under this zoning strategy, lands managed by the Bureau are assigned one of four multiple-use classes. The multiple-use class assignment is based on the considered sensitivity of resources and kinds of uses occurring in each geographic area. The four multiple-use classes are Class C (Controlled Use), Class L (Limited Use), Class M (Moderate Use), and Class I (Intensive Use).

Multiple-Use Class C: Formally designated wilderness areas and areas that have been recommended as being suitable for wilderness designation are managed under this class. Congress designated wilderness areas across large portions of the California Desert Conservation Area in 1994 with the California Desert Protection Act; these Congressional designations supercede the multiple-use class boundaries assigned by the Bureau in 1980 when the California Desert Conservation Area Plan was finalized.

Multiple-Use Class L: Lands within this class include areas that are managed to provide for lower density, carefully controlled multiple uses of resources while ensuring that sensitive values are not significantly diminished.

Multiple-Use Class M: Lands within this class include areas that are managed to provide for a wide variety of present or future uses that include mining, livestock grazing, recreation, energy, and utility development.

Multiple-Use Class I: Lands within this class include areas that will experience concentrated use serving human needs. The Bureau attempts to mitigate impacts to resource values in Multiple-Use Class I lands and attempts to rehabilitate these disturbed areas to the extent possible.

All land-use actions and resource-management activities on public lands must meet the guidelines for the class of land on which they would occur. These guidelines are divided into 19 categories and are more fully described in the California Desert Conservation Area Plan (Bureau 1999).

In addition to the four multiple-use classes, the Bureau also manages a limited amount of land that has not been classified. Parcels in the “unclassified lands” category are managed on a case by case basis, according to the land tenure adjustment element that is described in greater detail below.

Desert tortoises may be found on all classes of land, including those that are unclassified. The following table, which was adapted from the California Desert Conservation Area Plan (Bureau 1999), describes the differences among the classes of lands as they relate to the desert tortoise. When the guidelines for a particular multiple-use class are such that the desert tortoise will not be affected by certain activities, we have included “no effect” in that portion of the table. Such guidelines will not be discussed for that multiple-use class again in this biological opinion.

We have attached a table which describe the multiple-use classes the Bureau employs to provide program guidance. Within the table, we have enclosed our determinations when we conclude that specific program guidance will not affect desert tortoises or their critical habitat.

Elements

Twelve program elements provide more specific application of the multiple-use class guidelines for resources or activities that have been identified as a matter of public interest. Each element

has a set of goals and planned actions and a description of how these goals and actions will be implemented and monitored. Descriptions of the twelve elements follow; we omitted information that is not relevant to the desert tortoise, such as that regarding the protection of wetlands and riparian areas.

Cultural Resources Element: Historic and prehistoric remains that include, but are not limited to, paleontological resources, such as vertebrate and invertebrate fossils, historic and prehistoric routes, road side artifacts, and historic buildings are managed under this element. Typically, activities associated with this program element are designed to protect historic and prehistoric remains. The Bureau may undertake activities to stabilize or restore areas supporting cultural and paleontological resources. Locations supporting these resources may be monitored. The Bureau may also permit well-directed research at sites supporting these resources.

Native American Element: American Indian tribes have lived within the boundary of the California Desert Conservation Area for several thousand years and have left thousands of sites containing Native American artifacts such as burial remains, lithic scatter sites, and objects associated with historic or prehistoric hunting camps or long-term residences. Members of Native American tribes consider Bureau lands within the California Desert Conservation Area as part of their tribal homeland; they may wish to use these lands for a variety of activities that relate to hunting, religious worship, and the collection or cultivation of plant resources.

To protect historic and prehistoric artifacts and provide for the continued use of the desert landscape by Native Americans, the Bureau uses several tools, including land use designations (*e.g.*, Class C or L) to protect Native American artifacts and promote traditional land uses and customs and designation of areas of critical environmental concern and development of activity plans for site-specific management guidelines. The Bureau and different tribal governments also hold formal and informal discussions or communications on an irregular basis. Guidance for this element requires the Bureau to provide full consideration to Native American values in land use planning and management decisions; the Bureau has also committed to manage and protect these values whenever prudent and feasible.

Wildlife Element: The Bureau manages wildlife through a variety of mechanisms that include the development of habitat management plans or activity plans for areas of critical environmental concern, the designation of special management areas or vehicle routes, or the development of Sikes Act agreements. This element calls for baseline monitoring of certain wildlife populations and how use of the desert may be affecting this resource.

Vegetation Element: Vegetation management within the California Desert Conservation Area may include vegetation production; plant harvesting; management of rare, threatened, and endangered species; designation and management of unusual plant assemblages; and vegetation manipulation that is designed to promote the growth of desirable species such as jojoba (*Simmondsia californica*) or retard the spread of undesirable weedy plants such as salt cedar (*Tamarix ramosissima*). Vegetation production is typically a passive, naturally occurring process

that is influenced by seasonal growth patterns and precipitation rates. Management of rare, threatened, or endangered species typically includes survey work designed to determine their distribution, abundance, and status. Unusual plant assemblages are plant communities that are recognized for their unusual age, size, cover, or density, or that represent a disjunct distribution. Unusual plant assemblages also include relatively rare plant assemblages that are typically associated with wetland, riparian, limestone outcrop, or sand dune habitats. Designation of an unusual plant assemblage benefits vegetation communities because these areas receive additional consideration during impact analyses.

Wilderness Element: The California Desert Conservation Area Plan established guidelines for how the Bureau would conduct an inventory to determine which of its lands may be appropriate for wilderness designation, study the identified areas, and provide a report to Congress with its recommendations. This process has been completed. Additionally, Congress designated numerous other wilderness areas on Bureau lands in 1994 through the passage of the California Desert Protection Act. The Bureau's program guidance for managing wilderness includes maintenance of an enduring system of high-quality wilderness, maintenance of the plants and animals indigenous to the area, consideration of the needs of listed species and their habitats, and maintenance of stable watersheds. The Bureau's guidance allows some activities, such as maintenance of existing facilities to occur within wilderness areas. We will discuss those activities within the context of the specific guidance.

Wild Horses and Burros Element: The Bureau's goals with regard to wild horses and burros is to provide for their requirements in specified areas, protect them from unauthorized removal, remove all wild horses and burros from areas not designated for their retention, and removal of excess wild horses and burros from designated retention areas. To ensure that the number of burros and wild horses does not exceed appropriate numbers, the California Desert Conservation Area Plan notes that the Bureau would estimate the number of animals annually, monitor population dynamics, monitor the condition of vegetation in areas used by burros and wild horses, and adjust the number of animals based on the results of the monitoring. The Bureau's specific actions with regard to wild horses and burros within the Northern and Eastern Mojave Northern and Northern and Eastern Colorado planning areas are described later in this biological opinion in the sections that discuss those plans.

Livestock Grazing Element: The goals of this element are to use range management to maintain or improve vegetation to meet the needs of livestock and other objectives in the California Desert Conservation Area Plan; continue to use the California Desert Conservation Area for production of livestock to contribute to satisfying the need for food and fiber from public land; and maintain good and excellent range condition and improve poor and fair range condition by one condition class through the development and implementation of feasible grazing systems or allotment management plans. A key component of meeting the last goal is monitoring to determine where changes are necessary to meet resource objectives.

The California Desert Conservation Area Plan identified three types of range to attempt to manage grazing allotments. Perennial range usually occurs at elevations greater than 3,500 feet or in the northern portions of the California Desert Conservation Area. The production of vegetation and growing season are more consistent than elsewhere in the desert, except in extreme conditions; this consistency generally allows the Bureau to allocate forage without major changes from year to year.

Ephemeral range typically occurs below 3,500 feet in elevation where annual plants provide most of the forage. The production of annual forage can vary greatly from year to year, depending on many factors such as the amount and timing of rainfall, temperatures, and wind conditions. Sheep and cattle are managed differently. An interdisciplinary team determines when cattle would be allowed on ephemeral range each year; the forage needs of wildlife, visual needs, and the potential for erosion are considered in determining when cattle can be turned out on the range. An interdisciplinary team also determines when sheep would be allowed on the range. The amount of forage would need to be at least 200 pounds per acre of dry weight before sheep can graze; in habitat that the Bureau rated as highly crucial for desert tortoises, 350 pounds per acre of dry weight before sheep can graze.

Ephemeral/perennial range combines aspects of both types of grazing. A stocking rate is based first on the perennial forage and then is increased in years when climatic conditions produce sufficient quality and quantity of forage; the same methods employed to determine stocking rates on ephemeral allotments are employed on ephemeral/perennial ranges. The Bureau allows ephemeral use of ephemeral/perennial range through short-term authorizations.

Since the signing of the California Desert Conservation Area Plan, numerous factors have altered grazing programs in the California desert. The listing of the desert tortoise resulted in the completion of consultations, pursuant to section 7(a)(2) of the Act, that substantially altered the area grazed by sheep in the western Mojave Desert; the consultations did not alter cattle grazing to the same degree. The creation of the Mojave National Preserve in 1994 spurred a process of the acquisition of grazing privileges by conservation groups and the subsequent retirement of allotments by the National Park Service. At least some of these allotments were located in part on lands that continued to be managed by the Bureau after 1994; the Bureau reviewed the viability of the remaining portions of these allotments and, determining that some could no longer support a viable grazing operation, retired the allotment.

At least partially as a result of these actions, alternative grazing strategies have been developed for the Northern and Eastern Colorado and Northern and Eastern Mojave planning areas. The Bureau has also proposed an interim strategy for the area that would be included in the West Mojave Coordinated Management Plan and Coachella Valley planning areas. Details of these strategies are provided elsewhere in this biological opinion.

Recreation Element: This element includes activities that involve both motorized (*e.g.*, dune buggies, dirt bikes, all terrain vehicles, and other vehicles) and non-motorized recreation (*e.g.*,

target shooting, land sailing, rock hounding, hiking, sight seeing, hunting, camping, bird watching, and nature study). Motorized recreation includes point-to-point travel on existing routes as part of organized events or on a casual basis; it also involves free play within designated off-highway vehicle management areas. The element also provides for the development of trails and facilities to meet visitor service needs. The Bureau has a public outreach program that is intended to provide visitors with information on the desert and increase environmental awareness; a volunteer program and maps and brochures produced by the Bureau assist in this effort. Most of these elements are designed to provide accurate information on recreational opportunities and public facilities.

Motorized-Vehicle Access Element: Motorized vehicles are the primary tool that most visitors use to access various portions of the California Desert Conservation Area. A primary goal of the Bureau's management is to provide for constrained access for motorized vehicles in a manner that balances the needs of all users of the desert, private landowners, and other public agencies; another goal is to avoid adverse impacts to resources, to the degree possible, when designating or amending routes for access by motorized vehicles. The Bureau distinguishes between the use of mechanized vehicles for recreation purposes (*e.g.*, use of off-highway vehicles) and the use of vehicles to convey visitors to various areas of the desert. Because funding is limited and Bureau lands in the California Desert Conservation Area are extensive, the Bureau does not intensively patrol lands under its administration to ensure that the public complies with its vehicular access guidelines.

Motorized vehicular access on Bureau lands within the California Desert Conservation Area is managed with the aid of area and route designations. Area designations include "open," "closed," or "limited" use categories.

Areas that are classified as being "open" allow travel anywhere if the vehicle is driven in a responsible manner and private property rights are respected. Lands in this category include certain sand dunes and lake beds. Several off-highway vehicle management areas are designated as open. The Johnson Valley, Stoddard Valley, Spangler Hills, and El Mirage off-highway vehicle management areas are the only such areas that affect the desert tortoise; all are located in the western Mojave Desert. The Bureau and Service have completed formal consultation, pursuant to section 7(a)(2) of the Act, on these areas.

Vehicular use in "closed" areas is normally not permitted. Prohibitions against vehicular use typically apply to land in areas of critical environmental concern and special areas where provided for in management plans, certain sand dunes and dry lake beds, and select areas that are identified in the Bureau's Interim Critical Management Plan. This Interim Critical Management Plan established guidelines for vehicle use that are to remain in effect until routes are designated for the California Desert Conservation Area.

Vehicle use in "closed" areas may be permitted in certain cases. Fire, military, emergency, or law enforcement vehicles may be used in these areas for emergency purposes. Combat or combat

support vehicles may be used for national defense purposes. Finally, vehicle use may be expressly authorized by an agency head under a permit, lease, or contract; and when vehicles are used for official purposes by employees, agents, or designated representatives of the federal government or one of its contractors.

In “limited” use areas, motorized-vehicle access is allowed only on certain “routes of travel” which include roads, ways, trails, and washes. At a minimum, vehicle use is restricted to existing routes of travel. An existing route of travel is a route that existed before the approval of the California Desert Conservation Area Plan in 1980. These routes must have had a minimum width of 2 feet, showed substantial surface evidence of prior vehicle use, or, for washes, had a history of prior use.

Vehicle access in “limited” use areas is further modified by different land use classifications. Within Class I lands, those areas not “open” will be limited to use of existing routes, unless further limitations are necessary. Within Class M lands, access is limited to existing routes, unless the Bureau has determined that use on specific routes must be limited further. Within Class L areas, vehicle access is directed toward use of approved routes of travel. Approved routes include primary access routes intended for regular use and for linking desert attractions for the general public and secondary access routes intended to meet specific user needs. In areas of critical environmental concern where vehicle use is allowed, vehicle access will be managed under the guidelines for Class L lands. Vehicles are not normally allowed in wilderness areas. In areas that have not been 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.

Stopping, parking, and vehicular camping along “routes of travel” is limited to within 300 feet of a route. In some locations, specific parking or stopping areas may be signed “open” or “closed” to protect fragile or sensitive resources adjacent to the route or to provide a safe place to stop. The Bureau has proposed different standards for stopping, parking, and vehicular camping in the Northern and Eastern Mojave and Northern and Eastern Colorado plans; these differences will be discussed in the portions of this biological opinion which describe those plans.

Vehicle use in desert washes is governed by the local area designation. Vehicle use in desert washes is prohibited in areas that have been designated as being “closed.” Vehicle access in desert washes is permitted in areas that are designated as being “open.” In all “limited” use areas, vehicle use in desert washes will be controlled according to the travel restrictions that are applicable to the local multiple-use class category. In addition, washes may have travel restrictions (*e.g.*, speed limits or seasonal closure) that are designed to protect resources found in or along the wash or to minimize conflicts with other uses. Again, the Bureau has proposed different standards in the Northern and Eastern Mojave and Northern and Eastern Colorado plans.

The Bureau may post signs that describe the approved type of motorized vehicle access (open, closed, limited) that applies to a given area. The Bureau will also, with public involvement,

determine which routes in Class L or M lands need to be closed or limited in some way. Routes not approved for vehicle access would, in most instances, be obliterated, barricaded, signed, or otherwise marked.

In areas with mining operations, additional access needs are managed in accordance with the Bureau's Exploration and Mining-Wilderness Review Program regulations (43 CFR 3802) and the 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, competitive events, or communication sites, are permitted on an individual basis under Federal Land Policy and Management Act guidelines and other appropriate regulations.

Geology, Energy, Minerals Resources Element: Forty-six mineral commodities, including some of national and international importance, are known to exist in the California Desert Conservation Area. Substantial resources of geothermal energy are also present in the California desert. In the California Desert Conservation Area, approximately 360 exploration and mining plans of operation are active; approximately 22 of the mining and 5 to 10 of the exploration operations that are currently active have substantial development footprints.

Most exploration and development activity on public lands in the California Desert Conservation Area is guided and authorized under the General Mining Law of 1872 (30 U.S.C. 22 *et seq.*). Other applicable laws that regulate extraction and exploration for mineral resources include the Mineral Leasing Act of 1920 (30 U.S.C. 181 *et seq.*), Geothermal Steam Act of 1970 (30 U.S.C. 1001 *et seq.*), and the Materials Act of 1947, as amended (30 U.S.C. 701 *et seq.*). Collectively, these laws allow use of surface resources provided that the activities comply with appropriate federal and state laws and rules. Regulations developed pursuant to the Federal Land Policy and Management Act (43 CFR 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 and undue impairment to public lands and resources in the California Desert Conservation Area.

The Code of Federal Regulations addresses three distinct levels of mining law. Text appearing in the 1980 California Desert Conservation Area Plan has been revised to include changes that were addressed in the revised surface management regulations at 43 CFR 3809, published in the *Federal Register* on January 20, 2001, and amended in October 2001. The new regulations affect three distinct levels of mining operations based on surface disturbance and degree of impact in sensitive areas. These include casual use, notices, and plans of operation.

Casual Use: Casual use is defined as activities causing no or negligible surface disturbance to public lands or resources. Mining conducted under the casual use category includes the collection of geochemical, rock, soil, or mineral specimens using hand tools, hand panning, sluicing, and small portable suction dredges. It also generally includes use of metal detectors, gold spears and other battery-operated devices for sensing the presence of minerals, and hand and battery-operated drywashers. Casual use does not include use of mechanized earth-moving

equipment, truck-mounted drilling equipment, motorized vehicles in areas when designated as closed to off-road vehicles, chemicals, or explosives. Operators may use motorized vehicles for casual use activities provided the use is consistent with the regulations governing such use, off-road vehicle use designations contained in land-use plans, and the terms of temporary closures ordered by the Bureau. Because of the guidelines in the California Desert Conservation Area Plan, vehicles cannot be operated off roads as part of the casual use provisions of the mining regulations within habitat of the desert tortoise on Class C, L, M, and some I lands. Vehicles can be used under the casual use provisions for mining within the boundaries of the Bureau's designated off-highway vehicle management areas, which are managed as Class I and designated as open; driving off established routes is permitted within these areas, provided that the vehicle is operated in a safe manner. Because the casual use of vehicles for mining is prohibited throughout the California Desert Conservation Area except in areas where anyone can drive off established routes, we will not discuss this issue again in this biological opinion; off-road driving in open areas will be addressed in the discussion on recreation.

Casual use does not include "occupancy" or operations in areas where the cumulative effects of the activities result in more than negligible disturbance. Mining activity conducted under the casual use category does not require that the operator notify the Bureau or acquire its approval prior to conducting field activities. Operators must reclaim any casual-use disturbance that is created during their activities. If activities do not qualify as casual use, an operator must submit a notice or plan of operation, whichever is applicable.

Where the cumulative effects of casual use by individuals or groups have resulted in, or are reasonably expected to result in, more than negligible disturbance, the Bureau's State Director may establish specific areas as he or she deems necessary. In such cases, any individual or group intending to conduct activities under the mining laws must contact the Bureau 15 calendar days before beginning activities to determine whether the individual or group must submit a notice or plan of operation.

Notices: Operations under a notice are limited to exploration activity and involve surface disturbances greater than those associated with casual use. Actions associated with this category involve sampling, drilling, or developing surface workings to evaluate the type, extent, quantity, or quality of mineral values present. Exploration does not include activities where material is extracted for commercial use or sale.

Notices are not allowed on "any lands or waters known to contain federally proposed or listed threatened or endangered species or their proposed or designated critical habitat, unless [the Bureau] allows for other action under a formal land-use plan or threatened or endangered species recovery plan" (43 CFR 3809.11(c)(6)). None of the Bureau's land-use plans in the California Desert Conservation Area provide for the use of notices in habitat of threatened or endangered species. For these reasons, operations conducted under a notice are not likely to adversely affect the listed species under consideration in this biological opinion. We will not discuss notices further in this document.

Plan of Operation: A plan of operation approved by the Bureau is required before the initiation of exploration or mining activities that are greater than casual use or are acceptable under a notice. A plan of operation is required for any bulk sampling in which the operator will remove 1,000 tons or more of presumed ore for testing. A plan of operation is required for any operations causing surface disturbance greater than casual use in:

1. lands designated as Class C or L,
2. designated areas of critical environmental concern,
3. areas designated as “closed” (under regulations at 43 CFR 8364 and published in the *Federal Register*) to off-road vehicle use (meaning cross-country travel), and
4. any lands or waters known to contain federally proposed or listed threatened or endangered species or their proposed or designated critical habitat, unless the Bureau allows for other action under a formal land-use plan or recovery plan.

The plan of operation must contain a complete description of the entire mining operation. Pertinent information in the plan will include, but not be limited to, the location and spatial extent of the proposed mining operation, the type of equipment that will be used to extract ore, a map showing the location of the project area in sufficient detail for Bureau staff to be able to find it and the location of access routes intended to be used, improved, or constructed during the mining activity, the type of support facilities, location of drill sites (to the extent possible), measures to prevent unnecessary or undue degradation, and a reclamation plan for the land involved. The plan of operation must demonstrate that the proposed operations would not result in unnecessary or undue degradation, or undue impairment to public lands in the California Desert Conservation Area.

Under the mining regulations, lands affected by all operations will be reclaimed, regardless of whether the operations are conducted under the casual use category, under a notice, or under a plan of operation. Regulations for reclamation activities are provided in 43 CFR 3809.1-3(d) and include guidance regarding the development of access routes; disposal of tailings, dumps, deleterious materials or substances, and other waste produced by the operations; reclamation of the disturbed area; and inspection of the reclaimed area.

Approval of any plan of operation will be subject to changes or conditions that are necessary to meet the performance standards and to prevent unnecessary or undue degradation. The Bureau may require the operator to incorporate into the plan of operation other agency permits, final approved engineering designs and plans, or other conditions of approval. No operations may be conducted until the Bureau approves the plan of operation and receives the financial guarantee.

Extraction of geothermal, oil, and gas reserves may also take place on Bureau lands. Areas that may contain geothermal resources may be designated as a “known or potential geothermal resource area.”

All plans of operation are reviewed to ensure that the compliance guidelines of the National Environmental Policy Act are met. A plan of operations may be conditioned and required to

proceed with stipulations, modifications, or amendments that are developed through the process of environmental review. Plans are stipulated to bring the operation into compliance with the requirements regarding undue or unnecessary degradation and undue impairment, and to ensure protection of natural resources, reasonable reclamation, and proper conservation of the mineral resource. Policy directs that all operating plans and operations conducted on public land be inspected to ensure compliance with the terms of approval, regulations, and statutes.

Reclamation includes those activities associated with recontouring waste piles, reshaping pit walls and other excavations, removal of permanent or temporary facilities or structures, and soil placement, preparation, and in some cases, reseeding and maintenance of plants. Reclamation may also include any measures required to enhance or facilitate enhancement of previously disturbed areas or to modify areas to facilitate or accept displaced wildlife. As related to assuring a diverse and complete habitat as existed before operations, restoration of the area may be required. This normally entails inventory and consideration of the local biological features and the development of measures and time frames to ensure complete recovery, if required.

The Bureau requires that operators post a bond for surface disturbing operations conducted under a notice, plan of operation, or activity conducted under the Mineral Leasing or Materials Acts. The bond is required to cover liability for reclaiming disturbances approved in the plan of operation.

Mineral leasing, or any other activity, will require an environmental analysis pursuant to the National Environmental Policy Act unless exempted. Activities affecting a threatened or endangered species will not qualify for an exemption (*i.e.*, categorical exclusion) from this requirement. Mineral material sales in Class L and M lands are processed under 43 CFR 3600. If a new extraction area in a Class L area is expected to be larger than 5 acres in size, documentation pursuant to the National Environmental Policy Act will be prepared to cover the entire area of potential extraction.

No mining operations will be allowed if such activity would cause unnecessary or undue degradation.

Energy Production and Utility Corridors Element: The goals of the California Desert Conservation Area Plan for this element included the full implementation of a network of planning corridors to meet the projected utility needs to the year 2000, the identification of environmental constraints and siting procedures to be used by telecommunications firms and public agencies, and the identification of potential sites for geothermal development, wind energy parks, and powerplants. Sixteen planning corridors were identified in the California Desert Conservation Area Plan. They are intended to include new electrical transmission lines of 161 kilovolts or above, all pipelines with diameters greater than 12 inches, cables for interstate communications, and major aqueducts or canals for interbasin transfers of water. The corridors vary in width from 2 to 5 miles.

The California Desert Conservation Area Plan also identifies nine contingent corridors in the event transmission needs change. A contingent corridor can be activated with an amendment to the California Desert Conservation Area Plan.

Since the California Desert Conservation Area Plan was signed, the Bureau has amended it to approve two additional corridors, moved a portion of corridor BB, and deleted contingent corridor W and portions of corridors M and E. The Bureau has also designated new corridors, provided permission to construct gas and oil pipelines and fiber optic cables outside corridors, and activated portions of contingent corridors as project-specific amendments to the California Desert Conservation Area Plan.

The Bureau may also allow the siting of microwave tower sites, and conventional, solar, geothermal, wind, and nuclear power plants on Bureau lands within the California Desert Conservation Area.

Land-Tenure Adjustment Element: The goal of this element is to direct the acquisition and disposal of public lands to maximize the efficiency and consistency of their management. The objectives are to establish a program that complements the goals of other elements of the California Desert Conservation Area Plan through the consolidation of public lands with special management areas, such as areas of critical environmental concern, recreation areas where the use is intensive, and Class C areas; initiate a program for the disposal of public land through sale and exchange within the unclassified areas of the California Desert Conservation Area to reduce the need to manage isolated and fragmented parcels; sell, exchange, or lease public lands to meet the needs of other government agencies for public facilities; and cooperate with other public agencies to ensure that locally adopted land use plans are considered in any land tenure action.

At the time the California Desert Conservation Area Plan was signed, approximately 300,000 acres of scattered and isolated parcels of public lands were not included within one of the multiple-use categories. The Bureau proposed to retain or transfer to other appropriate agencies those unclassified parcels containing sensitive resources. Parcels with known mineral resources will be selectively retained. Prior to any disposal action, parcels would be inventoried for sensitive resources; parcels that do not support sensitive resources and would be appropriate for development would be sold or exchanged.

Special Management Areas

The third major management tool that is used for planning and management purposes in the California Desert Conservation Area Plan involves the designation of special management areas, such as areas of critical environmental concern or other special areas. Other areas which possess rare, unique, or unusual qualities of scientific, educational, cultural, or recreational significance may be designated as research natural areas, outstanding natural areas, other natural areas, national natural landmarks, national historical landmarks, national register of historic places, historic American engineering record, national scenic trails, national historic trails, man and biosphere reserves, and recreation lands.

After an area has been formally designated as an area of critical environmental concern or other special area, a site-specific activity plan is prepared. Activity plans vary in size and complexity depending on the nature of the resources and uses within the area of critical environmental concern. Activity plans clearly identify the ongoing management objectives for the area of critical environmental concern. The activity plan also includes a description of types of future uses, activities, or management practices considered compatible with the purposes of the area of critical environmental concern and a description of any existing incompatible uses, activities, or practices within the area. The plan also provides a schedule for implementing management goals. The activity plan includes the “details” of implementing the special management requirements, such as patrol schedules, posting signs, patrolling, and fencing specifications for facilities. Plans are prepared by interdisciplinary teams that consider all of the resources and uses present. Plans are subject to public review and environmental analysis.

Development, when wisely planned and properly managed, may occur in areas of critical environmental concern if the basic intent of protection of historic, cultural, scenic, or natural values is assured. In the case of certain wildlife and cultural resources, surface disturbances from mining, motorized-vehicle access, and grazing or other uses will be controlled. In some cases, fencing may be used to prevent unintentional impacts. Some valuable wildlife resources will require assistance in the way of reducing or eliminating competition for water sources or forage. Directional signs and visitor use areas will be developed and designated to encourage visitor cooperation, and informational facilities and interpretive programs will be instituted to increase visitors’ knowledge of and sensitivity to the protective needs of important natural and cultural resource values. Consultation with the adjacent land owners will be conducted when areas of critical environmental concern and their management may conflict with adjacent owners’ land uses and requirements.

Management prescriptions for areas of critical environmental concern may override the multiple-use class guidelines for the local area. The Bureau monitors existing conditions within an area of critical environmental concern to ensure that resource degradation is not occurring. Monitoring data will be used to guide corrective actions that may be necessary.

In summary, areas of critical environmental concern and other special areas are established to conserve specific resources; the presence of a listed taxon within such an area would prompt the development and implementation of management to conserve that taxon. Therefore, the program guidance for special management areas is not likely to adversely affect the desert tortoise or its critical habitat. The program guidance for this basic component of the California Desert Conservation Area Plan will not be discussed further in this biological opinion.

Management Actions associated with the Proposed Northern and Eastern Mojave Bioregional Plan

One of the goals of the Northern and Eastern Mojave bioregional plan is recovery of the desert tortoise. To achieve this goal, the Bureau proposes to identify the boundaries of desert wildlife

management areas and multiple-use classes, implement a general management strategy, manage vehicles, livestock grazing, and burros, and acquire private lands. The following section provides general summaries of the aspects of the preferred alternative that are relevant to the desert tortoise. Details of this alternative are contained in the draft environmental impact statement (Bureau 2001b).

The Bureau proposes to create 3 areas of critical environmental concern, totaling 312,485 acres, to form 3 desert wildlife management areas for the desert tortoise. (“Desert wildlife management area” is a concept that was proposed in the recovery plan for the desert tortoise (Service 1994c); more information on this concept is located in the Status of the Species section of this biological opinion.) The locations and acreage of the desert wildlife management areas would be:

Desert Wildlife Management Areas	Acreage
Piute-Fenner	173,850
Ivanpah Valley	36,780
Shadow Valley	101,355
Total	312,485

These desert wildlife management areas would include all critical habitat in the Northern and Eastern Mojave planning area except for approximately 12,700 acres west of Turquoise Mountain Road in the Shadow Valley unit and 485 acres adjacent to the community of Nipton in the Ivanpah unit. (By memorandum dated April 29, 2002, the Bureau proposed to remove approximately 60 acres of private land and 425 acres of public lands from the Ivanpah Valley Desert Wildlife Management Area; the acreage in the table reflects this change. The Bureau may elect, at some future time, to exchange these public lands for private lands within this desert wildlife management area located within the Mojave National Preserve (Bureau 2002c).) All desert tortoise habitat within the desert wildlife management areas would be considered as Category I; outside of the desert wildlife management areas, it would be considered as Category III. (The Bureau adopted categories of desert tortoise habitat to assist in its management of the species; more information on this concept is located in the Status of the Species section of this biological opinion.) Approximately 30,010 acres of Class M lands in this planning area would be changed to Class L.

The Bureau’s general management strategy contains several prominent components. First, the Bureau proposes to enter into a consultation that would address the effects on the desert tortoise of all projects that would result in a surface disturbance of 100 acres or less. Projects that would result in more than 100 acres of disturbance, require the preparation of an environmental impact statement, or require the amendment of the California Desert Conservation Area Plan would necessitate a separate consultation. As discussed in the Consultation History section of this

document, the Service has notified the Bureau that we did not consider this strategy to provide adequate project-specific review. The agencies will continue to discuss this issue after issuance of this biological opinion.

Cumulative ground disturbance would be limited to one percent of the public lands in each of the proposed desert wildlife management areas. Appendix F of the draft environmental impact statement for the Northern and Eastern Mojave planning area describes the rationale for this approach and how this limit would be monitored and managed. The cumulative total of the amount of disturbed lands would be reduced by the acreage of any restored lands that meet specific criteria.

The Bureau would adopt management prescriptions and mitigation measures to reduce the effects of proposed projects on the desert tortoise. These prescriptions and measures would include: reclaiming habitat that is lost or disturbed by new projects; using specific design features to minimize the effects of projects on the desert tortoise; attempting to use seasonal restrictions to protect desert tortoises; using disturbed areas to the degree possible for new facilities; and requiring a plan of operation for all mining activities involving surface disturbance of perennial vegetation, use of vehicles off of designated open roads and trails, or use of mechanized earthmoving equipment or explosives. The Bureau would also continue to require project proponents to compensate for loss or disturbance of habitat; the compensation ratio for all projects within Category I habitat would be five to one. Appendix A of the draft environmental impact statement describes these measures in greater detail.

The final component of the general management strategy is the implementation of a management program for the common raven (*Corvus corax*). This program would include research, alteration of habitat of common ravens, and removal of specific common ravens. New facilities or operations would be reviewed to determine whether they had potential to increase the number of common ravens; if the review indicates that such a potential exists, the Bureau would require the project or operation to be modified to reduce or eliminate the opportunity for common ravens to increase in number. Appendix A of the draft environmental impact statement contains the detailed management plan for common ravens.

To manage vehicles within desert wildlife management areas, the Bureau proposes to designate routes of travel. Routes not approved for vehicle access would, in most instances, be obliterated, barricaded, signed, or marked, as appropriate; the technique used would depend on the specific circumstances. Parking and camping would be allowed within 100 feet of the centerline of routes. Where navigable washes are designated as open or limited routes, parking and camping would be allowed only within the banks of the wash. Signing and interpretive kiosks would be installed.

The Bureau would use regional standards of public land health and guidelines for grazing to manage livestock grazing. The standards express the level of physical and biological condition or degree of function required for healthy, sustainable public lands; the guidelines for grazing

management are the types of activities and practices determined to be appropriate to ensure that the standards can be met or that substantial progress can be made towards meeting them. Activities would be managed in accordance with the regional standards by ensuring that soils, native species, riparian, wetland, and stream function, and water quality are in proper functioning condition. The standards for soils and native species are particularly appropriate for the desert tortoise. Soils should exhibit infiltration and permeability rates that are appropriate to soil type, climate, geology, and past uses. The condition of the soils is indicated by:

- the cover and ground cover of the plant communities;
- the diversity of plant species with a variety of root depths;
- the presence of litter, organic matter, and soil crusts; and
- rates of wind and water erosion; and soil permeability, nutrient cycling, and water infiltration.

All indicators should be appropriate for the local environment.

The standards also call for healthy, productive, and diverse habitats for native species. Indicators for the health of native species include:

- the presence of photosynthetic and ecological processes;
- plant vigor, nutrient cycle, and energy flow in a manner that ensures maintenance of desirable plants and their reproduction and recruitment;
- production of sufficient litter;
- appropriate age class distribution of plants and animals;
- distributions and cover of plant species and their habitats that allow for reproduction and recovery from localized catastrophic events;
- an acceptable level of alien and noxious plants and animals;
- evidence of appropriate natural disturbances; and
- populations and habitats that are sufficiently distributed and healthy to prevent the need for listing and to promote the conservation and recovery of sensitive species.

The draft environmental impact statement contains more details regarding the regional standards.

The Bureau would also use elements of the California Desert Conservation Area Plan, allotment management plans, and terms and conditions from existing biological opinions to manage livestock grazing within the Northern and Eastern Mojave planning area. The Bureau proposes to allow voluntary relinquishment of grazing leases and related authorizations within desert wildlife management areas; upon such relinquishment, the allotments would be retired. Cattle would be removed from desert wildlife management areas when ephemeral forage production is less than 230 pounds per acre (air dry weight) from March 15 through June 15 (Bureau 2002c). Ephemeral cattle allotments would be terminated; ephemeral authorizations for ephemeral/perennial allotments would be terminated. Temporary non-renewable grazing would not be authorized. A final grazing strategy would be developed within a year and implemented within two years; it will provide details regarding the area of removal, natural movements by cattle, existing and potential improvements, and other constraints of cattle management. The potential effects on the desert tortoise of implementing the grazing strategy will be evaluated in future biological opinions; this strategy will not be discussed further in this biological opinion.

The Bureau would remove all burros from the Clark Mountain Herd Management Area, which include the proposed Shadow Valley Desert Wildlife Management Area (Morgan pers. comm.). The final component of the Bureau’s general strategy for recovering the desert tortoise in the Northern and Eastern Mojave planning area is to acquire all private lands in desert wildlife management areas from willing sellers.

Appendix B of the draft environmental impact statement for the Northern and Eastern Mojave planning area contains the implementation plan for the actions proposed by the Bureau. Anticipated time frames for completing activities vary greatly. Some time frames are established by regulation. Other activities would occur annually; many activities, such as implementing the routes of travel designations, would require several years to complete.

Management Actions associated with the Proposed Northern and Eastern Colorado Bioregional Plan

A specific purpose of the Northern and Eastern Colorado bioregional plan is to amend or create land use plans and management prescriptions to recover the desert tortoise (Bureau and California Department of Fish and Game 2001). The goals and many of the management proposals of the Northern and Eastern Mojave and Northern and Eastern Colorado plans are similar; however, the environmental impact statements for the two plans take substantially different approaches in their organization. Specifically, in the Northern and Eastern Colorado plan, the Bureau identifies issues and then proposes one or more amendments to the California Desert Conservation Area Plan to address the issue. The following section provides general summaries of the aspects of the preferred alternative that are relevant to the desert tortoise.

Amendment 1 would be the adoption of regional standards of public land health and guidelines for grazing management. The standards and guidelines are the same for both the Northern and Eastern Colorado and Northern and Eastern Mojave plans.

Amendments 2, 3, and 4 directly relate to the recovery of the desert tortoise. Through Amendment 2, the Bureau proposes to create two desert wildlife management areas for the desert tortoise that would be managed as areas of critical environmental concern; approximately 1,694,920 acres would be included in these desert wildlife management areas. The locations and acreage of the desert wildlife management areas would be:

Desert Wildlife Management Areas	Acreage
Chemehuevi	874,843
Chuckwalla	820,077
Total	1,694,920

All desert tortoise habitat within the desert wildlife management areas would be considered as Category I; outside of the desert wildlife management areas, it would be considered as Category III. All Class M lands in the desert wildlife management areas would be changed to Class L.

Amendment 3 is directed at the manner in which livestock grazing is managed. The portion of the Lazy Daisy Allotment which supports the highest density of desert tortoises will be eliminated; the allotment would be reduced from 332,886 to 311,280 acres. The Bureau will terminate authorization of forage allocation and range improvements and eliminate the allotment designation in the California Desert Conservation Area Plan if the lessee voluntarily relinquishes all grazing use authorizations.

The terms and conditions of the biological opinion on cattle grazing (Service 1994b) will be added to the grazing element of the California Desert Conservation Area Plan as permanent requirements for cattle and sheep grazing. The terms and conditions will be implemented in both critical and non-critical habitat of the desert tortoise.

Authorization of ephemeral use will be terminated in the Lazy Daisy and Chemehuevi allotments. This amendment will result in the Lazy Daisy Allotment being managed as a "perennial only" allotment and in the termination of the Chemehuevi Allotment. Temporary non-renewable authorizations within desert wildlife management areas will be terminated on the Lazy Daisy Allotment.

Utilization of perennial plants on the Lazy Daisy Allotment may not exceed the values shown in the following table (Bureau 2002c).

Range Type	Percent Use of Key Perennial Species	
	Poor -Fair Range Condition or Growing Season	Good - Excellent Range Condition or Dormant Season
Mojave/Sonoran desert scrub	25	40
Salt desert shrubland	25	35
Semidesert grass and shrubland	30	40
Sagebrush grassland	30	40
Mountain shrubland	30	40
Pinyon-juniper woodland	30	40

A grazing strategy will be developed to address competition for forage between cattle and desert tortoises for any allotment that is partially or entirely within a desert wildlife management area. Specifically, when forage production is less than 230 pounds per acre, cattle will be substantially removed from the desert wildlife management area from March 15 through June 15 (Bureau 2002c). ('Substantial' removal means that most cattle will be removed but some individuals may wander across boundaries and others may be missed during round-ups. The differences in removal dates between the eastern and western portions of the desert reflects an effort on the part of the Bureau to maintain the same schedule as that of the Mojave National Preserve; this scheduling is necessary for ranchers who run cattle on both public and National Park Service lands.) The grazing strategy will be developed within a year and implemented within two years; it will provide details regarding the area of removal, natural movements by cattle, existing and potential improvements, and other constraints of cattle management. The Bureau would install fences, cattle guards, water troughs and reservoirs, wind mills, water storage tanks, pipelines, and corrals to assist in implementing this strategy. The potential effects on the desert tortoise of implementing the grazing strategy will be evaluated in future biological opinions; this strategy will not be discussed further in this biological opinion.

All existing cattle guards will be modified to prevent entrapment of desert tortoises. New cattle guards will be designed to prevent entrapment.

Amendment 4 would change the point, from the edge to the centerline of the road, from which the distance is measured that vehicles are allowed to travel off road to stop, camp, or park. The slight change will assist in providing consistency in enforcing off road stopping, camping, and parking. This change is not likely to adversely affect and may benefit the desert tortoise. We will not discuss this issue again in the biological opinion.

Amendments 5 through 9 are related to managing other sensitive species, including the desert bighorn (*Ovis canadensis nelsoni*). For example, the Bureau proposes to eliminate the Ford Dry Lake Allotment and reduce the area of the Rice Valley Allotment from 85,565 to 76,301 acres. Generally, the measures are intended to protect sensitive species from the effects of human activities; additionally, many of these species occupy habitats in which desert tortoises are scarce or absent. Consequently, we have determined that these amendments are not likely to adversely affect the desert tortoise or its critical habitat. With one exception, we will not discuss these amendments further in this biological opinion.

The Bureau proposes to continue to construct, improve, and maintain new and existing natural and artificial water sources and exclosures around them where required. The Bureau will consult with the Service on proposed projects that occur within habitat of the desert tortoise (Bureau 2002b).

Through Amendment 10, the Bureau would re-align the existing herd areas for burros in two sections. The Chemehuevi Herd Area and Herd Management Area would occupy approximately 147,630 acres east of Highway 95 and north of Highway 62; a current management level for

burros of 108 would be established in this area. The Chocolate/Mule Mountains Herd Area and Herd Management Area would occupy approximately 223,542 acres southeast of Highway 78; a current management level for burros of 108 would be established in this area. These current management levels would remain in effect until appropriate management levels are established through monitoring of the habitat and populations. Any water developments or exclosures needed to manage the new herd areas would be considered in future planning documents and consultations. The Bureau also proposes to eliminate the Picacho Herd Management Area for horses.

Through Amendment 11, the Bureau proposes changes to organized competitive vehicle events to protect sensitive resources. Specifically, the Bureau proposes to eliminate the Parker 400 competitive recreation corridor. This corridor is located in San Bernardino County, north of Route 62, and crosses important habitat of the desert tortoise. The elimination of this corridor is not likely to adversely affect and, in fact, would benefit the desert tortoise. We will not discuss this issue again in the biological opinion.

The Bureau also proposes to continue to allow competitive motorcycle and all-terrain vehicle events along the Johnson Valley to Parker route. The route begins in the Johnson Valley Off-highway Vehicle Management Area and then travels east to the north of the Marine Corps Air Ground Combat Center and through the Northern and Eastern Colorado planning area. The route avoids crossing any desert wildlife management areas in the Northern and Eastern Colorado planning area. Competitive events on this route would be permitted as described in the California Desert Conservation Area Plan, with several exceptions that are fully described in the draft environmental impact statement. Several measures that govern races in this corridor affect the desert tortoise within the Northern and Eastern Colorado planning area. The maximum number of participants in any one event is 500. The maximum width of the race corridor outside of the Johnson Valley Off-highway Vehicle Management Area is 200 feet (100 feet from the centerline of an existing route that establishes the corridor). When the route establishes the boundaries of a desert wildlife management area, wildlife habitat management area, or wilderness, the race corridor must not extend beyond 100 feet from the centerline of the existing route opposite these areas. Pit areas will be limited to locations identified in the Northern and Eastern Colorado plan. Cross-country portions of the corridor will not be available to casual use. All access to the route by race officials must be by the established corridor and other routes available to the casual user.

Amendment 12 would require that motorized vehicle access be managed in accordance with current guidelines for Class L lands, irrespective of the multiple-use class; Class C lands (wilderness) and areas designated "open" to vehicle use would not be managed in the same manner. All existing routes that have been inventoried and mapped, including navigable washes that have been individually identified, would be designated "open" for vehicle use. Exceptions are where such use has already been limited or prohibited through publication of a final notice in the *Federal Register*, specific biological parameters proposed through this plan are applied to minimize disturbance of wildlife and significant disruption of wildlife habitats by motorized

vehicle use, or restrictions on use are required to protect other resource values, to protect and promote the safety of all users of public lands, and to minimize conflicts among various users of public lands. All navigable washes not individually inventoried and mapped would be designated open, as a class, except in “washes closed zones.” Designations could change depending upon the results of monitoring of use and impacts. This management would result in approximately 734 miles of open routes within the Chemehuevi Desert Wildlife Management Area, 960 miles within the Chuckwalla Desert Wildlife Management Area, and an additional 3,049 miles within the planning area outside of the desert wildlife management areas (Bureau 2002b).

Stopping, parking, and vehicle camping would be allowed within 100 feet of the centerline of routes within areas of critical environmental concern. Outside of these areas, such activities would be allowed within 300 feet of the centerline of routes.

Through Amendment 13, the Bureau proposes to change the manner in which distance is measured from a road for stopping, parking off a road, and camping. Currently, the Bureau measures the distance from the edge of the road. Under the new proposal, the Bureau would measure the distance from the centerline of the road. This administrative change may assist the Bureau in enforcing compliance with the distance from a road which vehicles may travel to stop, camp, or park. This administrative change will affect the desert tortoise; we will not discuss it further in this biological opinion.

Amendment 14 incorporates wilderness areas into the California Desert Conservation Area Plan. Remnant parcels will be assigned to the multiple-use class of the adjacent non-wilderness area, unless they are large enough to be evaluated on their individual merits; within desert wildlife management areas, remnants will always be assigned to Class L. Remnant parcels are those portions of public lands of the previous multiple-use class designations that extend beyond the boundaries of the wilderness areas created by Congress on Bureau lands in 1994. The incorporation of wilderness areas into the California Desert Conservation Area Plan is an administrative action and will not affect desert tortoises. The conversion of the multiple-use class of remnant parcels to Class L, the most protective class of lands except for wilderness, is not like to affect the desert tortoise or its critical habitat in any manner that will be not considered in other portions of this biological opinion. Consequently, we will not discuss Amendment 14 again in this document.

The Bureau has also proposed several other actions as part of the Northern and Eastern Colorado plan. The Bureau will actively seek to acquire non-federal lands or interests in lands within wilderness, desert wildlife management areas, and wildlife habitat management areas through purchase, donation, or exchange. In total, approximately 540,200 acres of private lands occur within the planning area that are suitable for acquisition based on their location within wilderness, desert wildlife management areas, and wildlife habitat management areas. The acquisition of lands, particularly within desert wildlife management areas, is likely to benefit the desert tortoise because these lands would then be subject to the provisions of sections 7(a)(1) and 7(a)(2) of the Act and be eligible for inclusion in any habitat restoration plans, if necessary.

The Bureau also proposes to dispose of public lands outside of wilderness, desert wildlife management areas, and wildlife habitat management areas that do not support known occurrences of rare plants, springs, bats, or other special status species and where the disposal will support the consolidation and location of private land. A goal of this disposal is to promote private development and increase the tax base for local governments.

The Bureau proposes to limit the amount of new disturbance within each desert wildlife management area to one percent of the federal land. When it does permit disturbance or loss of habitat, the Bureau would require permittees to compensate by acquiring 5 acres of desert tortoise habitat for each acre that is disturbed or lost; alternatively, funds equivalent to the amount necessary to purchase such lands may be used for restoration or enhancement of habitat. The peripheries of Desert Wildlife Management Areas will be fenced, signed, or patrolled to ensure that conflicts with adjacent land uses are controlled.

STATUS OF THE SPECIES

The desert tortoise is a large, herbivorous reptile found in portions of the California, Arizona, Nevada, and Utah deserts. It also occurs in Sonora and Sinaloa, Mexico. In California, the desert tortoise occurs primarily within the creosote, shadscale, and Joshua tree series of Mojave desert scrub, and the lower Colorado River Valley subdivision of Sonoran desert scrub. Optimal habitat has been characterized as creosote bush scrub in which precipitation ranges from 2 to 8 inches, diversity of perennial plants is relatively high, and production of ephemerals is high (Luckenbach 1982, Turner and Brown 1982, Schamberger and Turner 1986). Soils must be friable enough for digging of burrows, but firm enough so that burrows do not collapse. In California, desert tortoises are typically associated with gravelly flats or sandy soils with some clay, but are occasionally found in windblown sand or in rocky terrain (Luckenbach 1982). Desert tortoises occur in the California desert from below sea level to an elevation of 7,300 feet, but the most favorable habitat occurs at elevations of approximately 1,000 to 3,000 feet (Luckenbach 1982, Schamberger and Turner 1986).

Desert tortoises are most active in California during the spring and early summer when annual plants are most common. Additional activity occurs during warmer fall months and occasionally after summer rain storms. Desert tortoises spend most of the remainder of the year in burrows, escaping the extreme conditions of the desert. Further information on the range, biology, and ecology of the desert tortoise can be found in Burge (1978), Burge and Bradley (1976), Hovik and Hardenbrook (1989), Luckenbach (1982), Weinstein *et al.* (1987), and Service (1994c).

Food resources for desert tortoises are dependent on the availability and nutritional quality of annual and perennial vegetation, which is greatly influenced by climatic factors, such as the timing and amount of rainfall, temperatures, and wind (Beatley 1969, 1974, Congdon 1989, Karasov 1989, Polis 1991 in Avery 1998). In the Mojave Desert, these climatic factors are typically highly variable; this variability can limit the desert tortoise's food resources.

Desert tortoises will eat many species of plants. However, at any time, most of their diet often consists of a few species (Nagy and Medica 1986, Jennings 1993 in Avery 1998). Additionally, their preferences can change during the course of a season (Avery 1998) and over several seasons (Esque 1994 in Avery 1998). Possible reasons for desert tortoises to alter their preferences may include changes in nutrient concentrations in plant species, the availability of plants, and the nutrient requirements of individual animals (Avery 1998). In Avery's (1998) study in the Ivanpah Valley, desert tortoises consumed primarily green annual plants in spring; cacti and herbaceous perennials were eaten once the winter annuals began to disappear. Medica *et al.* (1982 in Avery 1998) found that desert tortoises ate increased amounts of green perennial grass when winter annuals were sparse or unavailable; Avery (1998) found that desert tortoises rarely ate perennial grasses.

Desert tortoises can produce from one to three clutches of eggs per year. On rare occasions, clutches can contain up to 15 eggs; most clutches contain 3 to 7 eggs. Multi-decade studies of the Blanding's turtle (*Emydoidea blandingii*), which, like the desert tortoise, is long lived and matures late, indicate that approximately 70 percent of the young animals must survive each year until they reach adult size; after this time, annual survivorship exceeds 90 percent (Congdon *et al.* 1993). Research has indicated that 50 to 60 percent of young desert tortoises typically survive from year to year, even in the first and most vulnerable year of life. We do not have sufficient information on the demography of the desert tortoise to determine whether this rate is sufficient to maintain viable populations; however, it does indicate that maintaining favorable habitat conditions for small desert tortoises is crucial for the continued viability of the species.

Desert tortoises typically hatch from late August through early October. At the time of hatching, the desert tortoise has a substantial yolk sac; the yolk can sustain them through the fall and winter months until forage is available in the late winter or early spring. However, neonates will eat if food is available to them at the time of hatching; when food is available, they can reduce their reliance on the yolk sac to conserve this source of nutrition. Neonate desert tortoises use abandoned rodent burrows for daily and winter shelter, which are often shallowly excavated and run parallel to the surface of the ground.

Neonate desert tortoises emerge from their winter burrows as early as late January to take advantage of freshly germinating annual plants; if appropriate temperatures and rainfall are present, at least some plants will continue to germinate later in the spring. Freshly germinating plants and plant species that remain small throughout their phenological development are important to neonate desert tortoises because their size prohibits access to taller plants. As plants grow taller during the spring, some species become inaccessible to small desert tortoises.

Neonate and juvenile desert tortoises require approximately 12 to 16 percent protein content in their diet for proper growth. Desert tortoises, both juveniles and adults, seem to selectively forage for particular species of plants with favorable ratios of water, nitrogen (protein), and potassium. The potassium excretion potential model (Oftedal 2001) predicts that, at favorable ratios, the water and nitrogen allow desert tortoises to excrete high concentrations of potentially

toxic potassium, which is abundant in many desert plants. Oftedal (2001) also reports that variation in rainfall and temperatures cause the potassium excretion potential index to change annually and during the course of a plant's growing season. Therefore, the changing nutritive quality of plants, combined with their increase in size, further limits the forage available to small desert tortoises to sustain their survival and growth.

In summary, the ecological requirements and behavior of neonate and juvenile desert tortoises are substantially different than those of subadults and adults. Smaller desert tortoises use abandoned rodent burrows, which are typically more fragile than the larger ones constructed by adults. They are active earlier in the season. Finally, small desert tortoises rely on smaller annual plants with greater protein content to be able to gain access to food and to grow.

The Mojave population of the desert tortoise includes those animals living north and west of the Colorado River in the Mojave Desert of California, Nevada, Arizona, southwestern Utah, and in the Colorado Desert in California. On August 4, 1989, the Service published an emergency rule listing the Mojave population of the desert tortoise as endangered (54 *Federal Register* 32326). In its final rule, dated April 2, 1990, the Service determined the Mojave population of the desert tortoise to be threatened (55 *Federal Register* 12178). The Service designated critical habitat for the desert tortoise in portions of California, Nevada, Arizona, and Utah in a final rule, published February 8, 1994 (59 *Federal Register* 5820).

Critical habitat is designated by the Service to identify the key biological and physical needs of the species and key areas for recovery, and focuses conservation actions on those areas. Critical habitat is composed of specific geographic areas that contain the biological and physical attributes that are essential to the species' conservation within those areas, such as space, food, water, nutrition, cover, shelter, reproductive sites, and special habitats. These features are called the constituent elements of critical habitat. The specific constituent elements of desert tortoise critical habitat are: sufficient space to support viable populations within each of the six recovery units and to provide for movement, dispersal, and gene flow; sufficient quality and quantity of forage species and the proper soil conditions to provide for the growth of these species; suitable substrates for burrowing, nesting, and overwintering; burrows, caliche caves, and other shelter sites; sufficient vegetation for shelter from temperature extremes and predators; and habitat protected from disturbance and human-caused mortality.

The recovery plan for the desert tortoise is the basis and key strategy for recovery and delisting of the desert tortoise. The plan divides the range of the desert tortoise into six distinct population segments or recovery units and recommends the establishment of 14 desert wildlife management areas throughout the recovery units. Within each desert wildlife management area, the recovery plan recommends implementation of reserve level protection of desert tortoise populations and habitat, while maintaining and protecting other sensitive species and ecosystem functions. The design of desert wildlife management areas should follow accepted concepts of reserve design. As part of the actions needed to accomplish recovery, land management within all desert wildlife management areas should restrict human activities that negatively affect desert tortoises (Service 1994c).

Four recovery units identified in the recovery plan are located in California. Eight critical habitat units are also located in California. The recovery units in which the critical habitat units are found and their acreages are listed in the following table.

Recovery Unit	Critical Habitat Unit	Acreage
Western Mojave		
	Fremont-Kramer	518,000
	Superior-Cronese	766,900
	Ord-Rodman	253,200
	Pinto Mountain	171,700
Northern Colorado		
	Chemehuevi	937,400
Eastern Colorado		
	Chuckwalla	1,020,600
Eastern Mojave		
	Ivanpah Valley	632,400
	Piute-Eldorado	453,800

The desert tortoise was listed in response to loss and degradation of habitat caused by numerous human activities including urbanization, agricultural development, military training, recreational use, mining, and livestock grazing. The loss of individual desert tortoises to increased predation by common ravens, collection by humans for pets or consumption, collisions with vehicles on paved and unpaved roads, and mortality resulting from diseases also contributed to the Service's listing of this species.

ENVIRONMENTAL BASELINE

Four recovery units for the desert tortoise occur in the California Desert Conservation Area. The Western Mojave Recovery Unit extends from approximately Olancho and the northern Panamint Valley in the north south to the middle of Joshua Tree National Park; it also extends from the Sierra Nevada and Tehachapi Mountains in the west east to Death Valley and the eastern side of Joshua Tree National Park. The Eastern Mojave Recovery Unit lies east of Death Valley and extends from the Nevada border in the north south to Interstate 40; the Bureau considers the small portion of the Northeastern Mojave Recovery Unit that extends into Ivanpah

Valley as part of the Eastern Mojave Recovery Unit for its planning purposes. The Northern Colorado Recovery Unit extends from Interstate 40 south, almost to Interstate 10 and from the eastern portions of Joshua Tree National Park east to the Colorado River. The Eastern Colorado Recovery Unit extends from just north of Interstate 10 south to the Mexico border near Yuma, Arizona; the Salton Sink and Imperial Valley form the western edge of this recovery unit, which extends east to the Colorado River.

The following descriptions of the recovery units in California are from the recovery plan for the desert tortoise (Service 1994c) and the Bureau's biological assessment (Bureau 2001). The Western Mojave Recovery Unit is exceptionally heterogeneous and large with distinct climatic and vegetation characteristics in its western, central, and southern regions. The most pronounced difference between this and other recovery units is in timing of rainfall and the resulting vegetation. Most rainfall in the Western Mojave Recovery Unit occurs in fall and winter and produces winter annuals. Desert tortoises are active above ground primarily in the spring so they can consume annual plants that germinated in response to winter rains. In the western Mojave Desert, desert tortoises occur primarily in valleys and on bajadas and rolling hills in saltbush, creosote bush, and scrub steppe communities.

The region covered by the Eastern Mojave Recovery Unit receives both winter and summer rains. In response to the bimodal pattern of rainfall, production of annual plants occurs in spring and in late summer and early autumn; desert tortoises are often active during both periods if annual plants and perennial grasses are present.

Desert tortoises in the Northern Colorado Recovery Unit also experience two active periods because of winter and summer rains. They occasionally inhabit the broad, well-developed washes that are found in this region. The climate is somewhat warmer than in the other recovery units, with only 2 to 12 freezing days per year.

Desert tortoises in the Eastern Colorado Recovery Unit are active longer than elsewhere in California because of the mild winters and substantial summer precipitation. They are found in well-developed washes, desert pavements, piedmonts, and rocky slopes characterized by relatively species-rich succulent scrub, creosote bush scrub, and blue palo verde-ironwood-smoke tree communities; these communities tend to support a higher degree of plant diversity than those in the Western Mojave Recovery Unit.

During the summers of 1998 and 1999, biologists associated with the West Mojave Coordinated Management Plan surveyed over 1,200 transects over a large area of the western Mojave Desert. These transects failed to detect sign of desert tortoises in areas where desert tortoises were previously considered to be common. Although these data have not been fully analyzed and compared with previously existing information, they strongly suggest that the number of desert tortoises has declined substantially over large areas of the western Mojave Desert.

Between 1971 and 1980, 27 plots were established in California to study the desert tortoise; 15 of these plots were used by the Bureau to monitor desert tortoises on a long-term basis (Berry 1999). Generally, the plots were visited at roughly 4-year intervals to determine the numbers of desert tortoises they supported. Desert tortoises found on these plots during the spring surveys were registered; that is, they were marked so they could be identified individually during subsequent surveys.

At the Chemehuevi Valley and Wash plot, 257 and 235 desert tortoises were registered in 1988 and 1992, respectively (Berry 1999). During the 1999 spring survey, only 38 live desert tortoises were found. The shell and skeletal remains of at least 327 desert tortoises were collected; most, if not all, of these animals died between 1992 and 1999. The frequency of shell lesions and nutritional deficiencies appeared to be increasing and may be related to the mortalities. The Chemehuevi Valley and Wash plot is located within the Northern Colorado Recovery Unit and the Chemehuevi Critical Habitat Unit.

At the Goffs plot, 296, 220, and 249 desert tortoises were registered in 1980, 1990, and 1994, respectively (Berry 2000). In 2000, only 30 live desert tortoises were found. The shell and skeletal remains of approximately 393 desert tortoises were collected; most of these animals died between 1994 and 2000. Most of the desert tortoises exhibited signs of shell lesions; three salvaged desert tortoises showed abnormalities in the liver and other organs and signs of shell lesions. None of the three salvaged desert tortoises tested positive for the upper respiratory tract disease. However, this small sample size does not allow conclusions about the population as a whole. The Goffs plot is located within the Eastern Mojave Recovery Unit and the Piute-Eldorado Critical Habitat Unit.

Large numbers of shells have also been observed in Ward Valley (Northern Colorado Recovery Unit, Chemehuevi Critical Habitat Unit) during the 1990s. During the 1980s, declines were observed on the Chuckwalla Bench and within the Chocolate Mountains Aerial Gunnery Range, both of which are located in the Eastern Colorado Recovery Unit and the Chuckwalla Critical Habitat Unit (Berry *et al.* 2001).

EFFECTS OF THE ACTION

We conducted our analysis in a stepwise fashion. We begin our analysis with a general description of how various anthropogenic activities could affect the desert tortoise and its habitats.

We then reviewed how the overall management direction provided by the California Desert Conservation Area Plan, as amended and modified, could affect the desert tortoise. The California Desert Conservation Area Plan provides program guidance to the Bureau for its activities within the California desert; the multiple-use classes and elements of the California Desert Conservation Area Plan direct how the Bureau balances resource conservation and use. The California Desert Conservation Area Plan also provides the fundamental authorization for

many ongoing activities, such as casual recreational use, that do not require site-specific analysis by the Bureau. We did not analyze the effects of any site-specific future actions. As the California Desert Conservation Area Plan notes, site-specific actions may be allowed after they are analyzed pursuant to the National Environmental Policy Act; the Bureau must also comply with section 7(a)(2) of the Act when it is considering these future actions.

Finally, the Bureau's proposed action includes certain modifications to the California Desert Conservation Area Plan, as amended. These modifications are the consultations on livestock grazing for the desert tortoise between the Service and Bureau, the Bureau's proposed interim measures, and the actions proposed in the draft Northern and Eastern Mojave and Northern and Eastern Colorado bioregional plans. In some cases, these modifications have altered the manner in which the California Desert Conservation Area Plan may have affected the desert tortoise. Where these modifications have eliminated the likelihood of adverse effects, we have noted this situation in the Description of the Proposed Action section of this biological opinion and will not repeat the analysis herein.

We considered other factors in our analysis of whether the Bureau's guidance and ongoing activities were likely to jeopardize the continued existence of the desert tortoise or adversely modify its critical habitat. Our consideration of the overall effects of the Bureau's program guidance on the desert tortoise includes, at least to some degree, an evaluation of how likely an action is to occur. For example, the pumping of groundwater from an area that does not contain groundwater is not likely to occur; therefore, even though the program guidance and multiple-use class may allow this activity, it would not occur.

Additionally, the Bureau would consult on each future action that it proposes to approve, undertake, or fund, pursuant to the requirements of section 7(a)(2) of the Act. The potential exists that, in this biological opinion, we may find that the Bureau's guidance is not likely to jeopardize the continued existence of the desert tortoise or adversely modify its critical habitat. However, a specific action may be proposed in the future that could result in a finding of jeopardy or adverse modification of critical habitat. Such a circumstance could occur when permit applications contain project-specific details that cannot be evaluated at this programmatic level.

Effects of Human Activities on the Desert Tortoise

Numerous activities could occur as a result of the implementation of the guidelines and elements of the California Desert Conservation Area Plan. These activities can adversely affect the desert tortoise through loss of individuals and loss or disturbance of habitat.

Desert tortoises can be struck by vehicles that are driving on paved and unpaved roads and cross country (Boarman and Sazaki 1996). Cross country travel could also result in the destruction of burrows; desert tortoises could either be trapped inside the burrows or find them unavailable when they are needed to escape predation or extreme weather conditions. In general, cross

country travel occurs less frequently than travel on roads but can cause substantial impacts because of the presence of burrows and the greater difficulty in detecting and avoiding desert tortoises. As in virtually every instance, hatchling desert tortoises are the most difficult individuals to detect.

Although desert tortoises are generally more easily observed on roads, vehicles can travel at increased speed that again reduces the ability of drivers to detect and avoid desert tortoises. Rises and turns in roads also decrease the ability of drivers to detect desert tortoises. The actual level of mortality that would occur along a specific road will be influenced by many variables and is difficult to predict; the level and type of use of the road by vehicles and the number of desert tortoises present during periods of heavy use are two of the primary factors that are difficult to predict. Mortality associated with vehicle strikes, both on and off roads, will be greatest in the spring and fall, in areas where desert tortoises are most common. Along heavily used roads, the number of desert tortoises is depressed for some distance from the edge of the road; this distance varies with the level of use of the road.

Desert tortoises would be at risk during the construction, operation, and maintenance phases of any projects that would employ large equipment. Animals can be crushed on the ground's surface, trapped in their burrows, and buried in overburden piles. During the construction of the Kern and Mojave pipelines, numerous desert tortoises were killed by vehicles traveling to and from the project sites on the rights-of-way; although this mortality was not directly caused by the heavy equipment at the construction sites, the right-of-way traffic was occurring in direct support of that activity.

Because of their small size, hatchlings and slightly larger desert tortoises could be trampled by foot traffic. Nests are also vulnerable, but their typical location, near the mouth of a burrow, likely protects them to some degree.

Desert tortoises have died as a result of other factors associated with human activities. They have fallen into trenches or adits that were excavated for various types of projects; improperly constructed cattle guards can also trap smaller individuals. Desert tortoises have become entangled in netting or wire. Desert tortoises may seek shelter in the shade of vehicles and be crushed when those vehicles are subsequently moved. Improper disposal of food wastes and trash often attract predators of the desert tortoise, especially common ravens. Pet dogs brought onto public lands by recreationists or workers associated with specific projects could disturb, injure, or kill desert tortoises. Desert tortoises have been found trapped in guzzlers and between the rails of a railroad track.

Some ill, dying, and recently dead desert tortoises have been found to contain elevated levels of potential toxicants, such as cadmium, chromium, mercury, nickel, and lead (Jacobson *et al.* 1991, Homer *et al.* unpublished data in Chaffee and Berry 1999). Chaffee and Berry (1999) compared concentrations of elements found in plants and soils and found elevated concentrations of cadmium, potassium, and zinc in all plants; other elements, such as chromium, nickel, and

selenium were enriched only in certain plants. They also found anomalous concentrations of arsenic, which could be toxic to desert tortoises in large quantities, near areas that have been mined for gold; arsenic occurs in some gold ores. Avery (1998) notes that concentrations of heavy metals, such as chromium, iron, copper, zinc, and aluminum, were higher in Mediterranean grass (*Schismus barbatus*) than in evening-primrose (*Camissonia boothii*), four o'clocks (*Mirabilis bigelovii*), or filaree (*Erodium cicutarium*). Avery (1998) found that Mediterranean grass had greater concentrations of chromium, iron, copper, zinc, and aluminum than the latter three species. He speculated that, because its fibrous roots are near the surface of the soil, it may accumulate heavy metals that are deposited from airborne pollution more readily than the other species, which have tap roots. Mediterranean grasses (*S. barbatus* and *arabicus*) are widely distributed, non-native plants that are common in disturbed soils and readily consumed by desert tortoises. To date, although these desert tortoises appear to have been exposed to elevated levels of potentially toxic elements, we do not know whether these elements may affect the species.

The use of pesticides could result in direct mortality of desert tortoises; we are unaware of specific studies regarding the effects of pesticides on the desert tortoise. Herbicides may reduce or eliminate the abundance of plants that the desert tortoise uses for forage or shelter; other pesticides could reduce the abundance of pollinators, which, in turn, could reduce the germination success of plant species that are important to the desert tortoise. Both the active ingredient and surfactants may be toxic to desert tortoises and species that are important for forage and shelter.

Through legitimate and authorized use of desert lands, people make contact with desert tortoises. This contact can lead to uninformed or malicious interactions that result in injury or mortality of desert tortoises. For example, unauthorized handling or restraint of a desert tortoise could induce physiological stress that reduces the animal's ability to withstand high temperatures. Desert tortoises are occasionally killed by gunshots. Some mortalities associated with gunshots may be accidental; however, most are likely intentional. Although this consultation addresses only legal actions that are implemented or authorized by the Bureau, the access provided by the Bureau's authorizations can increase the number of adverse interactions between desert tortoises and people.

The implementation of the guidelines and elements of the California Desert Conservation Area Plan can lead to ground-disturbing activities within habitat of the desert tortoise. These impacts include the direct removal of annual and perennial plants that the desert tortoise uses for food and cover. Disturbance of soils can accelerate the spread of invasive non-native plant species by destruction of soil crusts and cryptogams; these non-native species, in turn, can compete with the native plant species (Lovich and Bainbridge 1999) that the desert tortoise requires for nutrients and shelter. Non-native plants can also increase the ability of the desert to carry wild fires (Lovich and Bainbridge 1999). Neither desert tortoises nor the plant species upon which they depend are adapted to fire; consequently, fires could result in a substantial loss of desert tortoises and severely alter the plant community structure within their habitat.

Fragmentation of habitat and populations impairs the ability of the desert tortoise to survive and recover. Heavily used roads, even if they do not pose a physical barrier to desert tortoises, cause fragmentation because animals cannot cross them safely. Some roads, such as Highway 58, have been fenced to exclude desert tortoises and fitted with underpasses that allow animals to move from side to side; these roads may reduce mortality levels and allow passage of animals to the degree that the potential has increased for the desert tortoise to survive and recover in such areas (Boarman *et al.* 1998).

Unpaved roads that are used infrequently likely do not pose a threat of fragmentation. However, ongoing road maintenance can lower the bed of the road and raise berms to a degree that desert tortoises which enter the roadway cannot exit. These animals are subsequently threatened with predation, exposure to extreme temperatures, collection, and collision with vehicles.

Effects of Multiple-Use Classes, Guidelines, and Elements

In the following sections, we combined our evaluations of the guidelines for the relevant multiple-use classes and of the elements of the California Desert Conservation Area Plan. Where appropriate, we also evaluated the potential impacts of ongoing uses; note that this biological opinion does not analyze the potential effects of any future specific actions requiring approval, authorization, or implementation by the Bureau.

The Bureau's program guidance is designed to protect biological resources and other values to the greatest degree on Class C lands. Most Class C lands do not support substantial numbers of desert tortoises because these areas are usually steep, rocky, and high in elevation. However, substantial portions of the Chemehuevi and Shadow Valley Desert Wildlife Management Areas support desert tortoise habitat. Therefore, in regions where desert tortoise habitat overlaps Class C lands, the benefit of this type of management to the desert tortoise is substantial.

In contrast, biological resources are the least protected within Class I lands. Generally, desert tortoises are not abundant within Class I lands, because habitat on these lands has been subjected to extensive disturbance by human activity. Although human activity may be extensive within Class I areas, the long history of disturbance in these areas has, in general, decreased their value biologically; consequently, the program guidance with regard to these areas may not substantially affect the desert tortoise. Despite the existing situation, the overall status of the desert tortoise and the potential for Class I areas to be restored should be evaluated as part of any long-term planning process.

Class L and M lands likely contain most of the desert tortoise habitat within the California Desert Conservation Area. The guidance for Class L lands are more protective of biological resources, including listed species, than those for Class M lands, although the Bureau can authorize actions on Class L lands that adversely affect the desert tortoise and its habitat. The Bureau's proposals in the Northern and Eastern Colorado and Northern and Eastern Mojave plans, to change the multiple-use class of all Class M lands within desert wildlife management area to Class L would improve management direction to some degree.

Cultural and Paleontological Resources and Native American Values

We have combined these guidelines and elements because the Bureau's program guidance is generally similar for cultural and paleontological resources and Native American values. It calls for the preservation and protection of archaeological and paleontological values and sites of value to Native Americans that occur in both Class L and M lands. The Bureau may authorize some activities, such as the stabilization or protection of a site or research that may result in ground disturbance, use of vehicles on existing routes of travel, and walking through habitat of the desert tortoise, associated with these resources and values.

The use of vehicles on existing routes and walking through habitat could result in injury to or mortality of desert tortoises. Stabilization of a site or research that involves ground disturbance could result in the destruction of burrows and loss of vegetation; desert tortoises could also be killed or injured. However, the extent of the work that would likely be conducted under the program guidance for cultural and paleontological resources or Native American values would be minor because the sites are generally small, particularly in relation to the range of the desert tortoise in the California Desert Conservation Area. For this reason, we have concluded that the activities that may occur under this program guidance are unlikely to kill or injure many desert tortoises or cause substantial loss or disturbance of habitat, including critical habitat.

Electrical Generation Facilities

The guidelines and elements of the California Desert Conservation Area Plan allow the establishment of nuclear, fossil fuel, wind, solar, and geothermal facilities on Class M and I lands and of wind, solar, and geothermal facilities on Class L lands. The construction of a power plant would entail the use of large amounts of equipment and vehicles; desert tortoises would be at risk of being killed or injured at the work site and along any rights-of-way. The number of desert tortoises that would be at risk would depend greatly on the nature of construction activities and the location of the site.

The California Desert Conservation Area Plan notes that a typical power plant occupies 2,500 to 3,000 acres (Bureau 1999). Solar power plants, such as the existing facilities at Kramer Junction and Harper Dry Lake, cover large areas; the direct ground disturbance associated with wind farms may be substantially less, but the extensive system of roads to connect turbines and other facilities would also result in a great degree of habitat loss and fragmentation over large areas. The degree to which a specific power plant would cause loss or disturbance of habitat and fragmentation of populations would depend greatly on its location in relation to terrain and suitable habitat of the desert tortoise. For example, power plants located in previously disturbed areas, near major roads, and at sites that are marginally appropriate for desert tortoises may not cause substantial loss of important habitat. Conversely, a power plant that is constructed in optimal habitat in a narrow point of a otherwise broad valley could decrease the viability of the overall population because of the habitat loss and fragmentation.

Because of the Bureau's program guidance, power plants cannot be built in wilderness areas; where Class C lands support desert tortoises, such as in the Chemehuevi and Shadow Mountain Desert Wildlife Management Areas, this program guidance is beneficial to the species. The effect of the development of power plants within most Class I lands would be minimal because the number of desert tortoises in these areas has declined because of past and existing management. A possible exception is the northern portion of the Johnson Valley Off-highway Vehicle Management Area. Currently, this area has not been heavily used for recreation and may support good densities of desert tortoises. Class L lands are theoretically at less risk than Class M lands because only geothermal, wind, and solar power plants can be built within these areas.

The maintenance of power plants can result in injury or mortality to desert tortoises if heavy equipment is used in or adjacent to habitat. Maintenance of pipelines, such as those that could be associated with geothermal plants, can result in further injury or mortality to desert tortoises and additional ground disturbance; however, these effects are likely to be less than those associated with the original placement of the pipeline. The extensive road network associated with wind farms (and to a lesser degree, geothermal plants) would expose desert tortoises to an ongoing threat of vehicle strikes and possible habitat fragmentation by berms, if they are constructed incorrectly.

Given its extensive range, the likelihood that an energy-generating facility would be proposed within habitat of the desert tortoise appears to be reasonably high. Major electrical transmission, gas, and oil lines cross extensive portions of the species' habitat. The recent energy crisis demonstrated that the cost of power can vary greatly and provide incentive to build facilities when prices are high.

To summarize the discussion of the potential effects of this program guidance on the desert tortoise, the Bureau is likely to receive proposals to develop energy-generating facilities within habitat, including critical habitat, of the desert tortoise. The effects on the desert tortoise of an energy-generating facility would vary greatly, depending on several factors; in certain circumstances, power plants could have long-term and ongoing detrimental effects on local populations of desert tortoises and their habitat.

Transmission Facilities

The restriction of transmission facilities to designated corridors is beneficial to the desert tortoise because it tends to concentrate the effects of certain classes of human activities to specific areas. Although these areas may be more highly disturbed than surrounding lands, corridors would not seem to contribute to long-term fragmentation of habitat, provided that access roads are maintained properly, because human presence is intermittent and most habitat disturbance is temporary.

The actual construction of transmission facilities can result in substantial loss of desert tortoises and disturbance of their habitat. The extent of the disturbance depends largely on the type of

facility. For example, the effects of the installation and maintenance of fiber optic cables are typically minor in scale and short in duration; large pipelines cause long-term disturbance of thousands of acres of habitat and have resulted in the loss of dozens of desert tortoises. Electrical transmission lines also provide numerous sites for common ravens to nest and roost; lines that cross areas where natural or artificial nest and roost sites are rare or absent can substantially alter the distribution of common ravens in a region (Knight *et al.* 1999, Lovich and Bainbridge 1999).

An important factor to consider in an analysis of the effects of transmission lines is that the effects are linear and spread, at times, over hundreds of miles. Generally, a linear disturbance is likely less damaging to the species as a whole; the losses of habitat and individuals are not concentrated in one area and local recovery of populations and habitat may proceed more quickly because of the edge effect of undisturbed habitat. However, an adverse aspect of linear projects is that they may speed the spread of non-native plant species. The recent and rapid spread of the non-native Sahara mustard (*Brassica tournefortii*) may have been aided by vehicle travel along both roads and transmission line corridors and the ongoing maintenance along these routes that promotes constant disturbance of soils. However, some degree of fragmentation of habitat may occur if associated roads provide access to otherwise inaccessible blocks of habitat and if subsequent human use in these areas precludes normal behavior of desert tortoises.

The maintenance of existing facilities, including access roads, can kill or injure desert tortoises and cause ground disturbance. Maintenance of underground facilities, particularly large pipelines, generally causes the greatest impact.

In general, the construction and maintenance of transmission facilities have the potential to cause the deaths of numerous desert tortoises and disturbance of large amounts of habitat. However, the Bureau's guidance that these facilities should be restricted to defined corridors is beneficial in that impacts can be localized.

We also note that the number of desert tortoises killed during construction of the Kern and Mojave pipelines indicates the great potential the construction of pipelines has to degrade the status of a population. We also note that the combined efforts of the Service, Bureau, and Federal Energy Regulatory Commission did little to reduce the source of mortality, which was occurring largely through disregard of the project's protective stipulations.

Distribution Facilities

The Bureau's guidance allows for the development of new distribution facilities in Class L, M, and I lands. Existing facilities within all multiple-use classes can be maintained and upgraded or improved in accordance with existing right-of-way grants.

These activities could result in the loss of desert tortoises and disturbance and loss of their habitat. In general, the effects would be similar to those described for transmission lines; however, because distribution facilities tend to be smaller than those used for transmission, the

degree of the effects from any single project are likely to be less. Distribution facilities may be allowed outside of existing rights-of-way, when these are not reasonably available. Facilities outside of existing rights-of-way would likely be particularly detrimental; in such cases, the roads used to provide access to the facilities during construction and maintenance could fragment habitat and allow additional potential for unauthorized use of areas inhabited by the desert tortoise.

Communication Sites

The guidelines allow for the maintenance and use, in accordance with right-of-way grants and applicable regulations, of existing facilities within all multiple-use classes. Access roads to these sites traverse habitat of the desert tortoise. Although at least some communication facilities are located outside of suitable habitat for the desert tortoise, maintenance and use of roads to gain access to the sites could result in loss of animals. Travel along these roads could also spread non-native species.

The guidelines allow the development of new sites within Class L, M, and I lands. Generally, each site would likely cause the loss of a small amount of habitat; construction could possibly occur without the loss of desert tortoises. If a new access road is needed, the most long-term and deleterious effects of the site may be the increased human intrusion into an area as a result of the road. However, the continuing proliferation of communication sites raises the potential that the activities allowed by this guideline could result in substantial degradation and loss of desert tortoises and their habitat over time. The Bureau's program guidance does not, at this time, contain any specific direction with regard to the management of communication sites.

Fire Management

The Bureau's guidance states that measures to suppress fires will be taken in accordance with specific fire management plans subject to such conditions as the authorized officer deems necessary. Fire management plans provide a framework that describes the use of motorized vehicle, aircraft, and fire retardant chemicals that could be used to combat fires.

The use of motorized vehicles within habitat of the desert tortoise would likely result in the crushing of animals, disturbance of annual and perennial plants that were not directly affected by fire, and disturbance of soils that may later facilitate the colonization of invasive, non-native species. The potential effects of chemical fire retardants on the desert tortoise have not been studied.

In prehistoric desert plant communities, the limited biomass and large distances between shrubs were factors that reduced the frequency of fire (Humphrey 1974, O'Leary and Minnich 1981, Minnich 1983, Brown and Minnich 1986 in Lovich and Bainbridge 1999). Non-native annual species have altered plant communities through the California desert. These non-native species, which often persist in a more woody form than many natives, have increased the ability of desert

communities to carry wild fire. Consequently, at least some desert plant communities are now more capable of carrying fires than they were previously.

The desert tortoise is not ecologically adapted to fire; they are killed by fires if trapped above ground. Neither is habitat of the desert tortoise adapted to fire (Lovich and Bainbridge 1999); fires can eliminate the shrubs on which desert tortoises depend for shelter and alter the composition of plant communities by reducing the abundance of native annuals and perennials and increasing that of non-native annual grasses. These non-native grasslands do not contain the necessary diversity of plant species to support viable populations of desert tortoises. The Bureau's California Desert District averaged 175 fires per year in the 10 years prior to 1992 (Lovich and Bainbridge 1999). The area affected by these fires annually ranged from 1,500 to 85,000 acres, with an average of approximately 27,000 acres per year. Although at least portions of the areas that burned were not habitat of the desert tortoise, fires have affected some areas of suitable habitat. Within the Northern and Eastern Colorado planning area, approximately 920 acres of critical habitat have burned (Crowe and Foreman 1997).

Consequently, fire suppression likely results in some low level of deleterious effect to the desert tortoise and its habitat. However, the suppression of wildfires in habitat of the desert tortoise should benefit the desert tortoise because it can slow or prevent the conversion of desert scrub communities into grasslands.

Vegetation Harvesting

The Bureau can allow, by permit on all lands except for Class C, the removal of native plants for commercial and non-commercial purposes and harvesting by mechanical means. These activities could affect the desert tortoise and its habitat through loss of individuals and disturbance of the plant communities upon which it depends, particularly if the harvesting method involves the use of machinery; fragmentation of habitat, if the harvesting is extensive and results in some conversion of habitat; and introduction of non-native species. If harvesting equipment is used in numerous locations, the potential for spreading non-native species could be substantial. The prohibition of mechanical and commercial harvesting within Class C lands is beneficial to the desert tortoise where these lands overlap substantial numbers of animals and where the management goal is to recover the species.

The severity of these effects would vary directly in relation to the scale and method of harvesting. The collection of a few samples of plants by hand while walking cross-country would have far less impact than the mechanical harvest of a large area. The only proposals, of which we are aware, to harvest plants within habitat of these species have involved the limited removal of portions of Lane Mountain milk-vetch plants for research; these activities were reviewed by both the Service and Bureau under their respective authorities. At this time, the removal of vegetation does not appear to be a substantial threat to the desert tortoise.

On Class M and I lands, mechanical control of vegetation may be allowed after consideration of possible impacts. This activity could affect the desert tortoise in ways similar to those described with regard to the harvesting of plants by mechanical means.

After site-specific planning, the Bureau's program direction allows the eradication of noxious weeds on Class L lands by chemical means and spot application of pesticides on Class M and I lands. The use of herbicides to destroy weeds could result in mortality of some native plants that desert tortoises use for forage and cover; we do not have specific information regarding the direct effects of herbicides on desert tortoises. However, the control of weeds and other pests within habitat of the desert tortoise can provide important benefits; consequently, the overall program direction with regard to the use of pesticides on Class L, M, and I lands is positive. The Bureau's program guidance prohibits the use of pesticides in wilderness; this direction eliminates a potentially useful tool for restoration efforts.

The Bureau's program direction allows enclosures within Class L, M, and I lands. The potential exists that desert tortoises may be trampled during installation and maintenance of enclosures; some ground disturbance would also likely occur. Enclosures can be useful in protecting sensitive resources and can assist in conducting research that may provide information important for the recovery of the desert tortoise.

The Bureau's program direction allows prescribed burning within Class L, M, and I lands after development of a site-specific management plan. The desert tortoise and its habitat are not adapted to fire; fire is not a necessary ecological factor within the habitats in which it occurs. Consequently, fires could have severe detrimental effects on the species and the community structure of their habitats. At this time, the use of prescribed burning within desert tortoise habitat is not appropriate. Given that the Bureau is not likely to conduct prescribed burns within the habitat of the desert tortoise, this program direction poses a low degree of threat.

Land-tenure Adjustment

The sale or disposal of Class M lands that supports desert tortoises and their habitat would decrease the level of protection that these individuals and their habitat are afforded by the Endangered Species Act. Absent federal ownership, the requirement to consult, pursuant to section 7(a)(2) of the Act, covers a more narrow degree of activities; that is, a federal agency no longer has ultimate control over the land use.

We are aware, however, that desert tortoises continue to occur in low numbers on isolated parcels of Bureau land that are adjacent to development centers; we also recognize the difficulty in managing these parcels, their overall low biological value in terms of the long-term conservation of wildlife, and the high value these parcels can sometimes have during exchanges. In short, the Bureau can exchange these lands of low biological value near existing development for more remote lands of greater ecological consequence and, in so doing, consolidate the land ownership pattern. Additionally, because the exchanges are conducted for the fair market value, the Bureau

often receives a net increase in its land base. Consequently, we support the use of selected parcels of Class M lands to consolidate the public land base upon which the desert tortoise must be recovered.

Livestock Grazing

Livestock grazing affects desert tortoises and their habitat in numerous ways. Desert tortoises can be killed or injured during the construction, maintenance, and use of range improvements, including roads. Predators, such as common ravens, can be attracted to livestock waters, carcasses of livestock, and some range improvements; these habitat alterations could increase the number of predators, which could, in turn, exacerbate predation rates on desert tortoises.

Trampling by livestock can injure or kill desert tortoises, either above ground or while they are in their burrows. Avery and Neibergs (1997) found that more burrows of desert tortoises were partially or completely destroyed in areas that were grazed by cattle than in a fenced area. Within the enclosure, desert tortoises remained in their burrows all night significantly more than animals located outside the enclosure, which would be expected because more burrows were damaged outside of the enclosure. The increased time spent outside of their burrows likely exposes desert tortoises to greater risk of predation and to environmental extremes. Neonate and juvenile desert tortoises use rodent burrows for shelter; because rodent burrows are often shallowly excavated and run parallel to the surface of the ground, they are more vulnerable to trampling by livestock than burrows of sub-adult and adult desert tortoises. The propensity for rodents to place their burrows near and under shrubs may offer some degree of protection.

Livestock grazing decreases the amount of plant cover and biomass (Lovich and Bainbridge 1999). It can also change the species composition of plant communities over large areas (Lovich and Bainbridge 1999). Humphrey (1958, 1987 in Boarman 1999) noted that livestock was implicated in the conversion of grass-dominated communities to shrub lands; however, other factors such as fire suppression, rodents and other herbivores, and competition probably influenced the conversion. (Note that this review primarily evaluated native grasslands of Arizona, New Mexico, and Texas; the Mojave and Colorado Deserts in California likely did not support extensive grasslands in historic times.) Other authors note that grazing reduces the amount of herbaceous species and increases that of woody species (Roundy and Jordan 1988, Vaughan 1982, 1984 in Service 1994b) and that non-native species, such as Mediterranean grass and cheatgrass (*Bromus tectorum*), benefit from grazing (Berry and Nicholson 1984, Kie 1990 in Service 1994b).

Avery (1998) found that a grazed area had significantly larger creosote bushes (*Larrea tridentata*), more dormant or dead burrobrushes (*Ambrosia dumosa*), fewer and smaller individuals of galleta grass (*Hilaria rigida*), more individuals of cheesebush (*Hymenoclea salsola*, an indicator of disturbance), and a lower diversity of winter annuals when compared to an ungrazed area. Conversely, the ungrazed area contained more individuals of the desert dandelion (*Malacothrix glabrata*), a forage plant preferred by desert tortoises. The ungrazed and

grazed areas did not differ in biomass, cover, density and species richness of annual plants. Boarman (1999) notes that, because the ungrazed area had been fenced to exclude cattle for only 12 years, the effects of previous grazing may still be present. Desert habitats that have been invaded by Mediterranean grass (*Schismus* spp.), brome grass (*Bromus* spp.), and Sahara mustard are prone to wildfire; the effects of fire on desert tortoises and their habitat are discussed elsewhere in this biological opinion. Changes in species composition could be unfavorable to desert tortoises if palatable and nutritious plants are replaced by those that do not provide desert tortoises with adequate nutrition.

Livestock grazing can damage soil crusts (Lovich and Bainbridge 1999). Disturbance to soil crusts may increase erosion, which could result in further damage to plants in surrounding areas. The disturbance of soil crusts provides favorable conditions for the growth and proliferation of non-native species, such as Mediterranean grass and Sahara mustard. The loss of cryptogamic crusts, which are composed of nitrogen-fixing lichens and fungi, may reduce the ability of substrates to support native annual plants; the disturbance of crusts also likely reduces the amount of favorable germination sites for seeds of native annual plants and the moisture-holding capacity of the soils. In combination, these changes favor the replacement of native annual plants with shrubs and non-native annual species.

Non-native grasses have spread to the deserts and other arid areas of North America and reduced the relative abundance of native species (Mack 1981, D'Antonio and Vitousek 1992, Rundel and Gibson 1996 in Avery 1998); livestock grazing has, at least, contributed to their spread. Regardless of whether they are native or introduced, annual desert grasses contain less crude protein, calcium, sodium, and water than desert forbs (Ofstedal *et al.* 1993, McArthur *et al.* 1994 in Avery 1998). Avery (1998) found that desert tortoises eating Mediterranean grass *ad libitum* exhibited a negative nitrogen balance. Generally, turtles consuming a diet low in protein (*i.e.*, where the nitrogen concentration in forage is low) experience reduced growth rates (Gibbons 1967, 1970, Parmenter 1980, Vogt and Guzman 1988, Avery *et al.* 1993 in Avery 1998) and lower egg production (White 1993; Henen 1993, 1997 in Avery 1998). Because desert tortoises are more vulnerable to predation when they are smaller, reducing their rate of growth may eventually result in fewer individuals reaching breeding age. Additionally, decreases in the number of eggs would reduce eventual recruitment into the adult population. If growth rates and egg production are lowered over wide areas for long periods of time, a decline in the population would be likely. Finally, Avery (1998) noted that Mediterranean grass had high concentrations of heavy metals; we are uncertain how these elements affect the desert tortoise.

As discussed in the Status of the Species section of this biological opinion, neonate desert tortoises consume germinating annual plants. These small plants would be trampled by livestock and, depending on the number and distribution of cattle, could be eliminated from the forage base in a local area.

Avery (1998) noted that desert tortoises spent more time foraging for desert dandelions in grazed than ungrazed areas because the number of desert dandelions in grazed areas had been reduced

by cattle. This situation occurred in the Ivanpah Valley during the late spring. Desert tortoises are more vulnerable to predators, weather conditions, and, at least to some degree, human-associated mortality when they leave their burrows. Consequently, if desert tortoises are required to spend more time foraging and away from their burrows because of livestock grazing, they would be at greater risk. When food is abundant, such as during the early spring of the year in which Avery conducted his study, direct competition for food does not seem to occur between desert tortoises and cattle.

The Bureau has proposed to remove livestock from habitat of the desert tortoise in the Ord Mountain, Cronese Lake, Harper Lake, Cady Mountain, Rattlesnake Canyon, Rudnick Common, and Walker Pass allotments from March 15 through June 15 and from September 7 through November 7. The Bureau has also proposed no cattle grazing year-round in habitat of the desert tortoise in the Hansen Common and Tunawee Common allotments. Removing livestock from these areas at these times should eliminate the potential for competition for forage between desert tortoises and cattle and reduce the amount of time during which cattle could potentially trample desert tortoises and their burrows. Oftedal (2001) found that native forage has less nutritional value for desert tortoises during drought years; for this reason, the Bureau's proposal would be particularly beneficial during years of overall poor forage and as the nutritive quality of forage plants drops later in the spring. However, disturbance to soils and cryptogamic crusts and other effects of grazing would continue during other portions of the year when cattle would be present. Additionally, cattle would be present during the late winter and early spring when neonate desert tortoises would be active and attempting to forage on germinating annuals. These allotments are located in the Western Mojave Recovery Unit. The Ord Mountain, Cronese Lake, and Harper Lake allotments are located at least partially within critical habitat and therefore support key populations of the desert tortoise; the other allotments are generally located at the edges of the range of the desert tortoise in this region, where habitat conditions are not optimal for the species. In both cases, the elimination of competition at key times may allow desert tortoises to persist in these areas.

The Bureau has proposed numerous measures to attempt to reduce the impact of livestock grazing on desert tortoises and their habitat in the Northern and Eastern Colorado and Northern and Eastern Mojave planning areas. Retirement of an allotment if the permittee relinquishes grazing leases and related authorizations within desert wildlife management areas would provide substantial conservation benefits to the desert tortoise. This proposal, while it is not associated with any specific action at this time, would result in the removal of livestock from areas that are important for the recovery of the desert tortoise.

The Bureau proposes to maintain the Pilot Knob and Whitewater allotments in rest until the West Mojave Coordinated Management Plan and Coachella Valley bioregional plan, respectively, are signed. These measures will benefit the desert tortoise by allowing recovery of habitat in these allotments and eliminating, at least temporarily, sources of direct mortality and injury associated with livestock grazing.

The Bureau would remove cattle from desert wildlife management areas within the Northern and Eastern Mojave and Northern and Eastern Colorado planning areas when the amount of annual plants drops below 230 pounds per acre from March 15 through June 15. The effects of this action would be similar to those discussed for the Western Mojave Recovery Unit.

Prohibiting the granting of ephemeral and temporary non-renewable authorizations within desert wildlife management areas should assist desert tortoises in making optimal use of forage in years when annual plants are abundant. Years of above-average rainfall and abundant forage may allow young desert tortoises to grow more rapidly and all individuals to improve their overall health status.

On the Lazy Daisy Allotment, which is within the Northern and Eastern Colorado planning area, the Bureau proposes to use lower utilization rates during the growing season and when range is in poor or fair condition; rates would be higher during the dormant season and when range is in good to excellent condition. The lowest utilization rates of 25 percent would be used in Mojave and Sonoran desert scrub and salt desert scrub communities. Desert tortoises are most likely to be abundant in these communities and active during the growing season. The proposed utilization rates should assist the Bureau in monitoring the condition of habitats to some degree; the generally low rates should ensure that overgrazing of perennial vegetation in allotment is minimized. However, as noted previously in this document, the effects of grazing accrue through the year; while these utilization rates will assist the Bureau in monitoring the level of grazing, impacts to desert tortoises and its habitats will likely continue under this regime.

The elimination of approximately 20,000 acres of the Lazy Daisy Allotment will benefit desert tortoises because all impacts of grazing would be removed from this area. We understand that this area, which supports the greatest density of desert tortoises on the allotment, does not currently sustain much use by cattle; however, its removal from the allotment would preclude the development of facilities, such as waters, that could shift cattle use into the area..

Within the Northern and Eastern Colorado planning area, all existing cattle guards will be modified to prevent desert tortoises from being trapped and new cattle guards will be designed to prevent entrapment. This measure is likely to reduce the mortality of desert tortoises, particularly smaller individuals that can fall through the bars of the cattle guards.

As noted previously in this biological opinion, foraging strategies of the desert tortoise are influenced by seasonal and annual weather conditions, the nutritive content of forage, and other factors. Variable weather patterns in the California desert ensure that food supplies will also be highly variable. Long-term interference with the desert tortoise's ability to obtain appropriate and sufficient nutrients, such as could occur with widespread grazing, would eventually cause declines in populations. Animals in a weakened state because of poor nutrition may be more susceptible to diseases, such as the upper respiratory tract disease, and environmental contaminants, such as heavy metals that accumulate in forage plants; the reproductive capacity of these animals would also likely be diminished.

We do not have information that conclusively links livestock grazing to the recent declines in the numbers of desert tortoises in California. Until recently, the eastern Mojave Desert supported the highest densities of desert tortoises and was also the region most heavily used by livestock. However, when populations of a long-lived animal, such as the desert tortoise, decline so precipitously, continued loss of individuals in any age group and further degradation of habitat are deleterious to the population's viability. The effects of grazing may function in combination with other factors in the environment to lower the fitness of desert tortoises.

Any analysis of whether an action is likely to jeopardize the continued existence of a listed species or adversely modify its critical habitat must consider the scale of the impact in relation to the critical habitat unit, recovery unit, or range of the species, as appropriate. Because the recovery plan (Service 1994c) suggests that delisting of the desert tortoise could occur by recovery unit, we have used recovery units as the basis for our evaluation.

Desert wildlife management areas have not been proposed to date within the Western Mojave Recovery Unit. Within this unit, the 518,000-acre Fremont-Kramer Critical Habitat Unit would not be grazed by cattle; domestic sheep may graze limited areas within this critical habitat unit where definable boundaries for grazing have been established along roads. Approximately 16,480 acres of the Harper Dry Lake Allotment overlap the 766,900-acre Superior-Cronese Critical Habitat Unit; this portion of the allotment will not be grazed from March 1 through June 15 and from September 7 through November 7 as a result of an interim measure proposed by the Bureau. The Ord-Rodman Critical Habitat Unit covers 253,200 acres and overlaps 102,141 acres of the Ord Mountain Allotment. Approximately 41,650 acres of this critical habitat unit will not be grazed from March 1 through June 15 and from September 7 through November 7 as the result of an interim measure; additionally, desert tortoise habitat to the east of the allotment will not be grazed as part of an agreement developed between the permittee and the Bureau. The Pinto Mountain Critical Habitat Unit, which covers 171,700 acres, will not be grazed. In total, approximately 58,130 acres of critical habitat would be grazed except in the spring and fall periods noted previously in this paragraph; the Western Mojave Recovery Unit contains 1,709,800 acres of critical habitat for the desert tortoise. Consequently, 3.4 percent of the critical habitat in the recovery unit could be grazed under the Bureau's interim management program. The Bureau has also implemented additional closures in the spring and fall to protect desert tortoises in habitats located at the edges of its range in the Western Mojave Recovery Unit. The current management precludes grazing on most critical habitat in the recovery unit and, as such, substantially reduces the level of impact of ongoing livestock grazing on the desert tortoise and its habitat.

In the plan for Northern and Eastern Colorado bioregion, the Bureau has proposed to reduce the size of the Lazy Daisy Allotment to 311,280 acres; of this area, 235,492 acres are within the Chemehuevi Desert Wildlife Management Area. The Chemehuevi Critical Habitat Unit and the proposed Chemehuevi Desert Wildlife Management Area include 937,400 and 874,843 acres, respectively. Consequently, approximately 27 percent of the desert wildlife management area would overlap with the allotment. The current proposal eliminates the Chemehuevi Allotment,

which had not been grazed in many years, and approximately 20,000 acres of the Lazy Daisy Allotment. The Bureau has also proposed to eliminate temporary non-renewable authorizations, limit grazing to specific rates of utilization, and remove cattle from the desert wildlife management area in the spring if the amount of annual plants falls below 230 pounds per acre; this proposal would allocate more forage to desert tortoises during the spring. In summary, the actions proposed for the Northern Colorado Recovery Unit would reduce the effects of cattle grazing on the desert tortoise.

Within the Northern and Eastern Colorado planning area, the Bureau would eliminate the Ford Dry Lake Allotment and reduce the area of the Rice Valley Allotment from 85,565 to 76,301 acres. The Bureau is eliminating the western portion of the Rice Valley Allotment, which supports low densities of desert tortoises; this action will benefit the desert tortoise to some degree. Grazing the remainder of the Rice Valley Allotment will not affect desert tortoises in a substantial manner because much of the habitat is stabilized and vegetated dune that is used by sheep lightly approximately once every 6 years (Foreman pers. com.).

Within the Eastern Colorado Recovery Unit, the Chuckwalla Critical Habitat Unit and the proposed Chuckwalla Desert Wildlife Management Area include 1,020,600 and 820,077 acres, respectively. This recovery unit does not contain any grazing allotments within critical habitat or the proposed desert wildlife management area.

All of the Bureau's proposed desert wildlife management areas within the Eastern Mojave Recovery Unit abut the Mojave National Preserve, which the National Park Service manages as a desert wildlife management area. The proposed Piute-Fenner Desert Wildlife Management Area would occupy 173,850 acres on the southeastern edge of the Mojave National Preserve; this area is part of the 453,800-acre Piute-Eldorado Critical Habitat Unit, which also extends into Nevada. The Piute Valley Allotment has an ephemeral preference; because the Bureau has proposed to eliminate ephemeral preferences within desert wildlife management areas, grazing will no longer be authorized. This allotment has not been grazed for years. The Ivanpah Valley Critical Habitat Unit covers 632,400 acres of lands administered by the Bureau and National Park Service. The proposed Ivanpah Valley and Shadow Valley Desert Wildlife Management Areas occupy 36,780 and 101,355 acres, respectively. The Valley Wells Allotment includes 223,007 acres and completely overlaps the proposed Shadow Valley Desert Wildlife Management Area. The Valley View, Kessler Springs, and Jean Lake allotments occupy 37,280 acres and overlap the Ivanpah Valley Desert Wildlife Management Area. The Bureau has proposed the same protective measures for these four allotments as it has for the Lazy Daisy Allotment; these measures would reduce the effects of cattle grazing on the desert tortoise on the approximately 10 percent of the critical habitat unit that is managed by the Bureau.

Given the restrictions placed on livestock grazing and the relatively small portion of critical habitat and proposed desert wildlife management areas that would be directly affected, livestock grazing is not likely to result in a substantial level of direct mortality or injury of desert tortoises or to degrade habitat in a manner that would preclude its use by desert tortoises. Because of the

measures that the Bureau has proposed to eliminate competition between desert tortoises and cattle for forage, cattle should not consume annual plants to the extent that sub-adult and adult desert tortoises starve; neonate and juvenile desert tortoises may be at greater risk, because they may not be as able as larger individuals to seek out food resources over distances. However, as we have stated previously in this biological opinion, the unexplained decline in the numbers of desert tortoises in many areas of the California desert could be related to numerous factors, including changes in the structure and composition of plant communities and the nutritive quality of forage species.

Mineral Exploration and Development

The Bureau's guidelines allow the exploration for and development of minerals on Class L, M, and I lands. If these activities are conducted under the casual use category, as described in the California Desert Conservation Area Plan and the Description of the Proposed Action section of this biological opinion, miners or prospectors are not required to send the Bureau a notice or plan of operation that describes the mining-related actions prior to their implementation. However, the mining regulations state that "(o)perators may use motorized vehicles for casual use activities provided the use is consistent with the regulations governing such use..., off-road vehicle use designations contained in (Bureau)-land-use plans, and the terms of temporary closures ordered by (the Bureau)" (43 CFR 3809.5(1)); the California Desert Conservation Area Plan is the land-use plan which established that vehicles were confined to existing roads within Class L and M lands. Consequently, under the casual use provisions as defined for the California Desert Conservation Area, operators may not use vehicles off of established roads.

Desert tortoises could be crushed by the foot traffic of operators or equipment during exploration. Ground disturbance may also occur as a result of exploration and subsequently lead to an invasion of non-native plants. The guidelines require that disturbances created during casual use be restored. Restoration attempts often fail in the harsh climate of the desert. However, because the disturbance allowed under casual use is minimal, the required restoration may be attainable. A possible exception would be invasion by non-native plants, in part because this effect would likely not be seen for months after the casual use and restoration occurred.

Without off-road vehicle use, the amount and size of other equipment that may be employed during casual use is likely to be limited. For this reason, the amount of disturbance to the desert tortoise and its habitat that may occur as a result of casual use under the mining guidance of the California Desert Conservation Area Plan is likely to be limited.

Certain areas on the western portion of Coolgardie Mesa, within habitat of the desert tortoise, are popular with mining clubs. The claims in this area are held by groups that allow members to mine within the claim. This activity has resulted in the development of extensive surface disturbance. Although desert tortoises are not known to have been killed or injured by this activity, the excavations left by the clubs would indicate that the level of activity is substantial and hazardous to the desert tortoise.

A plan of operation, approved by the Bureau, is required before the initiation of exploration or mining activities that would have impacts greater than would be expected under the casual use or notice required categories. A plan of operation is also required for any bulk sampling in which the operator will remove 1,000 tons or more of presumed ore for testing. Activities associated with plans of operation could result in the loss of desert tortoises, loss of its habitat, ground disturbance, and the introduction or spread of non-native plant species. The Bureau will require restoration of lands disturbed during the mining activities conducted under plans of operations. However, restoration efforts may not be successful in re-establishing the same quality and type of habitat that existed prior to the mining activity. Large areas are more difficult to restore; however, large mining companies have devoted extensive funding and resources to at least some restoration efforts (*e.g.*, Viceroy Mine in the eastern Mojave Desert near Lanfair Valley).

The mining laws allow individuals and corporations to apply for patents on public lands that have valid existing rights. Once these lands are removed from federal ownership, desert tortoises located on the patented lands would receive less protection under the authorities of the Act, as discussed previously in this biological opinion. However, on October 1, 1994, Congress placed a moratorium on the acceptance of new mineral patent applications. The moratorium remains in effect with the passage of the Interior Appropriations Act HR 2217 (section 309), signed by the President on November 5, 2001. For this reason, patenting of public lands is not likely to adversely affect the desert tortoise at this time. However, should Congress not renew the moratorium at some point in the future, the potential exists that the desert tortoise could be adversely affected. Additional consultation, pursuant to section 7(a)(2) of the Act, may not be required because the patenting of land is not a discretionary action on the part of the Bureau.

Preliminary work indicates that desert tortoises near hard rock mines may contain elevated levels of metals. We do not understand the full implications of this research to date or the pathway by which the metals entered the desert tortoise. The metals could have been ingested by desert tortoises as dust that was carried by wind from the mine site. Alternatively, the soils and plants in a heavily mineralized area may contain more metals. If the metals are emanating from mines and are found to affect desert tortoises negatively, the impacts of specific mines would need to be revisited.

Extraction of geothermal, oil, and gas reserves may take place within Class L, M, and I lands. Several areas within the California Desert Conservation Area Plan have been designated as potential or known geothermal resource areas (map 15 in Bureau 1999). In the event that suitable geothermal resources were present within habitat of the desert tortoise, the development of infrastructure for geothermal facilities could result in substantial ground disturbance, occupation, and loss of habitat. To date, geothermal development in the California Desert Conservation Area Plan has been limited to the East Mesa area of Imperial County and the Coso region at the Naval Air Weapons Station, China Lake; desert tortoises do not occur in the former area and the latter area is managed by the U.S. Navy. Consequently, the likelihood of geothermal development in areas occupied by the desert tortoise seems to be low.

The Bureau may refuse to approve a plan of operations until the plan encompasses the Bureau's mitigation and compensation requirements. The mitigation required by the Bureau could reduce the level of the adverse effects of a mining operation; compensation could potentially offset a portion of the residual impacts.

The mining laws and regulations require avoidance of unnecessary and undue degradation and reclamation of disturbed areas. If the Service found that a proposed plan of operations was likely to jeopardize the continued existence of the desert tortoise or adversely modify its critical habitat, the Bureau, with the authorities at 43 CFR 3809.411(d)(3)(iii), "may disapprove of or withhold a plan of operations if the proposed operations 'would result in unnecessary or undue degradation of public lands'" (Bureau 2002a). Unnecessary or undue degradation is defined as "conditions, activities, or practices that, among other things, 'fail to comply with ... other Federal or State laws related to environmental protection...'" (Bureau 2002a). The Bureau also noted that a biological opinion from the Service concluding that a plan of operations would likely jeopardize the continued existence of a species "would certainly indicate a failure to comply with the standards of the Endangered Species Act, and would, therefore, constitute unnecessary and undue degradation (Bureau 2002a)"

Under the current baseline conditions for the desert tortoise and its critical habitat, consultation on a small mine, pursuant to section 7(a)(2) of the Act, may not result in a determination of jeopardy or adverse modification. Therefore, although the Bureau would require the operator to reduce effects and compensate, the likely outcome of such a mining operation would be loss of a small number of desert tortoises and the long-term or permanent removal of habitat. If an operator proposed a mine that would have effects rising to the level of jeopardy or adverse modification of critical habitat, the Bureau has the regulatory authority to disapprove the proposal.

In summary, the California Desert Conservation Area Plan, the Northern and Eastern Colorado Plan and the Northern and Eastern Mojave Plan do not contain specific program guidance that would preclude mining in areas occupied by the desert tortoise. However, the Bureau's unnecessary and undue degradation standard provides some assurance that mining activity is unlikely to substantially degrade the baseline for the desert tortoise. Additionally, the Bureau has proposed, through the Northern and Eastern Colorado and Northern and Eastern Mojave plans, to limit new surface disturbance to one percent of its lands within each desert wildlife management area. This proposal, in conjunction with the Bureau's unnecessary and undue degradation standard and the low likelihood that large scale mines would be developed in numerous locations throughout the desert, should ensure that the program direction for mining activities does not substantially degrade the ability of the desert tortoise to survive and recover in the California desert or of its critical habitat to support these processes.

Motorized-vehicle Access and Transportation

Under the Bureau's existing guidance, vehicles would be allowed within Class C areas on a very infrequent basis. Where desert tortoises occur in Class C areas, such as in the proposed Shadow

Valley and Chemehuevi Desert Wildlife Management Areas, this program guidance will reduce the number of animals that are killed and injured by vehicles.

Under the Bureau's existing guidance, new roads and ways may be developed within Class L, M, and I lands. The development of new roads and ways could result in the loss of desert tortoises and fragmentation and loss of its habitat. All new roads increase the likelihood of invasion by non-native plant species and increase the level of access by people into habitat of the desert tortoise.

The Bureau's guidance allows the use of motorized vehicles on existing routes of travel until designation of routes is accomplished. The effects of vehicles using the existing routes of travel on the desert tortoise has already been discussed in this biological opinion. Vehicle use is likely to result in at least some mortalities of and injuries to desert tortoises; the extent of the loss is related to the condition of the road, the time of the year, the abundance of desert tortoises, and the awareness of the driver. Even the most careful drivers may occasionally strike a desert tortoise.

The extent of mortality of desert tortoises will increase as the density of roads increases. At some point, vehicle use on roads (and other activities that accompany vehicle use) would likely reduce the number of desert tortoises to a point where the level of mortality also decreases, simply because fewer desert tortoises live in the region.

The Bureau has proposed to reduce the number of existing open routes throughout the California Desert Conservation Area; route networks are proposed in the plans for the Northern and Eastern Colorado and Northern and Eastern Mojave bioregions and interim measures are in effect in the planning area of the West Mojave Coordinated Management Plan. In the Northern and Eastern Colorado plan, the Bureau proposes to close navigable washes as a class within the two desert wildlife management areas; however, the mileage of the washes to be closed is not available. Under the preferred alternative for the Northern and Eastern Colorado plan, 788 and 960 miles of routes would remain available for travel within the Chemehuevi and Chuckwalla Desert Wildlife Management Areas, respectively. In the Northern and Eastern Mojave plan, the Bureau proposes to designate 7,490 miles of open routes and 549 miles of limited routes within desert wildlife management areas; 521 miles of routes would be designated as closed. The process of route designation in this planning area is not complete. Future route designations in the planning area would follow the same process that has been used to date.

As the Bureau notes in Northern and Eastern Mojave and Northern and Eastern Colorado bioregional plans, the goal of the route networks is to allow access to most regions within the planning area to an extent that does not jeopardize the conservation and recovery of threatened and endangered species. Because desert tortoises can be killed or injured by vehicles and access routes introduce other direct and indirect effects on the species and its habitat, an access network that provides for large expanses of undisturbed habitat for the desert tortoise would seem to provide the best chance for recovery. The proposed reductions in the amount of open routes are

likely to provide some level of benefit to the desert tortoise. However, neither the Bureau or the Service have definitive information on how differing route networks affect the desert tortoise; obviously, roadless areas would have the least adverse effect on desert tortoises and their habitat. The extent that the changes in the access network affect the desert tortoise will be difficult to measure because of the slow reproductive rate of the species and other factors, such as disease, drought, and predation, that may be affecting the number of individuals in a region.

The Bureau's guidance allows cars and trucks to drive and park up to 300 feet from a route of travel in most of the California Desert Conservation Area; within desert wildlife management areas in the Northern and Eastern Colorado and Northern and Eastern Mojave planning areas, this distance will be reduced to 100 feet from the centerline of a route. Such off-road travel can crush desert tortoises, degrade habitat (particularly when vehicles need to be extracted from deep sand, damp areas, or rocky terrain), and cause the spread of non-native plant species. Neither we nor the Bureau can provide any quantitative information on how frequently desert users leave routes of travel for these distances to camp, stop, and park outside of existing disturbed areas. In at least some areas that are occupied by the desert tortoise, the density of vegetation would likely prevent most desert users from leaving the routes of travel.

The presence of routes of travel through or near the habitats of listed species presents an ongoing level of threat to these species from illegal vehicle use. Although the section 7 process is not intended to review illegal activities, unauthorized off-road use occurs at least partially as a result of authorized activities. We are aware of areas where unauthorized off-road vehicle use seems to be a common occurrence, as recreationists use legal routes to gain access and previously disturbed sites to stage and camp; these areas then serve as the center of a network of unauthorized routes.

Within Class L, M, and I lands, railroads and trams may be allowed. Under certain conditions, temporary landing strips may be allowed in Class L lands and airports and landing strips may be allowed within Class M and I lands. Railroads, temporary landing strips, and airports, if developed, could result in loss and fragmentation of habitat, loss of desert tortoises, and the spread of non-native species.

Recreation

The nature and intensity of recreational use allowed by the Bureau's program guidance increases from Class C through Class I lands. As an example, motorized vehicles are essentially prohibited in Class C areas but can travel anywhere within Class I areas that are designated as open.

The degree of threat posed to desert tortoises by recreation increases with the speed, weight, and numbers of recreational units. For example, a small group of hikers poses much less threat to the desert tortoise and its habitat than a race involving numerous all-terrain vehicles. However, the Bureau's program guidance generally allows the latter use only in Class I areas; the habitat values of these areas have been degraded by previous activity and impacts to the desert tortoise are now likely to be minimal.

In the Northern and Eastern Colorado planning area, the Bureau has proposed to maintain a corridor for competitive events along the Johnson Valley to Parker route. The western portion of the route does not cross or border any desert wildlife management areas and thus avoids areas with substantial numbers of desert tortoises. Along the eastern portion of the route, where it crosses Highway 95, the corridor is located along the southern border of the Chemehuevi Desert Wildlife Management Area. Riders may travel up to 100 feet from the center line of the established road on the side away from the desert wildlife management area; this off-road travel is likely to kill or injure desert tortoises and disturb habitat; it could also accelerate the spread of invasive species. Some potential also exists that recreationists would cause degradation of habitat in the area surrounding the end of the race, which also borders the desert wildlife management area. The proximity of an off-road event to the desert wildlife management area poses, at a minimum, an indirect threat to the stability of the area. Desert tortoises travel beyond the boundaries of reserve areas; invasive plants may have more ready access to reserves if habitat adjacent to these areas is disturbed. Given the precariousness of the desert tortoise in large areas of the California desert and the likelihood that declines will continue to spread at least for some time, the loss of even a few individuals could impede recovery of the species.

Unauthorized activities, particularly off-road vehicle use, have degraded desert tortoise habitat. The access provided by the Bureau for legitimate uses, such as recreation, facilitates some degree of unauthorized use. In addition to unauthorized roads and trails, areas that are frequently used for loading and unloading vehicles can be severely degraded.

Recreational use of the desert may benefit the desert tortoise in an indirect manner. Many people view the California desert as a unique place to enjoy nature and solitude; the enjoyment of this special place may promote actions on their part to assist in volunteer projects to restore habitats, clean up trash, report problems to the Bureau, and educate other users. The Bureau's own educational programs also strive for these goals.

Wildlife Species and Habitats

The basic guidance provided for wildlife management is likely to benefit the desert tortoise and its habitat; the Bureau's wildlife program is intended to enhance the quality of habitat and control pests and predators as needed. As specific projects are implemented, the potential exists that desert tortoises could be killed or injured by vehicular, foot traffic, or heavy equipment, as discussed for other types of actions in this biological opinion. We have already discussed the potential effects that chemical or mechanical manipulation may have on the desert tortoise. Desert tortoises can be killed in guzzlers if the ramps to the water are not properly constructed.

Baseline monitoring could adversely affect the desert tortoise if animals are crushed by workers traversing occupied habitat; minor ground disturbance and the spread of non-native plant species may also occur during monitoring. However, in general, the level of activity associated with monitoring would likely result in minor impacts; additionally, the information gained during such monitoring could be useful in management of the desert tortoise.

The control of predators and re-introduction or introduction of established exotic species is allowed on Class L, M, and I lands. Such manipulations of wildlife populations could have indirect effects on the desert tortoise and its habitat. For example, the control of predators could potentially cause an increase in the number of rapidly reproducing herbivorous species, which could then compete with desert tortoises for food.

The likelihood that the Bureau would approve the introduction of established exotic species into areas that are important for the recovery of the desert tortoise appears to be low. Additionally, we are unaware of any extensive control of predators on public lands in the California Desert Conservation Area Plan. Consequently, the Bureau's program guidance for wildlife may have a net beneficial effect on the desert tortoise.

Wilderness

Although many wilderness areas have been designated in steep, mountainous terrain that does not provide habitat for substantial numbers of desert tortoises, several wilderness areas contain important habitat for this species. As the Bureau (2002b) noted, 38 and 30 percent of the Chemehuevi and Shadow Valley Desert Wildlife Management Areas, respectively, have been designated as wilderness. The Bureau's guidance with regard to wilderness should ensure the level of activities that may occur in these areas will remain at a low intensity and result in minimal adverse effects to the desert tortoise and its habitat. In regions where they overlap, the management guidelines for wilderness will benefit the desert tortoise to a substantial degree, both by the limited amount of habitat-disturbing activities that would be likely to occur and by contributing to the integrity of the desert wildlife management areas.

Wild Horses and Burros

The Bureau's program guidance for wild horses and burros calls for the maintenance of healthy, stable herds that are subject to controls to protect sensitive resources. Generally, the effects of wild horses and burros on the desert tortoise are similar to those of cattle. Desert tortoises and their burrows can be crushed; vegetation needed for forage and shelter can be consumed and otherwise damaged. To the best of our knowledge, horses do not occur within areas that are considered important to the long-term survival of the desert tortoise.

Desert tortoises can also be killed or injured and their habitat disturbed when burros are removed from public lands. The extent of the impact would vary, depending on the method of removal that is used. For example, water trapping of burros would likely not affect desert tortoises to a great degree because the capture is passive. The capture of burros through horseback wrangling, helicopter-assisted roping and trapping, and net gunning could result in trampling of desert tortoises and some degradation of habitat because the burros would be attempting to escape and would likely not be as aware of desert tortoises or their burrows. We cannot predict how many desert tortoises would be killed or injured by horseback wrangling, helicopter-assisted roping and trapping, and net gunning because these activities occur when and where the burros are found.

Pre-round-up inventories of desert tortoises are not possible because they would delay the round-up and likely cause the burros to move into different areas.

The Bureau has proposed several measures to manage burros that are likely to benefit the desert tortoise. As an interim measure, the Bureau will place a high priority on the removal of burros from habitat of threatened or endangered species. In the Northern and Eastern Mojave plan, the Bureau has proposed to eliminate burros from the Clark Mountain Herd Management Area, which includes the proposed Shadow Valley Desert Wildlife Management Area. In the Northern and Eastern Colorado plan, the Bureau would eliminate the Piute Herd Area, reduce the size of the Chemehuevi Herd Management Area to avoid overlap with critical habitat of the desert tortoise, and restrict the Chocolate/Mule Mountains Herd Area and Herd Management Area to southeast of Highway 78 to avoid overlap with the Chuckwalla Desert Wildlife Management Area. The latter herd area would continue to overlap critical habitat of the desert tortoise southeast of Highway 78.

The removal of burros from the Shadow Valley, Chemehuevi, and most of the Chuckwalla recovery areas should substantially improve the ability of these areas to support the survival and recovery of the desert tortoise. Desert tortoises within the remaining proposed herd management areas would continue to be affected by burros. With the exception of the Chocolate/Mule Mountains Herd Area and Herd Management Area, which would overlap the portion of the Chuckwalla Critical Habitat Unit southeast of Highway 78, all herd management areas lie outside of critical habitat for the desert tortoise. The Bureau's proposal to monitor the current management levels of burros and to adjust them as necessary should ensure that the number of burros does not increase to the point that habitat within the herd management areas is degraded.

Natural and Artificial Waters and Exclosures

The Bureau constructs and maintains artificial waters and exclosures to enhance wildlife populations, particularly those of game species. The construction and maintenance of these features could cause disturbance or loss of a minimal amount of habitat and pose some risk of mortality or injury to desert tortoises. Desert tortoises have, in the past, drowned or been trapped in certain types of watering devices, when the slope of the device to the water's surface was steep and slippery with algae; since this situation was detected, new waters have been built in a manner that should prevent such mortalities.

The potential exists that an enhanced water supply for wildlife could increase the density of predators and other herbivores to the extent that the predation rate on desert tortoises and use of their food resources increase. However, we have not observed that such increases in the numbers of other native species have affected the desert tortoise. Conversely, during periods of drought, some predators may target desert tortoises as the abundance of other prey species decreases; the presence of maintained waters during droughts may alleviate the effects of drought, at least on a local basis. Maintained waters may also assist the dispersal of common ravens. Maintained waters, if designed correctly, could provide a locally important source of water for desert tortoises.

Miscellaneous Activities

The Bureau will occasionally undertake, authorize, or fund activities that were not specifically addressed by a particular element or land use activity in the California Desert Conservation Area Plan; the Bureau can also amend the California Desert Conservation Area Plan to allow for an activity that had not been previously considered. For example, a new utility corridor could be proposed as part of a specific future project. We recognize the development of program-level guidance relevant to every potential activity that could occur in the California Desert Conservation Area is not feasible. However, actions approved without guidance that addresses the specific needs of the desert tortoise and its habitat could cumulatively lead to irreversible degradation of the species' condition.

Summary

The amended California Desert Conservation Area Plan provides general guidance to the Bureau for its management of activities within the California Desert Conservation Area. Some guidelines for the multiple-use classes and elements clearly promote the conservation of the desert tortoise and its habitat; for example, prohibiting development of nuclear and fossil fuel plants within Class C and L lands provides a level of protection. Other guidelines for the multiple-use classes and elements allow activities to occur that could have substantial adverse effects on desert tortoises; as an example, the guidelines allow the development of wind and solar plants within Class L lands. However, except for casual uses (*e.g.*, casual mining exploration, vehicle use on existing roads, hiking, vehicle camping along existing roads), activities and projects will receive site-specific environmental review and consultation with the Service, pursuant to section 7(a)(2) of the Act. Therefore, all activities and projects, except casual uses, may be denied, modified, or mitigated to reduce adverse effects to listed species.

This biological opinion also addresses the actions proposed in the bioregional plans for the Northern and Eastern Mojave and Northern and Eastern Colorado deserts. These plans were developed with the intention of implementing various aspects of the recovery plan for the desert tortoise. The following discussion summarizes important components of the bioregional plans and their effects on the desert tortoise and its critical habitat.

The Bureau's proposal to designate all lands within desert wildlife management areas as Class L should provide increased protection to the desert tortoise and its habitat over that currently provided by Class M guidance; however, the Bureau can authorize actions within Class L areas that could degrade habitat and kill desert tortoises. The proposal to limit the cumulative amount of ground disturbance to one percent should ensure that the vast majority of public lands within the desert wildlife management area is managed for the conservation of the desert tortoise.

The designation of routes in desert wildlife management areas, with an overall reduction in the amount of the road network, should benefit the desert tortoise. As we mentioned previously, determining the extent that the change in routes affects the desert tortoise may be difficult to

measure. The closure of all navigable washes within desert wildlife management areas in the Northern and Eastern Mojave planning area is likely to provide a substantial benefit because a source of potential mortality will be eliminated. The Bureau also proposes to close some of the washes in the Northern and Eastern Colorado planning area; however, some washes will remain open, posing at least some level of threat to the desert tortoise.

In the Northern and Eastern Mojave planning area, the desert tortoise will benefit from the Bureau's proposal to not authorize temporary non-renewable grazing use, to allow the voluntary relinquishment of grazing leases and related authorizations, and to terminate ephemeral allotments and ephemeral authorizations for ephemeral/perennial allotments. In the Northern and Eastern Colorado planning area, the Lazy Daisy Allotment will be reduced by approximately 20,000 acres; this portion of the allotment does not contain any water for cattle and is subsequently grazed infrequently. The remainder of the allotment can be voluntarily relinquished if the lessee so desires. All of these actions will result in decreased impacts to the desert tortoise from trampling by cattle and competition for forage. The decrease in habitat disturbance associated with cattle may slow the spread of non-native plant species and possibly allow for increased vigor and abundance of native species that are an important food source for the desert tortoise. The removal of burros from substantial areas of critical habitat will benefit the desert tortoise and its habitat in much the same manner.

The acquisition of private lands within desert wildlife management areas will remove at least some threats that desert tortoises may face on non-federal lands; this acquisition will also facilitate the Bureau's management. Programs to educate visitors about the desert tortoise and how they can assist in conserving the species will also promote recovery of the species.

Any consideration of the effects of an action on a species must consider the scale of those effects; that is, how much of the species' range would be compromised or enhanced by the proposed action. The range of the desert tortoise is vast; the recovery units themselves cover extensive areas. However, the scale of the California Desert Conservation Area Plan is also vast. Its goal is to provide for the use of public lands and resources in a manner that enhances, where possible, and does not diminish, on balance, the environmental, cultural, and aesthetic values of the desert and its productivity (Bureau 1999).

The immensity of the range of the desert tortoise assists in achieving this balance; although the Bureau has authorized many projects under the guidance of the California Desert Conservation Area Plan, large expanses of undisturbed habitat remain. As we noted in the Status of the Species section of this biological opinion, however, the number of desert tortoises has declined over large portions of the range. We cannot, at this time, determine the exact cause of this decline although upper respiratory tract disease is likely a factor; drought and human-induced perturbations are likely additional factors that contribute to the species' decline.

The California Desert Conservation Area Plan, as amended, and modified by interim measures and the proposed Northern and Eastern Mojave and Northern and Eastern Colorado plans

provides guidance, including the requirement to consider the needs of listed species, sufficient to ensure the survival and recovery of the desert tortoise in the Eastern Colorado, Northern Colorado, and Eastern Mojave Recovery Units. However, recent declines in this region prompt concern, because the number of desert tortoises had remained relatively high and stable during the 1980s and 1990s when the number of desert tortoises in the western Mojave Desert was decreasing.

The interim measures proposed for the West Mojave Recovery Unit are protective of the desert tortoise. However, a long-term management program for this region of the California desert awaits the adoption and implementation of the West Mojave Coordinated Management Plan; the continued delay in implementing a comprehensive management program in this region will certainly delay, at best, the recovery of the desert tortoise. The ongoing decline of desert tortoises in this region exacerbates the difficulty in achieving recovery of the species.

In summary, the actions in the Northern and Eastern Colorado and Northern and Eastern Mojave bioregional plans were proposed with consideration of the Bureau's mandates to manage public lands and after careful evaluation of the current situation in these areas and input from the public and numerous agencies. These issues are also being discussed during the development of the West Mojave Coordinated Management Plan. However, the cause of the recent declines in the number of desert tortoises across California has not been identified. Consequently, the mechanisms needed to reverse these declines are also unknown. The potential exists that reversal of the decline of the desert tortoise may require substantial additional management.

CUMULATIVE EFFECTS

Cumulative effects include the effects of future State, tribal, local, or private actions that are reasonably certain to occur in the action area considered in this biological opinion. Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the Act. We are unaware of any non-federal actions that are reasonably certain to affect the desert tortoise within the action area.

CONCLUSION

After reviewing its current status, the environmental baseline for the action area, the effects of the proposed action, and the cumulative effects, it is our biological opinion that continued implementation of California Desert Conservation Area Plan, as modified by previous amendments, previous consultations on grazing, the proposed Northern and Eastern Mojave and Northern and Eastern Colorado bioregional plans, and the interim measures, is not likely to jeopardize the continued existence of the desert tortoise or to destroy or adversely modify its critical habitat.

We have reached these conclusions because the Bureau has proposed and, in some cases, implemented, measures to avoid or minimize adverse effects and to further the conservation of the desert tortoise. These measures include, but are not limited to, the creation of desert wildlife management areas, reduction in the amount of livestock grazing, removal of burros, and acquisition of private lands. Finally, every future discretionary action that the Bureau would undertake, authorize, or fund that may affect the desert tortoise is subject to the requirements of section 7(a)(2) of the Act. Program guidance in the California Desert Conservation Area Plan clearly states that the Bureau would comply with the Act; this compliance includes following the guidance provided by all biological opinions provided by the Service.

INCIDENTAL TAKE STATEMENT

Section 9 of the Act and Federal regulation pursuant to section 4(d) of the Act prohibit the take of endangered and threatened species, respectively, without special exemption. Take is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. Harm is further defined by the Service to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering. Harass is defined by the Service as intentional or negligent actions that create the likelihood of injury to listed species by annoying it to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered to be prohibited taking under the Act provided that such taking is in compliance with the terms and conditions of this incidental take statement.

The measures described below are non-discretionary and must be undertaken by the Bureau or made binding conditions of any authorization provided to permittees. The Bureau has a continuing duty to regulate the activities covered by this incidental take statement. If the Bureau fails to assume and implement the terms and conditions of the incidental take statement or to make them enforceable terms of permit or grant documents, the protective coverage of section 7(o)(2) may lapse. To monitor the impact of incidental take, the Bureau must report the progress of its action and their impact on the species to the Service as specified in the incidental take statement [50 CFR 402.14(i)(3)].

The California Desert Conservation Area Plan and the Northern and Eastern Mojave and Northern and Eastern Colorado bioregional plans describe numerous programs under which the Bureau will need to make specific decisions with regard to future actions. Although we have evaluated the general nature of the effects of these actions, both negative and positive, on listed species, we cannot assess the potential effects of specific actions because information on the location, timing, nature, and other aspects of the actions are not known at this time. Consequently, we cannot provide an exemption from the prohibitions against take, as described in section 9 of the Act, for the incidental take that may result from these actions.

Given this limitation, this biological opinion provides an exemption from the prohibitions against take for the incidental take of desert tortoises that may result from management of burros, direct mortality or injury by livestock (but not including new range developments or harm, as defined in the first paragraph of this section), entrapment in managed waters and guzzlers, and casual use associated with recreation and mining authorized or implemented by the Bureau within the California Desert Conservation Area. Many of the actions that will not require further consultation are likely to occur in disturbed areas (*e.g.*, at least some camping off roads) or will not, by their nature, cause removal of habitat (*e.g.*, removal of burros, hiking). We anticipate that grazing, management of burros, entrapment in managed waters and guzzlers, and casual use associated with recreation and mining are likely to result in relatively few mortalities of or injuries to desert tortoises. We cannot anticipate the precise numbers of desert tortoises that may be killed or injured because of the large size of the action area, the patchy distribution of desert tortoises within the California Desert Conservation Area, and the unpredictability of when these activities will cause injury of or mortality to desert tortoises.

To ensure that the measures proposed by the Bureau are effective and are being properly implemented, the Bureau shall contact the Service immediately if a desert tortoise is killed or injured. At that time, the Service and the Bureau shall review the circumstances surrounding the incident to determine whether additional protective measures are required. Grazing, the removal of burros, the use of managed waters and guzzlers, and casual use associated with recreation and mining may continue pending the outcome of the review, provided that the Bureau's proposed protective measures and any appropriate terms and conditions of this biological opinion have been and continue to be fully implemented.

If more than five desert tortoises are found dead or injured in any 12-month period as a result of any specific activity or circumstance, the Bureau shall contact the Service to determine whether formal consultation should be re-initiated on that aspect of the California Desert Conservation Area Plan. This threshold is intended to determine whether certain activities or circumstances (*e.g.*, desert tortoises being trapped in cattle guards or killed along one portion of a road) may be affecting desert tortoises more substantially than we anticipated. The threshold would not be used in situations that we would reasonably expect to occur and that have been considered by the Bureau and Service during this consultation (*e.g.*, desert tortoises being consumed by common ravens).

REASONABLE AND PRUDENT MEASURES

The Service believes the following reasonable and prudent measures are necessary and appropriate to minimize take of the desert tortoise during activities related to grazing, management of burros, and casual use associated with recreation and mining:

1. The Bureau shall issue annual authorizations for livestock grazing only if the permittee is in full compliance with the terms and conditions of the previous biological opinions on grazing, as modified by the Bureau's proposed action.

2. The Bureau shall ensure that only qualified personnel are allowed to handle desert tortoises, conduct clearance surveys, and monitor for compliance with the protective measures proposed by the Bureau and the terms and conditions of this biological opinion.
3. The Bureau shall avoid and minimize take of desert tortoises during removal of burros.
4. The Bureau shall provide information on the desert tortoise to anyone requesting information on casual use associated with recreation and mining.
5. The Bureau shall determine the level of desert tortoise mortality associated with wildlife guzzlers and other managed waters and take measures to minimize this mortality.

The Service's evaluation of the effects of the proposed action includes consideration of the measures developed by the Bureau and repeated in the Description of the Proposed Action portion of this biological opinion, to minimize the adverse effects on the desert tortoise of grazing, management of burros, and casual use associated with recreation and mining. We also considered the management of grazing that occurs under the Service's previous biological opinions, as modified by Bureau proposals described in this biological opinion. Any subsequent changes in the minimization measures proposed by the Bureau or in the conditions under which cattle grazing currently occurs may constitute a modification of the proposed action and may warrant re-initiation of formal consultation, as specified at 50 CFR 402.16. These reasonable and prudent measures are intended to clarify or supplement the protective measures that were proposed by the Bureau as part of the proposed action.

TERMS AND CONDITIONS

To be exempt from the prohibitions of section 9 of the Act, the Bureau must comply with or ensure that any permittee complies with the following terms and conditions, which implement the reasonable and prudent measures described above and outline reporting and monitoring requirements. These terms and conditions are non-discretionary.

In the following terms and conditions, an authorized biologist is a biologist who can demonstrate to the Service that he or she has substantial field experience and training to handle and relocate desert tortoises, reconstruct burrows, and relocate eggs; an authorized biologist can also demonstrate that he or she possesses the skills described for an approved biologist. An approved biologist is an individual who can demonstrate, through training and field experience, that he or she can detect the presence of desert tortoises through observations of animals, sign, scat, and burrows. An approved biologist shall also have the ability and skill to monitor projects for compliance as described in the Bureau's protective measures and the terms and conditions of this biological opinion.

1. The following terms and conditions implement reasonable and prudent measure 1:
 - a. The Bureau shall prepare an annual report to be delivered to the Service by April 15 that addresses the previous grazing year ending February 28. The report shall provide, for each allotment in desert tortoise habitat, a brief summary of: the level of utilization of perennial plants; the actual amount of grazing use (*i.e.*, animal units months); trend data on plant communities in grazed areas; management actions and grazing decisions taken to adjust grazing use; management actions taken to address conflicts with the desert tortoise; the results of construction and replacement of range facilities; and the circumstances regarding any desert tortoises known to have been injured and killed due to livestock grazing. In addition, any public land health determinations made for grazing allotments shall be attached to the annual report.
 - b. In the cattle allotments in the West Mojave Recovery Unit, if the measures contained in the previously issued biological opinion (1-8-94-F-17, attached), as modified by the proposed action described in this biological opinion, have not been fully implemented, the Bureau shall bring the allotment into legal compliance within one month. Alternatively, the Bureau shall suspend the permit and remove grazing from the affected area until the allotment is in compliance.
 - c. If an allotment fails to meet the public land health standards based on current livestock use in habitat of the desert tortoise, the Bureau shall remove grazing from the affected areas until the public land health standards are met. This grazing decision shall be reviewed by the Service through, at a minimum, informal consultation.
2. The following terms and conditions implement reasonable and prudent measure 2:
 - a. Only biologists authorized by the Service under the auspices of this biological opinion shall handle desert tortoises.
 - b. All handling of desert tortoises and their eggs, relocation of desert tortoises, and excavation of burrows shall be conducted by an authorized biologist in accordance with recommended protocol (Desert Tortoise Council 1999).
 - c. Only biologists approved or authorized by the Service under the auspices of this biological opinion shall conduct pre-project clearance surveys for the desert tortoise or monitor project activities for compliance with the proposed protective measures.
 - d. The Bureau shall submit the names(s) and credentials of the proposed biologist(s) to the Service for review and approval at least 30 days prior to the onset of activities. No activities shall begin until a biologist is approved by the Service.

3. The following term and condition implements reasonable and prudent measure 3:

When burros are being removed from within desert tortoise habitat, the Bureau shall have authorized or approved biologists present, as appropriate, to ensure desert tortoises are moved from harm's way or avoided, if necessary. These protective measures for the desert tortoise shall be implemented when the removal of burros is likely to result in concentrated activity by horses, burros, or workers or ground disturbance.

4. The following term and condition implements reasonable and prudent measure 4:

The Bureau shall provide information on the desert tortoise, its status, the protection it receives under the Endangered Species Act, and the actions that can be taken to avoid killing or injuring desert tortoises when working or recreating in the desert to anyone requesting information on casual use associated with recreation and mining.

5. The following terms and conditions implement reasonable and prudent measure 5:

- a. Within 2 years of issuance of this biological opinion, the Bureau shall inventory all guzzlers located within desert tortoise habitat and assess their potential to trap desert tortoises. The assessment of the potential to trap desert tortoises shall be based on the design of the guzzler and the abundance of desert tortoises within the area of the guzzler.
- b. Within 3 years of the issuance of this biological opinion, the Bureau shall retrofit all guzzlers that have been identified as having the potential to trap desert tortoises.
- c. The Bureau shall retrofit all other guzzlers within desert tortoise habitat within 5 years of the issuance of this biological opinion.
- d. If a desert tortoise is found trapped in any managed water or guzzler, the water or guzzler shall be retrofitted within four weeks. If the water or guzzler cannot be retrofitted within that time frame, it shall be fenced to preclude entry by desert tortoises.

REPORTING REQUIREMENTS

By January 31 of each year this biological opinion is in effect, the Bureau shall provide a report to the Service that provides details on each desert tortoise that is found dead or injured. The information shall include the location of each mortality, the circumstances of the incident, and any actions undertaken to prevent similar instances from occurring in the future. The annual report shall also describe activities that the Bureau implemented (*e.g.*, the amount of road maintained, habitat restored, *etc.*) within habitat of the desert tortoise. The annual reports shall

also evaluate the range conditions that are specified in the previously issued biological opinions for grazing in the California Desert Conservation Area.

CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the Act directs Federal agencies to use their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop information.

The California Desert Conservation Area Plan provides the Bureau with management direction for the entire range of the desert tortoise in California and thereby has a profound effect on its survival and recovery. However, as it is written, the California Desert Conservation Area Plan is structured to a great degree to rely on section 7(a)(2) consultation to avoid jeopardy or adverse modification of critical habitat, rather than to establish a program that promotes recovery of listed species in conformance with section 7(a)(1) of the Act. The Northern and Eastern Mojave and Northern and Eastern Colorado bioregional plans provide more emphasis on the conservation of the desert tortoise while allowing for use of the desert. To address the extent that these plans implement the recommendations in the recovery plan, we have excerpted the management recommendations provided in the recovery plan (in bold, in the following text) and compared them with the measures proposed in the Northern and Eastern Colorado and Northern and Eastern Mojave plans.

Establish at least one desert wildlife management area of at least 1,000 square miles in each recovery unit. In the Northern and Eastern Colorado plan, the preferred alternative includes the 1,367-square mile Chemehuevi Desert Wildlife Management Area within the Northern Colorado Recovery Unit; 1,275 miles of the desert wildlife management area are managed by the Bureau. The preferred alternative also includes the 1,281 square mile Chuckwalla Desert Wildlife Management Area in the Eastern Colorado Recovery Unit; 727 square miles are managed by the Bureau and 293 square miles are within the Chuckwalla Mountains Aerial Gunnery Range and managed by the U.S. Marine Corps.

In the Northern and Eastern Mojave plan, the preferred alternative includes the 272-square mile Piute-Fenner and the 158-square mile Shadow Valley desert wildlife management areas within the Eastern Mojave Recovery Unit. Within the Northeastern Recovery Unit, an Ivanpah Desert Wildlife Management Area of approximately 57 square miles has been proposed. Although these Desert Wildlife Management Areas are smaller than the size recommended in the recovery plan, they are connected to the Mojave National Preserve which is managed in the manner of a desert wildlife management area.

Connect functional habitat within recovery units wherever enough extant desert tortoise habitat exists. Within the Northern and Eastern Mojave planning area, the desert wildlife management areas proposed by the Bureau connect across the Mojave National Preserve, which

is managed by the National Park Service. Consequently, we consider these desert wildlife management areas to be connected adequately.

Within the Northern and Eastern Colorado planning area, the Chuckwalla Desert Wildlife Management Area proposed by the Bureau is directly connected to the southern portion of Joshua Tree National Park. As a result of discussions with the Service, the Bureau has proposed to extend a wildlife habitat management area located north of Interstate 10 to the north-central portion of the Chuckwalla Desert Wildlife Management Area. The extended and other wildlife habitat management areas and wilderness areas would provide a connection, where suitable habitat is present, to the Chemehuevi Desert Wildlife Management Area. Consequently, we consider these desert wildlife management areas to be connected adequately.

Additionally, the Piute-Fenner Desert Wildlife Management Area in the Eastern Mojave Recovery Unit abuts the Chemehuevi Desert Wildlife Management Area in the Northern Colorado Recovery Unit over a considerable distance along Interstate 40. This connectivity should be enhanced when fencing is constructed. In all of the circumstances discussed above, connections among populations of desert tortoises should persist among both desert wildlife management areas and their recovery units.

All vehicle activity off of designated roads. The bioregional plans allow vehicles to travel up to 100 feet from the centerline of designated roads to stop, park, and camp; the current guidelines in the California Desert Conservation Area Plan allow for vehicles to travel up to 300 feet from the edge of roads. Although the proposed measures are more protective than the current guidelines, they would continue to place desert tortoises at risk of injury or mortality and result in some degree of habitat degradation. We recommend that the distance vehicles be allowed to travel from designated roads be reduced to 15 feet; this distance is consistent with guidelines being implemented in on Bureau lands in Nevada. If previously disturbed areas are available that extend beyond 15 feet from the road's centerline, vehicles may use these sites.

Riders participating in the Johnson Valley to Parker race should be required to stay on the existing road where the race corridor borders of the southern portion of the Chemehuevi Desert Wildlife Management Area. By eliminating off-road travel in this area, the likelihood that desert tortoises would be killed or injured would be reduced. Additionally, restricting riders to the established road would reduce habitat disturbance adjacent to the desert wildlife management area and possibly reduce the likelihood of invasion by exotic species.

All competitive and organized events on designated roads. No competitive events are proposed for the desert wildlife management areas. Organized, non-competitive events on designated routes of travel are allowed. Our experience with organized, non-competitive events, such as dual sport rides, in the western Mojave Desert is that disturbance of habitat is minimal (if it occurs at all); we are unaware of any injuries or mortalities of desert tortoises that have occurred during these events. We acknowledge that some level of mortality or injury may be undetected. However, given that the events occur on existing roads and are usually conducted

when most desert tortoises are inactive, we anticipate that impacts are minimal. Allowing low-impact uses likely indicates to recreationists that at least some activities can co-exist with listed species. As a result, conservation programs may receive support from users of the desert.

Habitat destructive military maneuvers. The Bureau has not proposed any such activities on its lands.

Clearing for agriculture, landfills, and any other surface disturbance that diminishes the capacity of the land to support desert tortoises, other wildlife, and native vegetation. The current guidelines prohibit agriculture and landfills within Class C and L lands. All lands within desert wildlife management areas will be designated as Class L. Therefore, agriculture and landfills would be prohibited by the Bureau's existing guidelines. We recognize that prohibiting all surface disturbance is not feasible. As an example, this recommendation would preclude even routine maintenance of existing pipelines. The Bureau's mandate requires the management of its lands in a manner that conserves biological resources while allowing for sustained use. The proposal to allow at most one percent of the existing undisturbed habitat to be lost or disturbed should be highly protective of the desert tortoise and its habitat. The one percent proposal for maximum allowable ground disturbance stems from information gathered in the western Mojave Desert; approximately one percent of the areas that are likely to be proposed as desert wildlife management areas has been disturbed or lost to date. Given the protective measures proposed for the desert wildlife management areas in the Northern and Eastern Colorado and Northern and Eastern Mojave plans, we anticipate that the vast portions of the desert wildlife management areas will remain available for conservation of the desert tortoise.

Domestic livestock grazing. Although the number and size of allotments has decreased since issuance of the recovery plan, the preferred alternative in the bioregional plans includes several cattle allotments. Livestock grazing within desert wildlife management areas will continue to degrade, to some degree, habitat of the desert tortoise. We support the Bureau's selection of a preferred alternative that allows for the relinquishment of the ranchers' permits and subsequent retirement of the allotments. We recommend that the Bureau maintain communication with the ranchers to ensure that allotments are retired at the earliest possible opportunity.

Wild horse and burro grazing. All burros and wild horses would be removed from desert wildlife management areas.

Vegetation harvest, except by permit; collection of biological specimens, except by permit. The current guidelines allow vegetation harvesting, including collection of biological specimens (plants), by permit only within Class L lands. All lands within desert wildlife management areas will be designated as Class L. Therefore, the proposed plans are consistent with the recovery plan with regard to plants.

Dumping and littering. These activities are illegal. As such, the Bureau cannot permit them.

Deposition of captive or displaced desert tortoises or other animals, except under authorized translocation research projects. The Bureau does not propose any such activities.

Uncontrolled dogs out of vehicles. The Bureau does not propose any measures with regard to dogs. Discussions with Bureau staff, including personnel from its law enforcement division, has led us to understand that the issue of uncontrolled dogs is difficult. Whether a dog is uncontrolled can be difficult to qualify; requiring all dogs to be on leashes provides for clear regulation but is likely to be unnecessary in most cases and would reduce support for conservation efforts. We recommend that the Bureau's law enforcement staff coordinate with biologists to understand how dogs may adversely affect desert tortoises and consider the actions of dogs and their owners while in the field. We also recommend that the Bureau institute a program to remove feral dogs from the desert, in cooperation with county governments and military installations. In recent years, feral dogs have been observed interfering with desert tortoises on several occasions; they likely pose a much greater threat to desert tortoises than those of people recreating in the desert.

Discharge of firearms, except for hunting of big game or upland game birds from September through February. The Bureau did not propose any measures to address discharge of firearms associated with hunting or general shooting in the planning areas (Foreman pers. comm.). Information from long-term study plots in the two planning areas indicates that few desert tortoises died from gunshot wounds. Additionally, the Bureau does not regulate hunting. The responsibility for setting hunting seasons lies with the California Department of Fish and Game; within the Mojave National Preserve, the California Department of Fish and Game opposed any change in the established hunting season. Data are not available on either the level of hunting that occurs in this region of the desert or the number of desert tortoises that are killed as a result of hunting. Given the data collected on the study plots, we concur with the Bureau that the discharge of firearms does not seem to threaten desert tortoises within the two planning areas at this time.

Restrict establishment of new roads in desert wildlife management areas. New roads may be established as part of proposed actions; they would receive full analysis during the environmental review of these projects. In general, the extent of roads will be reduced under the preferred alternatives in both plans.

Fence or otherwise establish effective barriers to desert tortoises along heavily-traveled roads; install culverts that allow underpass of desert tortoises to alleviate habitat fragmentation. In the Northern and Eastern Mojave and Northern and Eastern Colorado plans, the California Department of Transportation is identified as the lead agency for fencing Interstates 10, 15, and 40 and for fencing and installing culverts under Highway 95; the time frames for completing this work are noted as 20 years for Interstates 10, 15, and 40 and when Highway 95 is widened to four lanes. The Service and Federal Highway Administration have completed formal consultation on the reach of Interstate 15 through critical habitat south of Mountain Pass; this portion of Interstate 15 will likely be fenced within the next year. Desert

tortoises will continue to be killed as they attempt to cross the other roads; consequently, delays in fencing the remaining roads will hinder recovery efforts in the planning areas.

Surface disturbance in desert wildlife management areas should be restored to pre-disturbance conditions. In the Northern and Eastern Mojave and Northern and Eastern Colorado plans, the Bureau proposes to track restoration of disturbance on a case-by-case basis. The imposition of a one percent limit on the allowable ground disturbance should encourage agencies to restore additional lands. The Bureau is pursuing the recovery plan's recommendations with regard to restoration; however, the success of restoration efforts in the desert depends on many factors and, even in the best situations, restoration to pre-disturbance conditions will require decades.

Sign and fence desert wildlife management areas as needed. Both bioregional plans propose these actions.

Establish environmental education programs and facilities. Both bioregional plans propose to develop education programs within 5 years. We support the concept but encourage the Bureau to attempt to try to complete the programs in less time. Public support of recovery efforts is an important aspect of their success; such support will likely be more forthcoming if comprehensive environmental education programs and facilities are widely available.

We also offer the following recommendations:

Abandoned Adits and Mines. The Bureau should inspect any abandoned mine or adit it discovers to determine whether desert tortoises could be trapped. Any such mines or adits should be filled or fenced to preclude entry by desert tortoises.

Aquatic invertebrates. Finally, we recommend that the Bureau conduct thorough inventories of all natural water sources before they are modified or enhanced for game species or for any other purpose. Many springs in the desert support unique assemblages of invertebrates that could be extirpated if the water source is altered. If such assemblages are found, modifications of the spring should be avoided or conducted in a manner that protects these assemblages.

The Service requests notification of the implementation of any conservation recommendations so we may be kept informed of actions minimizing or avoiding adverse effects or benefitting listed species or their habitats.

REINITIATION NOTICE

This concludes formal consultation on the California Desert Conservation Area Plan, as amended, and proposed for modification. Reinitiation of formal consultation is required where discretionary federal involvement or control over the action has been retained or is authorized by law and: (a) if the amount or extent of taking specified in the incidental take statement is

exceeded; (b) if new information reveals effects of the action that may affect listed species or critical habitat in a manner or to an extent not previously considered; (c) if the identified action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in the biological opinion; or (d) if a new species is listed or critical habitat designated that may be affected by the identified action.

If you have any questions regarding this biological opinion, please contact Ray Bransfield of our Ventura Fish and Wildlife Office at (805) 644-1766, George Walker of our Barstow Fish and Wildlife Office at (760) 255-8852, or Pete Sorensen of our Carlsbad Fish and Wildlife Office at (760) 431-9440.

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TABLE 1 MULTIPLE-USE CLASS GUIDELINES

LAND USE ACTIVITIES	MULTIPLE-USE CLASS C Controlled Use	MULTIPLE-USE CLASS L Limited Use	MULTIPLE-USE CLASS M Moderate Use	MULTIPLE-USE CLASS I Intensive Use
1. AGRICULTURE (no effect)	Agricultural uses (excluding livestock grazing) are not allowed			
2. AIR QUALITY (no effect)	These areas will be managed to protect their air quality and visibility in accordance with Class II objectives of Part C of the Clean Air Act Amendments unless otherwise designated another class by the State of California as a result of recommendations developed by any air-quality management plan developed by the Bureau.			
3. WATER QUALITY (no effect)	These areas will be managed to maintain and enhance both surface and ground-water resources.	Areas in this class will be managed to provide for the protection and enhancement of surface and ground water resources, except for instances of short-term degradation caused by water development projects. Best management practice, developed by the Bureau during the planning process outlined in the Clean Water Act Section 208, and subsequently , will be used to avoid degradation and to comply with Executive Order 12088	Areas designated in this class will be managed to minimize degradation of water resources. Best management practices, developed by the Bureau during the planning process outlined in the Clean Water Act, Section 208, and subsequently, will be used to keep impacts on water quality minimal and to comply with Executive Order 12088	
4. CULTURAL AND PALEONTOLOGICAL RESOURCES	Archaeological and paleontological values will be preserved and protected. Procedures described in 36 CFR 800 will be observed where applicable. A Memorandum of Agreement has been signed by the Bureau, the California State Historic Preservation Officer, and for cultural resources the President's Advisory Council on Historic Preservation to protect cultural resources.			
5. NATIVE AMERICAN VALUES	Native American cultural and religious values will be preserved where relevant and protected where applicable. Native American group(s) will be consulted. Memorandums of agreement and understandings have been signed between the Bureau and the Native American Heritage Commission pertaining to Native American concerns and cultural resources.			
6. ELECTRICAL GENERATION FACILITIES	Electric generation plants are not allowed (no effect)	Electric generation plants may be allowed. (See wind/solar/ geothermal, below)	All types of electrical generation plants may be allowed in accordance with State, Federal, and local laws.	
	(Same as Class L, M, and I)	Existing facilities may be maintained and upgraded or improved in accordance with special-use permits or by amendments to rights-of-way		
Nuclear and Fossil Fuel	Not allowed (no effect)		May be allowed in accordance with Federal, State and local laws.	

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LAND USE ACTIVITIES	MULTIPLE-USE CLASS C Controlled Use	MULTIPLE-USE CLASS L Limited Use	MULTIPLE-USE CLASS M Moderate Use	MULTIPLE-USE CLASS I Intensive Use
ELECTRICAL GENERATION FACILITIES (CONT.)				
Wind/Solar	Not allowed (no effect)	May be allowed after requirements of the National Environmental Policy Act (NEPA) are met		
Geothermal	Not allowed (no effect)	May be allowed pursuant to licenses issued under 43 CFR Section 3250, <i>et seq.</i> NEPA requirements will be met.		
7a. TRANSMISSION FACILITIES	New transmission facilities for electricity, gas, water and telecommunication are not allowed and new licenses or rights-of-way for these purposes will not be granted, except as provided for in the Wilderness Act of 1964 ---16 USC 1133(d)(4) or as may be specified by Congress (no effect)	New gas, electric, and water transmission facilities and cables for interstate communication may be allowed only within designated corridors (see Energy Production and Utility Corridors Element). NEPA requirements will be met.		
	Existing facilities may be maintained subject to a Wilderness Management Plan.	Existing facilities within designated corridors may be maintained and upgraded or improved in accordance with existing rights-of-way grants or by amendments to right-of-way grants. Existing facilities outside designated corridors may only be maintained but not upgraded or improved.		
7b. DISTRIBUTION FACILITIES	New licenses or rights-of-way for distribution facilities to serve private properties will not be granted. (no effect) Existing facilities may be maintained or improved but not expanded.	New distribution systems may be allowed and will be placed underground where feasible except where this would have a more detrimental effect on the environment than surface alignment. In addition, new distribution facilities will be placed within existing rights-of-way where they are reasonably available	New distribution facilities may be allowed and will be placed within existing rights-of-way where they are reasonably available. NEPA requirements will be met.	
	Maintenance and operation of existing sites and facilities may be allowed subject to a Wilderness Management Plan.	Existing facilities may be maintained and upgraded or improved in accordance with existing right-of-way grants		

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LAND USE ACTIVITIES	MULTIPLE-USE CLASS C Controlled Use	MULTIPLE-USE CLASS L Limited Use	MULTIPLE-USE CLASS M Moderate Use	MULTIPLE-USE CLASS I Intensive Use
8. COMMUNICATION SITES	New communication sites are not allowed unless required for protection of wilderness values or visitors.	(Same as Class M and I)	New sites may be allowed. NEPA requirements will be met.	
9. FIRE MANAGEMENT	Maintenance and operation of existing sites and facilities may be allowed subject to a Wilderness Management Plan.	Existing facilities may be maintained and used in accordance with right-of-way grants and applicable regulations.		
10. VEGETATION HARVESTING Native Plants	Fire suppression measures will be taken in accordance with specific wilderness fire management plans to be followed by the authorized officer, and may include use of motorized vehicles, aircraft, and fire retardant chemicals	Fire suppression measures will be taken in accordance with specific fire management plans subject to such conditions as the authorized officer deems necessary, such as use of motorized vehicle, aircraft, and fire retardant chemicals.		
Harvesting by mechanical means	Removal of vegetation, non-commercial, may be allowed by permit only after an environmental assessment or environmental impact statement is prepared and after development of necessary stipulations.	Removal of vegetation, commercial or non-commercial, may be allowed by permit only after NEPA requirements are met and after development of necessary stipulation.		
RARE, THREATENED, AND ENDANGERED SPECIES, STATE AND FEDERAL	Not allowed (no effect)			
SENSITIVE PLANT SPECIES	Harvesting by mechanical means may be allowed by permit only.	All state and federally listed species will be fully protected.		
	Identified sensitive species will be given protection in management decisions consistent with wilderness values and Bureau policies	Identified sensitive species will be given protection in management decisions consistent with Bureau policies		

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LAND USE ACTIVITIES	MULTIPLE-USE CLASS C Controlled Use	MULTIPLE-USE CLASS L Limited Use	MULTIPLE-USE CLASS M Moderate Use	MULTIPLE-USE CLASS I Intensive Use
UNUSUAL PLANT ASSEMBLAGES	Identified unusual plant assemblages will be given protection in management decisions consistent with wilderness values and Bureau policies	Identified unusual plant assemblages will be considered when conducting all site-specific environmental impact analyzes to minimize impact. See also Wetland/Riparian Areas guidelines.		
VEGETATION MANIPULATION Mechanical Control	Mechanical control will not be allowed (no effect)		Mechanical control may be allowed, but only after consideration of possible impacts.	
Chemical Control	Aerial broadcasting application of chemical controls will not be allowed (no effect)			
	Spot application will not be allowed (no effect)	Noxious weed eradication may be allowed after site-specific planning. Types and uses of pesticides, in particular herbicides must conform to Federal, State and local regulations.	Spot application will be allowed after site-specific planning. Types and uses of pesticides, in particular herbicides, must conform to Federal, State, and local regulations (see Vegetation Element).	
Exclosures	Exclosures will not be allowed. (no effect)	Exclosures may be allowed		
Prescribed Burning	Prescribed burning will not be allowed (no effect)	Prescribe burning may be allowed after development of a site-specific management plan.		
II. LAND-TENURE ADJUSTMENT	Public land will not be sold (no effect)		Applies to Class M and Unclassified lands. Sale of public land may be allowed in accordance with the Federal Land Policy and Management Act and other applicable Federal laws and regulations. Sales in wilderness study areas will not be allowed until after Congressional action.	Public land will not be sold (no effect)

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LAND USE ACTIVITIES	MULTIPLE-USE CLASS C Controlled Use	MULTIPLE-USE CLASS L Limited Use	MULTIPLE-USE CLASS M Moderate Use	MULTIPLE-USE CLASS I Intensive Use
12. LIVESTOCK GRAZING	Grazing will be allowed subject to limitations to preserve wilderness characteristics and the protection of sensitive resources, except that existing grazing will only be subject to the protection of sensitive resources.	Grazing will be allowed subject to the protection of sensitive resources.		
	Major support facilities, such as permanent corrals, loading chutes, and significant water developments, will not be allowed except for existing facilities pursuant to valid existing leases, licenses and permits. Maintenance of such facilities will be controlled to prevent unnecessary or undue degradation of wilderness values.	Support facilities such as corrals, loading chutes, water developments, and other facilities, permanent or temporary, may be allowed consistent with protection of sensitive resources		Support facilities such as corrals, loading chutes, water developments, and other facilities, permanent or temporary, will be allowed.
	Manipulating of vegetation by chemical or mechanical means will not be allowed (no effect)	Manipulation of vegetation by chemical or mechanical means will not be allowed, except for site-specific needs. (See Vegetation Element.)		Manipulation of vegetation by chemical or mechanical means may be allowed and may be designed, developed, and managed for intensive livestock use.

TABLE 1 MULTIPLE-USE CLASS GUIDELINES

LAND USE ACTIVITIES	MULTIPLE-USE CLASS C Controlled Use	MULTIPLE-USE CLASS L Limited Use	MULTIPLE-USE CLASS M Moderate Use	MULTIPLE-USE CLASS I Intensive Use
<p>13. MINERAL EXPLORATION AND DEVELOPMENT</p>	<p>These guidelines summarize the kinds of management likely to be used after formal designation of wilderness by Congress.</p> <p>Congressional enactment of wilderness will prescribe mining rules and possible cutoff dates for mineral entry. The information below indicates the possible restrictions after enactment.</p> <p>The following summarizes possible significant provisions of the Wilderness Act as it applies to mineral exploration and development after Congress officially designates the areas as wilderness. (For more detailed information see the G-E-M Element or the Wilderness Act of Sept. 3, 1964.)</p> <p>Minerals prospecting and Exploration: Prospecting and exploration for the purpose of gathering information about mineral resources is allowed, provided such activity is carried on in a manner compatible with the preservation of the wilderness environment.</p>	<p>Leasable Minerals</p>	<p>Leasable Minerals</p>	

TABLE 1 MULTIPLE-USE CLASS GUIDELINES

LAND USE ACTIVITIES	MULTIPLE-USE CLASS C Controlled Use	MULTIPLE-USE CLASS L Limited Use	MULTIPLE-USE CLASS M Moderate Use	MULTIPLE-USE CLASS I Intensive Use
MINERALS EXPLORATION AND DEVELOPMENT (CONT.)	<p>Mineral development :</p> <p>All designated wilderness areas may be withdrawn from mineral entry at sometime subsequent to Congressional designation. Following withdrawal, no new mining claims may be located and no new permits, leases, or material sales contracts may be issued subject to deadlines established by Congress.</p> <p>Valid existing mining operations may continue pursuant to submission and approval of operational plans which will prevent unnecessary or undue degradation of wilderness qualities</p>	<p>Leasable Minerals</p> <p>Except as provided in Appendix 5.4, 516, DM 6, NEPA procedures titled "Categorical Exclusions", prior to approving any lease, notice, or application that was filed pursuant to 43 CFR 3045, 3100, 3200, 3500 and S.O. 3087, as amended, an environmental assessment will be prepared on the proposed action. Mitigation and reclamation measures will be required to protect and rehabilitate sensitive scenic, ecological, wildlife vegetative and cultural values.</p>		
		<p>Locatable Minerals</p> <p>Location of mining claims is nondiscretionary. Operations on mining claims are subject to the 43 CFR 3809 Regulations and applicable State and local law.</p> <p>NEPA requirements will be met.</p> <p>The Bureau will review plans of operations for potential impacts on sensitive resources identified on lands in this class. Mitigation, subject to technical and economic feasibility, will be required.</p>		
		<p>Saleable Minerals</p> <p>Except as provided in Appendix 5.4, 516 DM 6, NEPA Procedures titled "Categorical Exclusions", new material sales locations, including sand and gravel sites, will require an EA.</p>		

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		<p>Saleable Minerals</p> <p>Except as provided in Appendix 5.4, 516 DM 6, NEPA Procedures titled "Categorical Exclusions", new material sales locations, including sand and gravel sites, will require an environmental assessment.</p> <p>Continued use of existing areas of sand and gravel extractions is allowed subject to Bureau permits as specified in 43 CFR 3600</p>		
14. MOTORIZED -VEHICLE ACCESS/TRANSPORTATION	Motorized-vehicle use is generally not allowed unless provided for in individual wilderness legislation and management plans or if necessary to serve valid existing rights, and for emergency use for public safety, or protection of wilderness values	New roads and ways may be developed under right-of-way grants or pursuant to regulations or approved plans of operation.	Motorized-vehicle use will be allowed on "existing" routes of travel unless closed or limited by the authorized officer. New routes may be allowed upon approval of the authorized officer.	Same as Class M. In addition, the vehicle open areas are available for unrestricted vehicle access except where private land, areas of critical environmental concern, and active mining areas are included (see Recreation Element)
		Vehicle use on some significant dunes and dry lakebeds is allowed (see Motorized Vehicle Access Element)		
		Periodic or seasonal closures or limitations of routes of travel may be required		
		Access will be provided for mineral exploration and development		
Railroads	No new railroads and trams will be allowed, Existing railroads and trams may be operated and maintained subject to non-impairment of wilderness values. (no effect)	Railroads and trams may be allowed to serve authorized uses if no other viable alternative is possible	Railroads and trams may be allowed	Railroads and trams may be allowed
Aircraft	Aircraft facilities are not allowed (no effect)	Temporary landing strips maybe be allowed by permit	Airports and landing strips may be allowed by lease subject to conformance with county or regional airport loans and approval by the Federal Aviation Administration and Department of Defense.	

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15. RECREATION	<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"> --backpacking --primitive, unimproved site camping --hiking --horseback riding --rockhounding --nature study and observation --photography and painting --rockclimbing --spelunking --hunting 	<p>This class is suitable for recreation which generally involves low to moderate user densities. Recreation opportunities include those permitted in Class C:</p> <ul style="list-style-type: none"> --land-sailing on dry lakes --non-competitive vehicle touring and events only on "approved" routes of travel <p>All organized vehicle events, competitive or non, require a permit specifying the conditions of use. These conditions will include, but are not limited to:</p> <ul style="list-style-type: none"> --approved routes --no pitting, start, finish or spectator areas 	<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 and organized 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 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 authorized officer or in accordance with approved wilderness plans.</p>	<p>Permanent or temporary facilities for resource protection and public health and safety are allowed.</p>		
	<p>Trails are open for non-vehicle use and new trails for non-motorized access may be allowed.</p>			
16. WASTE DISPOSAL	<p>Waste disposal sites will not be allowed. (no effect)</p>	<p>Hazardous waste disposal sites will not be allowed.</p> <p>New non-hazardous waste disposal sites will not be allowed (no effect)</p>	<p>Public lands managed by Bureau may not be used for hazardous or non-hazardous waste disposal. Where locations suitable for such disposal are found on Bureau managed lands, consideration will be given to transfer of such sites to other ownership for this use. This amendment applies to waste normally handled through land fills or other waste management facilities. It does not apply to mining waste, including tailings and/or chemicals used in processing ore. (no effect; transfer of land was discussed under land tenure)</p>	

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17. WILDLIFE SPECIES AND HABITAT Rare, Threatened, and Endangered Species (both State and Federal)	All State and federal listed species and their critical habitat will be fully protected.			
Sensitive Species	Identified sensitive species will be given protection in management decisions consistent with wilderness values and Bureau policies.	Identified species will be given protection in management decisions consistent with Bureau policies		
Predator and Pest Control	Predator and pest control will not be allowed except to alleviate public health hazards or to protect endangered species	Control of depredation wildlife and pests will be allowed in accordance with existing State and Federal laws.		
Habitat Manipulation	Projects to improve wildlife habitat may be allowed subject to environmental assessment.	Same as Classes C and L, except that chemical and mechanical vegetation manipulation may be allowed.		
Reintroduction or Introduction of Established Exotic Species	Reintroduction of native species is allowed.	Reintroduction or introduction of native species or established exotic species is allowed.		
18. WETLAND/RIPARIAN AREAS	Wetland/riparian areas will be considered in all proposed land-use actions. Steps will be taken to provide that these unique characteristics and ecological requirements are managed in accordance with Executive Order 11990, Protection of Wetlands (42 CFR 26951), legislative and Secretarial direction, and Bureau Manual 6740, "Wetland-Riparian Area Protection and Management" (10/1/79), as outlined in the Vegetation Element. (no effect)			
19. WILD HORSES AND BURROS	Populations of wild and free-roaming horses and burros will be maintained in accordance with the Wild and Free-Roaming Horse and Burrow Act of 1971 but will be subject to controls to protect sensitive resources as provided for in management plans for wilderness areas. (See Wild Horse and Burro Element.)	Populations of wild and free-roaming horses and burros will be maintained in healthy, stable herds, in accordance with the Wild and Free-Roaming Horse and Burro Act of 1971 but will be subject to controls to protect sensitive resources. (See Wild Horse and Burro Element.)		