

2.2.5.5 Sheep Grazing Within Allotments

The prescriptions identified in this section would be implemented for all sheep allotments managed by the BLM in the planning area. Affected sheep allotments include: Antelope Valley, Bissell, Boron, Buckhorn Canyon, Cantil Common, Goldstone⁶, Gravel Hills, Hansen Common, Johnson Valley, Lava Mountains, Monolith-Cantil, Rudnick Common, Shadow Mountains, Spangler Hills, Stoddard Mountain (East, Middle, West), Superior Valley, Tunawee Common, and Warren.

The West Mojave Plan's sheep grazing program affects public lands only; it does not address the grazing of sheep on private land.

2.2.5.5.1 Management under Existing Federal Biological Opinions

The June 2002 biological opinion on the CDCA Plan requires the BLM to implement terms and conditions identified in previous opinions that have yet to be implemented on *cattle* allotments, but did not specify the same term and condition for sheep allotments. Even so, as stated in the 2002 opinion, terms and conditions are non-discretionary. Therefore, terms and conditions given in the 1994 *Biological Opinion for Ephemeral Sheep Grazing in the California Desert District (1-8-94-F-16)* identify non-discretionary measures required of the BLM as part of current management. They are not reiterated herein.

2.2.5.5.2 New Management Prescriptions

The following prescriptions comprise new management that would be implemented through plan adoption.

- (LG-20) Turnout of sheep in all allotments would not occur until 230 pounds (air-dry-weight) per acre of ephemeral forage is available. The lessee would be required to remove sheep from the area or the entire allotment if production falls below 230 pounds per acre.
- (LG-21) Following the removal of lambs, when multiple sheep bands are typically combined, there would be no more than 1,600 adult sheep in a combined band.
- (LG-22) All sheep carcasses would be removed and disposed of in an appropriate manner (i.e., not buried) within two days of being found. Cross-country vehicle travel to gather sheep carcass(es) must have prior approval from the BLM.

2.2.5.5.3 Health Assessments

(LG-23) Health assessments would be performed within four years of plan adoption for

⁶ Although the Goldstone sheep allotment is included in this list, Congress recently transferred those lands from the BLM to the Army, in support of the Fort Irwin expansion. As such, management prescriptions would not apply to the Goldstone Allotment.

all sheep allotments, or portions thereof, available for grazing (e.g., areas of allotments outside DWMA). Health assessments would not be required for allotments that would no longer be available for grazing (e.g., areas of allotments inside DWMA).

2.2.5.6 Sheep Grazing Within the MGS and the Mojave Monkeyflower Conservation Areas

The prescriptions identified in this section would be implemented on sheep allotments located within the MGS Conservation Area and the Mojave Monkeyflower Conservation Area. Unless otherwise noted, all prescriptions listed in Section 2.2.5.6 for sheep allotments would also be implemented in these areas. Affected sheep allotments include: Buckhorn Canyon, Cantil Common, Gravel Hills, Hansen Common, Lava Mountains, Monolith-Cantil, Rudnick Common, Shadow Mountain, Spangler Hills, West & Middle Stoddard Mountain and Superior Valley.

The following prescriptions comprise **new management** that would be implemented through plan adoption.

- (LG-24) To avoid competition between sheep and the Mohave ground squirrel once the ephemeral forage is no longer available and both species rely on perennial forage, all sheep would be removed from the Mohave Ground Squirrel Conservation Area when ephemeral plants are no longer the primary forage being utilized by sheep.

Based on research conducted by Dr. Phil Leitner in the Coso region of the West Mojave, key species have been identified as important to the foraging ecology of the Mohave ground squirrel. These are listed in Table 2-18.

**Table 2-18
Key Perennial Plant Species Important To
Mohave Ground Squirrel Foraging Ecology**

COMMON NAME	SCIENTIFIC NAME
Winterfat	<i>Krascheninnikovia lanata</i>
Spiny Hopsage	<i>Grayia spinosa</i>
Saltbush	<i>Atriplex</i> spp.

Sheep grazing would be removed from those portions of the Mohave Ground Squirrel Conservation Area when the species-specific, maximum utilization levels set forth in Table 2-19 are met. Percentages in the third column refer to the percentage of new perennial growth that may be consumed before sheep would be removed from the allotment or portions thereof.

Table 2-19
Maximum Utilization Levels For Sheep Grazing In The
Mohave Ground Squirrel Conservation Area

COMMON NAME	SCIENTIFIC NAME	MAXIMUM UTILIZATION LEVELS
Winterfat	<i>Krascheninnikovia lanata</i>	30%
Spiny hopsage	<i>Grayia spinosa</i>	25%
Four-winged saltbush	<i>Atriplex canescens</i>	25%
Shadscale	<i>Atriplex confertifolia</i>	25%
Allscale	<i>Atriplex polycarpa</i>	25%

To facilitate adaptive management, if future research shows that key species different from those listed above are important to the Mohave ground squirrel, those additional species would be added to the monitoring program. Similarly, if a key species identified above is not considered important to the Mohave ground squirrel in another part of its range (i.e. outside the Coso region), that species may be dropped from the list.

- (LG-25) Sheep grazing would be prohibited from the Middle Stoddard Mountain Allotment where it coincides with the Mojave monkeyflower Conservation Area. The BLM would work with the lessee to clearly identify monkeyflower habitat to be avoided.

2.2.5.7 Sheep Grazing Within DWMA's

The following prescriptions comprise **new management** that would be implemented through plan adoption. The first two would provide for removal of all authorized sheep grazing from DWMA's, which would be in effect two years following plan adoption.

- (LG-26) The following allotments, found entirely within DWMA's, would no longer be available for sheep grazing: Buckhorn Canyon, Goldstone, Gravel Hills, and Superior Valley (see Map 2-14).
- (LG-27) Boundaries would be modified in the following allotments so that areas within DWMA's would no longer be available for sheep grazing: Cantil Common, Lava Mountains, Monolith-Cantil, Shadow Mountains, and East & West Stoddard Mountain (see Map 2-14).
- (LG-28) Following plan adoption, the lessees would be given two years notification pursuant to 43 CFR 4110.4-2(b) before measures identified in Section 2.2.5.8 are implemented.

2.2.5.8 Voluntary Relinquishment of Cattle and Sheep Allotments

(LG-29) The BLM's CDCA Plan does not currently provide for voluntary relinquishment of BLM cattle and sheep allotments, but would be amended to allow for this action.

[Click here for Map 2-14](#)

Grazing use would continue until the lessee voluntarily relinquishes their grazing preference and lease. Upon relinquishment, BLM would, without further analysis or notice: not reissue the lease; remove the allotment designation; assume any and all private interest in range improvements located on public land; and, designate the land within the allotment as no longer available for livestock grazing.

Voluntary relinquishment would only occur where the action would ultimately result in direct conservation benefits for special-status plant and animal species covered by the West Mojave Plan. Table 2-20 lists the grazing allotments and covered species that would benefit from this action. Voluntary relinquishment would be initiated by the lessee of an allotment, not the BLM. Allotments identified as “Common” (i.e., Rudnick Common, Tunawee Common, etc.) are so-named because multiple lessees have grazing rights on those allotments, and several of them are identified for both cattle and sheep grazing. It is understood that all lessees of “Common” allotments (as opposed to any one lessee) must agree to voluntarily relinquish the allotment before the action could be implemented.

**Table 2-20
Special-Status Species That Would Benefit From
Voluntary Relinquishment of
Cattle and Sheep Allotments**

CATTLE ALLOTMENT	SPECIAL-STATUS SPECIES
Cady Mountain	Desert tortoise, bighorn sheep
Cronese Lakes	Desert tortoise
Harper Lake	Desert tortoise, Mohave ground squirrel, desert cymopterus,
Lacey – Cactus – McCloud (BLM portion)	Mohave ground squirrel
Olancha Common	Mohave ground squirrel, willow flycatcher migration habitat
Ord Mountain	Desert tortoise, Mohave monkeyflower
Pilot Knob	Desert tortoise, Mohave ground squirrel, desert cymopterus
Rattlesnake Canyon	Desert tortoise, Parish’s daisy, Cushenbury milkvetch, Cushenbury buckwheat, Little San Bernardino Mountains gilia, bighorn sheep
Round Mountain	None
SHEEP ALLOTMENT	SPECIAL-STATUS SPECIES
Antelope Valley	Alkali mariposa lily
Bissell	Desert tortoise, Mohave ground squirrel, alkali mariposa lily
Boron	Desert tortoise, Mohave ground squirrel, desert cymopterus
Buckhorn Canyon	Desert tortoise, Mohave ground squirrel
Cantil Common	Desert tortoise, Mohave ground squirrel, Red Rock poppy, Red Rock tarplant
Gravel Hills	Desert tortoise, Mohave ground squirrel, Barstow woolly sunflower, desert cymopterus
Johnson Valley	Desert tortoise, bighorn sheep
Lacy-Cactus-McCloud (BLM portion)	Mohave ground squirrel
Lava Mountains	Desert tortoise, Mohave ground squirrel
Monolith-Cantil	Desert tortoise, Mohave ground squirrel, Barstow woolly sunflower
Shadow Mountains	Desert tortoise, Mohave ground squirrel
Spangler Hills	Desert tortoise, Mohave ground squirrel
Stoddard Mountain, East	Desert tortoise, bighorn sheep, Mojave monkeyflower
Stoddard Mountain, Middle	Desert tortoise, Mojave monkeyflower

Stoddard Mountain, West	Desert tortoise, Mohave ground squirrel, Barstow woolly sunflower
Superior Valley	Desert tortoise, Lane Mountain milkvetch, Mohave ground squirrel, Barstow woolly sunflower, desert cymopterus
Walker Pass Common	Mohave ground squirrel, Charlotte's phacelia, Nine-mile Canyon phacelia, willow flycatcher migration habitat, yellow-eared pocket mouse
Whitewater Canyon	Arroyo toad, triple-ribbed milkvetch
CATTLE & SHEEP ALLOTMENT	SPECIAL-STATUS SPECIES
Hansen Common	Flax-like monardella, Reveal's buckwheat, Kern buckwheat, Charlotte's phacelia
Rudnick Common	Desert tortoise, Mohave ground squirrel, Red Rock poppy, Red Rock tarplant, Kelso Creek monkeyflower, yellow-eared pocket mouse
Tunawee Common	Mohave ground squirrel, Charlotte's phacelia, willow flycatcher migration habitat

There is no proposal at this time to relinquish grazing leases on the allotments identified in Table 2-20. However, should relinquishment occur, this table would help identify species for which conservation management would be provided.

2.2.6 Public Land Motorized Vehicle Access Network

2.2.6.1 Background

The West Mojave Plan would designate routes on public lands managed by the BLM as open or closed to motorized vehicle access, or as open on a limited basis. This designation of motorized routes is a requirement of federal regulation, BLM policy and the BLM's CDCA Plan, and is one of the recommendations of the USFWS Desert Tortoise Recovery Plan. Two steps are involved in this process: (1) the designation of routes as open, closed or limited, and (2) amendment of the CDCA Plan to incorporate the network of open and limited routes as a component of the CDCA Plan.

Since 1980, when the CDCA Plan was adopted, BLM completed the first step of the process: the designation of motorized vehicle routes on public lands within the western Mojave Desert. The most far-reaching designation effort took place in 1985 and 1987, and encompassed most of the West Mojave planning area. Other significant route designations occurred both before and after 1985-1987 as part of various planning efforts, primarily in connection with the preparation of various ACEC plans, the Rand Mountains – Fremont Valley Management Plan and the "pilot" designation process for the Ord Mountain Planning Unit⁷.

Through the West Mojave planning process, the existing network of designated motorized vehicle access routes was reviewed and, where necessary, revised prior to the second step of the process: the amendment of the CDCA Plan to incorporate the network of open and limited routes into the CDCA Plan. The following steps were taken:

⁷ In addition, in 2001, as stipulated by court order, BLM implemented an interim route closure within the Fremont, Kramer, Red Mountain, Newberry/Rodman and Superior subregions. These closures were to remain in effect until the issuance of a record of decision regarding route designation in the West Mojave.

- **Redesign Area -- Tortoise Critical Habitat:** Because most of the existing network was designated prior to the listing of the desert tortoise, the network was extensively revised within desert tortoise critical habitat. This involved field surveys to map existing vehicle routes, and the design of a route network that would provide motorized vehicle access, where appropriate and compatible with tortoise conservation (see discussion below).
- **Redesign Area -- Other Sensitive Locales:** Field inventories and the design of a route network compatible with sensitive resources was undertaken in the Middle Knob and Juniper Flats areas.
- **Retention of Existing Route Network Elsewhere:** In all other areas, the existing motorized vehicle access network has been retained (excepting certain minor revisions and corrections, discussed below). These areas include the remaining portions of the 1985 and 1987 networks, the ACEC networks, the Rand Mountains – Fremont Valley Management Plan network and the Ord Mountain network.

In March 2003 the BLM published an environmental assessment (EA) for the *Western Mojave Desert Off Road Vehicle Designation Project* (“Designation Project”). The Designation Project EA assessed the environmental effects of adopting the motorized vehicle access network developed through the West Mojave planning process. Consideration of the access network in advance of the publication of the West Mojave Plan EIR/S was required to meet a court-mandated deadline for the BLM to issue a Record of Decision regarding route designation in the West Mojave plan area by June 30, 2003. That Record of Decision will amend the CDCA Plan to adopt the network as a component of the CDCA Plan.

Because the motorized vehicle access network is also a component of the West Mojave Plan’s conservation strategy, the analysis presented in the Designation Project EA is included in this Draft EIR/S. Comments regarding and suggested modifications of the network could be offered during the public review of the Draft EIR/S. This is important because the West Mojave Plan will also amend the CDCA Plan. Thus, a motorized vehicle access network that is incorporated into the CDCA Plan on June 30, 2003 could be modified by CDCA plan amendment at the time the West Mojave Plan is approved.

The following discussion of the motorized vehicle access network is organized as follows:

- Criteria
- Methodology
- Take avoidance measures
- Competitive Event Corridors and Race Courses
- El Paso Collaborative Access Planning Area
- California Back Country Discovery Trail
- Implementation
- Modification of Route Network

2.2.6.2 Criteria

Within the redesign area, the route designation process employed successful aspects of past efforts, sought to avoid their pitfalls and involved the public extensively in its development. Consultation with the architects of past designation efforts, other land use planners and extensive conversations and meetings with the public identified a number of issues and concerns that needed to be addressed if a designation process were to be successful. As a result, it was decided to base the route designation revision on the following:

- A variety of data, including biological, cultural, and recreational resources, commercial uses and land ownership.
- Current ground-truthed maps that displayed not only route location, but also route type, use level, and recreational points of interest such as campsites and staging areas.
- A process that
 - Is standardized, repeatable and that can be logically followed.
 - Assesses each route on its own merits and issues, and documents that assessment.
 - Identifies desired future condition and implements a process to attain that condition.
 - Creates a system of routes that work together in positive synergy.
 - Systematically assesses both individually and cumulatively the effects of each route on biological, cultural and recreational resources, as well as the general access requirements of commercial and private property interests.
 - Establishes a clear link between the route designation decision and the rationale for that decision.
 - Involves the public and clearly incorporates their input.
 - Considers the history of use, public safety, the intensity and season of use and the effect of concentrating versus dispersing use.
 - Takes into account the variety of recreational visitors by offering a variety of routes (e.g. 4WD vs. motorcycle).
 - Considers the length of the typical visitor's stay by providing enough recreational opportunity for that stay (which would decrease route proliferation).
 - Protects or maintains "feeder" and historic routes, as well as commercial and private property access.

The process would consider: (1) the level of impact of each route; (2) the number, density and intensity of use of each route and its relationship to habitat fragmentation and cumulative effects; and (3) ways to minimize the number and intensity of conflicting land uses (e.g. urban interface, noise, dust, visual impacts).

Recognizing and attempting to address the issues and concerns raised by the public represents only one, albeit very important, aspect to be considered in the development of a route designation process. A second aspect included compliance with statutory guidelines. An abbreviated summary of the primary legal requirements and their most important criteria relative to route designation is presented in Table 2-21.

**Table 2-21
Statutory Route Designation Criteria**

STATUTE	PRINCIPAL GUIDING CRITERIA AFFECTING MOTORIZED ACCESS
FESA CESA	-Section 7 requires that the plan (i.e. "action") include steps to assist in the "recovery" of the federally threatened or endangered species.
NEPA CEQA	- Fully disclose to the public the purpose, the full range of issues and considerations (including environmental) and details of the proposed action and a reasonable range of alternatives to the public. -Carefully evaluate the cumulative effects of the proposed action. Such an analysis is to include: both the current situation, as well as the foreseeable future; evaluate both direct and indirect impacts both within the geographical borders of the action, as well as beyond and; include as part of its cumulative impact analysis not only an evaluation of biological and cultural factors, but also include an evaluation of economic and sociological factors (including recreation).
FLMPA	- Manage public lands on the basis of multiple use and sustained yield; resource values to be protected; certain lands are to be preserved in their natural condition; wild, as well as domestic habitat is to be provided for; provide for a balanced and diverse combination of recreational uses; provide for human occupancy and use; provide for economic uses (e.g. range, timber, minerals). - Comply with Section 601 provisions for the CDCA, including Congressional findings that (1) rare and endangered species of wildlife, plants and fishes and numerous archaeological and historic sites are "seriously threatened" by "pressures of increased use, particularly recreation use", and (2) BLM can and should provide present and future use and enjoyment "particularly outdoor recreation uses, including the use, where appropriate, of off-road recreational vehicles."
National Historic Preservation Act	-Protect identified significant cultural sites; -Confer with Native American Nations on project or action (i.e. Nation to Nation conference)
Code of Federal Regulations 43 CFR 8342.1	-Trails shall be located in a manner to minimize impacts to the physical resources (i.e. soils, watershed, vegetation, air and other resources) and to prevent impairment of wilderness suitability; -trails shall be located to minimize harassment of wildlife or significant disruption of wildlife habitats. Special attention would be given to protect endangered or threatened species and their habitats; -trails shall be located to minimize conflicts between off-road vehicle use and other existing or proposed recreational uses of the same neighboring public lands, and to ensure the compatibility of such uses with existing conditions in populated areas, taking into account noise and other factors.
Taylor Grazing Act Mining Acts	-Guarantee the conditional issuance of permits allowing the use of public lands for livestock grazing and mining.
State Fish & Game Codes	-Establishes requirements protecting nesting birds of prey, particularly with respect to governing allowable levels of disturbance; -Establishes requirements protecting riparian habitat, particularly with respect to governing allowable levels of disturbance.

A third principal aspect of a successful designation process is the inclusion of steps that ensure that the eventual system or network of routes helps significantly in achieving the desired future condition.

The final principal aspect is the inclusion of steps that carefully consider area specific planning issues and challenges, and then carefully weighs how management protocols designed to remedy those issues can best be implemented.

Landscape Factors: There are many factors that go into deciding which existing vehicle

routes should be designated as open. The final designated route network needs to provide for the needs of public land users as much as possible while also minimizing potential vehicle use impacts. Routes that are retained as open are those that provide the best public access through public lands, routes that provide access to significant points of interest and those that have inherent value for recreational driving (i.e. a challenging 4-WD road through a scenic area).

The topography of the west Mojave region varies greatly from sandy bajadas to rugged rock mountains. The process of inventorying routes of travel revealed several observations that offer insight into the management of vehicle travel in the desert. Generally, it was found that there was a higher density of routes in areas with topography than those without it. In flat bajada areas, routes were generally long and straight, leading from one destination to another, often from one set of hills to another. Routes traversing through hills and mountains tended to be shorter and windier. Routes in hills and mountains typically either circumnavigate the hills, wind their way to the top of the mountains for a view, or go to some destination such as a spring in a canyon, a mine, a cabin, etc. In some cases, the routes are there only to provide a challenging recreational opportunity. The mountains and hills also provide shelter; therefore, campsites were more prevalent where there was topography.

The development of the route network utilized these observations to provide access to these recreation destinations and opportunities while eliminating superfluous routes that did not add to the network by providing necessary access or opportunities.

2.2.6.3 Route Designation Methodology

Given the enormity of the task of designating all motorized routes in the West Mojave planning area, the region was divided into manageable and recognizable route designation planning units. These included twenty-one “subregions,” as well as the numerous ACECs for which designations have been completed, the Ord Mountain Pilot Area, and subdivisions of the remaining areas covered by the 1985-87 designation effort (see Table 2-22, Map 14A and maps on attached CD Rom). Each of the previous route designation efforts was assessed to determine its need for updating to ensure that its routes meshed smoothly with the network designated on adjacent lands.

**Table 2-22
Route Designation Planning Units**

SUBREGIONS	OTHER PLANNING UNITS
Amboy	Afton Canyon ACEC
Bighorn	Amboy Crater National Natural Landmark
Coyote	Barstow Woolly Sunflower ACEC
East Sierra	Bedrock Spring ACEC
El Mirage	Big Morongo Canyon ACEC
El Paso	Black Mountain ACEC
Fremont	Calico Mountain Early Man Site ACEC
Granite	Christmas Canyon ACEC
Juniper Flats	Cronese Basin ACEC
Kramer	Desert Tortoise Research Natural Area ACEC
Middle Knob	Fossil Falls ACEC
Morongo	Great Falls Basin/Argus Range ACEC

[Click here for Map 2-14A](#)

Newberry-Rodman North Searles Ord Pinto Ridgecrest Red Mountain Sleeping Beauty South Searles Superior	Harper Dry Lake ACEC Jawbone/Butterbread ACEC Juniper Flats ACEC Last Chance Canyon ACEC Manix ACEC Mojave Fishhook ACEC Rainbow Basin/Owl Canyon ACEC Red Mountain Spring (formerly Squaw Spring) Rodman Mountains Cultural Area ACEC Rose Spring ACEC Sand Canyon ACEC Short Canyon ACEC Soggy Dry Lake ACEC Steam Well ACEC Trona Pinnacles ACEC Upper Johnson Valley ACEC Western Rand Mountains ACEC Whitewater Canyon ACEC 1985-87 Inyo County 1985-87 Cady Mountains
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Redesign Areas: Based upon various new and significant concerns (e.g. desert tortoise and other sensitive species habitat) eleven of the sub regions were selected for detailed designation updates. These eleven sub regions are (from north to south): Ridgecrest, El Paso, Middle Knob, Red Mountain, Fremont, Kramer, El Mirage, Superior, Coyote, Newberry-Rodman and Juniper. The Red Mountain, Fremont, Kramer, Superior and Newberry-Rodman sub regions were selected because they include a large portion of the tortoise DWMAs, and because they are the subregions for which interim networks were established in response to court order. The El Mirage and Coyote sub regions were selected because they too are part of the tortoise DWMAs. The Middle Knob sub region was selected because of its diverse assemblage of threatened, endangered and sensitive plant species and Juniper sub region was primarily selected because of the interests expressed by the local equestrian community. Nine of the subregions would be redesigned through the West Mojave planning process. The Ridgecrest and El Paso sub regions would be designated as a Collaborative Access Planning Area, identified for additional follow-on planning (see section 2.2.6.6 below) because of their significant recreational opportunities, proximity to the City of Ridgecrest, and sensitive cultural resource and ecological values.

The first step in developing the 2002 route designations was to conduct a detailed field inventory in ten of the eleven subregions⁸. This inventory took place between September 2001 and March 2002, and recorded 4,422 miles of motorized routes. By utilizing sophisticated Trimble Pro XRS Global Positioning System (GPS) units, motorized routes were mapped for location to within sub-five meter accuracy. Coincident with the mapping of the routes, information was collected on the type of route (e.g. two-track versus single-track), route condition (e.g. graded vs. rough) and estimated level of use (based upon woody vegetative cover, e.g. low-intermediate to high-intermediate use). Additionally, the data dictionary used to collect

⁸ The Juniper sub region was not subjected to a detailed field inventory due to time constraints and the availability of route inventory data that adequately met the needs of the more detailed designation update.

route information was also designed to allow for the collection and storage of information about various points encountered along the route (e.g. campsites, staging areas, mine claims, utility facilities, etc.). These data collected by this field effort were downloaded into Geographic Information System (GIS) database where it could be integrated with other GIS coverages (e.g. desert tortoise data) to construct the maps that were then utilized as part of the route designation process.

Mileage of off highway vehicle routes mapped by the survey teams within each subregion follows; figures in parentheses are the miles of routes designated open by BLM in 1985 and 1987: Coyote 411 (178), El Mirage 292 (49), El Paso 465 (324), Fremont 582 (214), Kramer 642 (254), Middle Knob 91 (n/a), Newberry-Rodman 210 (142), Red Mountain 733 (234), Ridgecrest 328 (106) and Superior 668 (396).

Once the field data were collected, designation teams began the work of identifying a revised network of open, closed and limited routes. The eight surveyed subregions were divided into Motorized Access Zones (MAZ). These MAZs typically reflected areas with similar management issues or constraints. The boundary of each MAZ was delineated by routes of travel, highways, ACEC boundaries, environmental polygons of concern or topographical constraints.

Management issues and goals were identified for each MAZ. Whenever possible, areas with similar management goals or issues were delineated as one MAZ. Issues and goals address both the conservation of sensitive species and public access needs (including recreation, commercial and business concerns) (see Table 2-23).

**Table 2-23
Motorized Access Zones (MAZ) Issues and Goals**

SUB-REGION	MAZ	MANAGEMENT ISSUES	GOALS
Coyote	MAZ-1	-Includes a portion of Paradise Valley, an area of greater than average tortoise sign. -Dispersed commercial mining interests.	-Facilitate tortoise recovery, giving special attention to lands in Paradise Valley and lands to the west and north of Coyote Lake. -Maintain access to active mine sites.
Coyote	MAZ-2	-Recognize historical use of Manix Tank route.	-Maintain access via the Manix tank route.
Coyote	MAZ-3	-Commercial mining interests.	-Maintain access to Alvord mine & other active claims.
Coyote	MAZ-4	-Active cattle allotment.	-Allow routes for the maintenance of the ranching operation and its facilities.

Coyote	ALL	<ul style="list-style-type: none"> -Dispersed private property. -Many non-competitive organized OHV events. -Communication & Electrical Transmission Tower Sites throughout region. - CBDT System planned through the sub-region. -Sub region is part of Desert Tortoise DWMA. 	<ul style="list-style-type: none"> -Provide adequate private property access. -Maintain adequate route network for continuation of special events. -Provide adequate, non-redundant access for maintenance of numerous utility sites. -Allow for connectivity of the CBDT system through this sub region. -Facilitate Desert Tortoise Recovery: Eliminate redundant routes, particularly those that are determined to be unnecessary for commercial or private property access or whose contribution to recreational opportunities is determined to already be adequately met.
El Mirage	MAZ-1	<ul style="list-style-type: none"> -Shadow Mtn’s south side motorcycle routes create noise and visual impacts to the community of Shadow Mtn. -Shadow Mtn private property owners conflicts with off-road MC use. -Shadow Mtn communication towers. 	<ul style="list-style-type: none"> -Close redundant routes and particularly those that are impacting community of Shadow Mtn. - Allow recreational opportunity while minimizing land use conflicts. -Provide adequate access for maintenance of communication towers
El Mirage	MAZ-2	<ul style="list-style-type: none"> -Edwards Bowl Management Plan Issues 	<ul style="list-style-type: none"> - Address issues in the Edwards Bowl Plan to the extent possible.
El Mirage	ALL	<ul style="list-style-type: none"> -Area of occupied private lands known to have conflict with MC use. -Dispersed private property checker-boarded with BLM lands. -Tortoise DWMA: significant areas of greater than average tortoise sign. -The California Back Country Trail System would cross the sub-region. -Provide for continuation of non-competitive organized OHV events. -Dispersed private property. 	<ul style="list-style-type: none"> -Minimize private land use/ownership conflicts. -Provide adequate private property access. - Facilitate Desert Tortoise Recovery: Eliminate redundant routes, particularly those determined to be unnecessary for commercial or private property access or whose contribution to recreational opportunities is determined to already be adequately met or better met by maintaining recreational opportunities in those areas with less desirable Desert Tortoise habitat. -Allow for connectivity of the CBDT system. -Allow for continuation of events where appropriate (i.e. with particular respect to Desert Tortoise concerns).
Fremont	MAZ-1	<ul style="list-style-type: none"> -Zone surrounds Harper Lake ACEC and abuts the southern portion of Black Mountain ACEC. -Part of Desert Tortoise DWMA: Zone is location of significant areas of historic and/or current greater than average tortoise sign. Topography is generally with slopes less than 20%, conducive to tortoises but generally not as desirable for many recreational activities. -The CBDT System is planned through the sub-region. 	<ul style="list-style-type: none"> -Protect the intent of the ACEC and minimize creation of “volunteer” access routes into the ACEC. - Eliminate redundant routes, particularly those that are determined to be unnecessary for commercial or private property access or whose contribution to recreational opportunities is determined to already be adequately met or better met by maintaining recreational opportunities in the more mountainous terrain found in portions of MAZs 3 and 4. - Allow for connectivity of the CBDT system.

Fremont	MAZ-2	-Includes Desert Cymopterus populations and CDFG lands set aside for its protection. -Part of Desert Tortoise DWMA: Zone is location of significant areas of historic and/or current greater than average tortoise sign. Topography generally consists of slopes of less than 20%, conducive to tortoises but generally not as desirable for many recreational activities.	-Maximize protection for desert cymopterus populations. Minimize fragmentation of its range and maximize the integrity of the CDFG lands. - Eliminate redundant routes, particularly those that are determined to be unnecessary for commercial or private property access or whose contribution to recreational opportunities is determined to already be adequately met or better met by maintaining recreational opportunities in the more mountainous terrain found in portions of MAZs 3 and 4.
Fremont	MAZ-3	- Abuts the western boundary of the Black Mtn. ACEC. - Location of long-term popular use by campers and motorcyclists, much of which is on/around mountainous terrain (i.e. slopes greater than 20%). -The CBDT System is planned through the sub-region.	- Protect the intent of the ACEC and minimize the creation of “volunteer” access routes into the ACECs. - Minimize route redundancy, yet provide enough network connectivity to minimize the creation of “volunteer” routes. - Allow for connectivity of the CBDT.
Fremont	MAZ-4	Zone is the location (e.g. “Hamburger Mill”, Gravel Hills) of long-term popular use by campers, motorcyclists, etc. much of which is on/around mountainous terrain (i.e. with slopes greater than 20%).	-Minimize redundancy while providing enough network connectivity to minimize the creation of “volunteer” routes.
Fremont	MAZ-5	-Part of Desert Tortoise DWMA: Zone is location of significant areas of historic and/or current greater than average tortoise sign. Topography is generally with slopes less than 20%, conducive to tortoises but generally not as desirable for many recreational activities. -The CBDT System is planned through the sub-region.	-Eliminate redundant routes, particularly those that are determined to be unnecessary for commercial or private property access or whose contribution to recreational opportunities is determined to already be adequately met or better met by maintaining recreational opportunities in the more mountainous terrain found in portions of MAZs 3 and 4. -Allow connectivity of the CBDT system through this sub region.
Fremont	ALL	-Provide for continuation of non-competitive organized OHV events. -Part of Desert Tortoise DWMA; significant areas of historic and current greater than average tortoise sign. -Dispersed private property.	-Allow for continuation of events where appropriate (i.e. with particular respect to Desert Tortoise, Desert Cymopterus and other T,E&S concerns). - Facilitate Desert Tortoise Recovery: Eliminate redundant routes, particularly those that are determined to be unnecessary for commercial or private property access or whose contribution to recreational opportunities is determined to already be adequately met or better met by maintaining recreational opportunities in those areas with less desirable Desert Tortoise habitat. -Provide adequate private property access and minimize land use conflicts.

Kramer	MAZ-1	<ul style="list-style-type: none"> -Route proliferation from the adjoining private lands at Silver Lakes. -Part of Desert Tortoise DWMA: Zone is location of significant areas of historic and/or current greater than average tortoise sign. Topography is generally with slopes less than 20%, conducive to tortoises but generally not as desirable for many recreational activities. 	<ul style="list-style-type: none"> -Minimize redundancy while providing enough network connectivity to minimize the creation of “volunteer” routes. -Eliminate redundant routes, particularly those that are determined to be unnecessary for commercial or private property access or whose contribution to recreational opportunities is determined to already be adequately met or better met by maintaining recreational opportunities in those areas with less desirable Desert Tortoise habitat
Kramer	MAZ-2	<ul style="list-style-type: none"> -Rock hounding and target shooting in the Kramer Hills -Part of Desert Tortoise DWMA: Zone is location of significant areas of historic and/or current greater than average tortoise sign. -The CBDT System is planned through the sub-region. 	<ul style="list-style-type: none"> -Allow access to historic rock-hounding areas, and consolidate and minimize the proliferation of shooting areas. -Eliminate redundant routes, particularly those that are determined to be unnecessary for commercial or private property access or whose contribution to recreational opportunities is determined to already be adequately met -Allow for connectivity of the CBDT system.
Kramer	MAZ-3	<ul style="list-style-type: none"> -Light use relative to other zones within Kramer. Many of the existing single-track routes created by competitive events in the 1970’s before most of those activities were shifted over to the Open Areas. -Location of significant areas of current greater than average tortoise sign. Topography is generally with slopes less than 20%, conducive to tortoises but generally not as desirable for many recreational activities. -The CBDT System is planned through the sub-region. 	<ul style="list-style-type: none"> -Provide adequate private and commercial access and maintain intraregional network connectivity. -Eliminate routes, particularly those that are determined to be unnecessary for commercial or private property access or whose contribution to recreational opportunities is determined to already be adequately met or better met by maintaining recreational opportunities in those areas with less desirable Desert Tortoise habitat (e.g. portions of the more mountainous terrain found in MAZs 3 and 4). - Allow for connectivity of the CBDT system.
Kramer	MAZ-4	<ul style="list-style-type: none"> -Varied use, including dispersed camping from neighboring Hinkley into the Iron Mtns. -The CBDT System is planned through the sub-region. 	<ul style="list-style-type: none"> -Provide varied opportunity and network connectivity particularly in those areas of rougher terrain. -Allow for connectivity of the CBDT system.
Kramer	ALL	<ul style="list-style-type: none"> -Part of Desert Tortoise DWMA: Zone is location of significant areas of historic and/or current greater than average tortoise sign. Topography is generally with slopes less than 20%, conducive to tortoises but generally not as desirable for many recreational activities. -Sub region is the location of permitted non-competitive organized OHV events. -Dispersed private property. 	<ul style="list-style-type: none"> - Facilitate Desert Tortoise Recovery: Eliminate redundant routes, particularly those that are determined to be unnecessary for commercial or private property access or whose contribution to recreational opportunities is determined to already be adequately met or better met by maintaining recreational opportunities in those areas with less desirable Desert Tortoise habitat. -Allow for continuation of permitted non-competitive events where appropriate. -Provide adequate private property access and minimize land use conflicts.

Middle Knob		<ul style="list-style-type: none"> -Pacific Crest Trail passes through area. -Area known for high biodiversity. -Location of the very rare Kern buckwheat -Dispersed private property. -Location of significant wind-farm facilities. 	<ul style="list-style-type: none"> -Allow access to the PCT; minimize conflicts with other uses. -Minimize real or potential impacts to sensitive species. -Avoid occupied habitat of Kern buckwheat -Provide adequate private property access and minimize land use conflicts. -Provide adequate access for maintenance of facilities (including fire protection).
Newberry – Rodman	MAZ-1	<ul style="list-style-type: none"> -Surrounds Wilderness Area. -Location of numerous Golden Eagle and Prairie Falcon nests. 	<ul style="list-style-type: none"> -Provide wilderness access while minimizing motorized wilderness trespass. -Minimize the impact to nesting raptors.
Newberry – Rodman	MAZ-2	<ul style="list-style-type: none"> -Surrounds Wilderness Area. -Subject to ranching by permittees. 	<ul style="list-style-type: none"> -Provide wilderness access while minimizing motorized wilderness trespass. -Minimize land-use conflicts (ranching-recreation-resource protection).
Newberry – Rodman	MAZ-3	<ul style="list-style-type: none"> -The CBDT System is planned through this zone. -Adjoins Wilderness Area. 	<ul style="list-style-type: none"> -Allow for connectivity of the CBDT system. -Provide wilderness access while minimizing motorized wilderness trespass.
Newberry - Rodman	ALL	<ul style="list-style-type: none"> -Part of Desert Tortoise DWMA. -Rock-hounding opportunity, sightseeing, and dispersed camping. -Dispersed commercial mines and private property. 	<ul style="list-style-type: none"> - Facilitate Desert Tortoise Recovery: Eliminate redundant routes, particularly those that are determined to be unnecessary for commercial or private property access or whose contribution to recreational opportunities is determined to already be adequately met or better met by maintaining recreational opportunities in those areas with less desirable Desert Tortoise habitat. -Allow for the diverse range of recreational opportunities, yet is protective of the resources by eliminating unnecessary and/or redundant routes. -Maintain adequate access to commercial and private properties.
Red Mountain	MAZ-1	<ul style="list-style-type: none"> -Location of historic popular use by miners, campers, motorcyclists, etc. -Much of this zone is mountainous terrain (i.e. with slopes greater than 20%). 	<ul style="list-style-type: none"> -Minimize redundancy while providing enough network connectivity to minimize the creation of “volunteer” routes. -Recognize that better tortoise habitat is typically found in areas with slopes less than 20%; therefore allow for adequate recreational, commercial, private property access, yet eliminate duplicity in order to minimize impacts to physical, biological and cultural resources (43 CFR 8342.1).
Red Mountain	MAZ-2	<ul style="list-style-type: none"> -Substantial historic and current commercial mining activity. -Much of this zone is mountainous terrain (i.e. with slopes greater than 20%). 	<ul style="list-style-type: none"> -Minimize redundancy while providing enough network connectivity to minimize the creation of “volunteer” routes. -Recognize that better tortoise habitat is typically found in areas with slopes less than 20%; therefore allow for adequate recreational, commercial, private property access, yet eliminate duplicity in order to minimize impacts to physical, biological and cultural resources (43 CFR 8342.1).

Red Mountain	MAZ-3	<ul style="list-style-type: none"> -Northwest portion of zone is location of historic popular use by miners, campers, motorcyclists, etc. -Southern portion of zone is location of historic high tortoise sign densities. -Location of Cuddeback Dry Lake, utilized by for commercial photography/filming, sight seeing, OHV recreation. 	<ul style="list-style-type: none"> -Minimize redundancy while providing enough network connectivity to minimize the creation of “volunteer” routes. -Eliminate redundant routes, particularly those that are determined to be unnecessary for commercial or private property access or whose contribution to recreational opportunities is determined to already be adequately met or better met by maintaining recreational opportunities in those areas with less desirable Desert Tortoise habitat. -Allow adequate access for commercial and recreational interests, but eliminate redundant routes in order to minimize impact to historically important tortoise habitat.
Red Mountain	MAZ-4	<ul style="list-style-type: none"> -Northeast portion of this zone is mountainous (i.e. with slopes greater than 20%). -Northeast portion of this zone has dispersed occupied private in-holdings. -Zone partially encircles Wilderness Area. 	<ul style="list-style-type: none"> -Recognize that better tortoise habitat is typically found in areas with slopes less than 20%; therefore allow for adequate recreational, commercial, private property access, yet eliminate duplicity in order to minimize impacts to physical, biological and cultural resources (43 CFR 8342.1). -Allow adequate private property access, yet minimizes land use conflicts. -Provide access to wilderness area in a manner that minimizes motorized incursions.
Red Mountain	ALL	<ul style="list-style-type: none"> -Part of Desert Tortoise DWMA. -Rock-hounding opportunities, sightseeing, and dispersed camping. -Dispersed commercial mines and private property. 	<ul style="list-style-type: none"> - Facilitate Desert Tortoise Recovery: Eliminate redundant routes, particularly those that are determined to be unnecessary for commercial or private property access or whose contribution to recreational opportunities is determined to already be adequately met or better met by maintaining recreational opportunities in those areas with less desirable Desert Tortoise habitat. -Allow for the diverse range of recreational opportunities, yet is protective of the resources by eliminating unnecessary and/or redundant routes. -Maintain adequate access to commercial and private properties.

Superior	MAZ-1	<ul style="list-style-type: none"> -Significant illegal dumping from the local community of Barstow. -Mountainous terrain interspersed with bajadas characterized by higher than average of tortoise sign. -Illegal activities (e.g. “party spots”, “meth” labs) due to proximity to urban areas. -Provides primary access to Rainbow Basin and Owl Canyon. 	<ul style="list-style-type: none"> -Minimize illegal dumping (e.g. close short route spurs that do not serve camping, trailhead or other legitimate opportunities.) -Eliminate redundant routes, particularly those that are determined to be unnecessary for commercial or private property access or whose contribution to recreational opportunities is determined to already be adequately met or better met by maintaining recreational opportunities in those areas with less desirable Desert Tortoise habitat. -Eliminate isolated loops or spurs that are not otherwise utilized for legitimate recreational or commercial use or private property access -Maintain access to these popular recreation areas (e.g. camping, equestrian, hiking, photography, geologic interpretation, etc.) in the most efficient manner possible in order to minimize habitat degradation. .
Superior	MAZ-2	<ul style="list-style-type: none"> -Zone abuts the northeastern boundary of the Black Mtn. ACEC and eastern boundary of the Black Mtn. Wilderness Area. -Location of long-term popular use (i.e. just east of the very popular Gravel Hills area in the Fremont sub region) by campers, motorcyclists, etc. much of which is on/around rough terrain (i.e. with slopes greater than 20%). -Mountainous terrain interspersed with bajadas characterized by higher than average of tortoise sign. 	<ul style="list-style-type: none"> -Protect the intent of the ACEC (i.e. to protect its cultural resources) and the wilderness area by minimizing the likelihood of the creation of new “volunteer” routes. -Minimize redundancy while providing enough network connectivity to minimize the creation of “volunteer” routes. -Facilitate tortoise recovery. -Eliminate redundant routes, particularly those that are determined to be unnecessary for commercial or private property access or whose contribution to recreational opportunities is determined to already be adequately met or better met by maintaining recreational opportunities in those areas with less desirable Desert Tortoise habitat.

Superior	MAZ-3	<ul style="list-style-type: none"> -Some of highest densities of tortoise sign in the planning area. Topography is generally with slopes less than 20%, conducive to tortoises but generally not as desirable for many recreational activities. -Abuts the eastern boundary of the Black Mtn. ACEC and southeastern boundary of the Black Mtn. Wilderness Area. -Includes the northwest portion of the Lane Mtn Milkvetch Conservation Area. 	<ul style="list-style-type: none"> -Eliminate routes, particularly those that are determined to be unnecessary for commercial or private property access or whose contribution to recreational opportunities is determined to already be adequately met or better met by maintaining recreational opportunities in those areas with less desirable desert tortoise habitat. -Protect the intent of the ACEC (i.e. to protect its cultural resources) and the wilderness area by minimizing the likelihood of the creation of new “volunteer” routes. -Minimize redundancy while providing enough network connectivity to minimize the creation of “volunteer” routes. -Provide adequate commercial and private property access. Provide adequate intraregional connectivity in recreational route network in order to minimize the proliferation of “volunteer” routes. Eliminate routes that are redundant and don’t meet the above criteria. -Avoid Lane Mountain milkvetch
Superior	MAZ-4	<ul style="list-style-type: none"> -Northern portion is occupied by Paradise Valley, an area characterized by some of the highest historic and current densities of tortoise sign in the planning area. -Southern portion is characterized by both substantial historic and current commercial mining activity. 	<ul style="list-style-type: none"> -Eliminate routes, particularly those that are determined to be unnecessary for commercial or private property access or whose contribution to recreational opportunities is determined to already be adequately met or better met by maintaining recreational opportunities in those areas with less desirable Desert Tortoise habitat. -Maintain access to active mines and patented claims.
Superior	MAZ-5	<ul style="list-style-type: none"> -Includes West Paradise Valley Conservation Area. -Eastern portion of this zone is occupied by Paradise Valley, an area characterized by some of the highest historic and current densities of tortoise sign in the planning area. 	<ul style="list-style-type: none"> -Provide adequate commercial and private property access. -Provide adequate intraregional connectivity in recreational route network in order to minimize the proliferation of “volunteer” routes. -Eliminate routes that are redundant and don’t meet the above criteria. -Eliminate routes, particularly those that are determined to be unnecessary for commercial or private property access or whose contribution to recreational opportunities is determined to already be adequately met or better met by maintaining recreational opportunities in those areas with less desirable desert tortoise habitat. -Avoid Lane Mountain milkvetch

Superior	ALL	<ul style="list-style-type: none"> -Sub region is part of Desert Tortoise DWMA. -Sub region is known for rock-hounding opportunity, touring of old mines, sight-seeing, and dispersed camping. -Dispersed commercial mines and private property. -Includes portions of the CBDT System. -Location of permitted non-competitive organized OHV events. 	<ul style="list-style-type: none"> - Facilitate Desert Tortoise Recovery: Eliminate redundant routes, particularly those that are determined to be unnecessary for commercial or private property access or whose contribution to recreational opportunities is determined to already be adequately met or better met by maintaining recreational opportunities in those areas with less desirable Desert Tortoise habitat. -Allow for a diverse range of recreational opportunity, yet be protective of the resources by eliminating unnecessary and/or redundant routes. -Maintain adequate access to commercial and private properties. -Allow for connectivity of the CBDT system through this sub region. -Allow for continuation of permitted non-competitive events where appropriate.
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Using 1:24,000 scale maps of each MAZ, the designation team was able to make full use of background data while determining whether a given route should be opened or closed. These data included existing as well as potential environmental concerns that might constrain a route network, such as:

- T&E and sensitive species and their habitats,
- Sensitive cultural sites,
- Highly erosive soils,
- Private property (to assess access needs as well as potential land use conflicts), and
- Commercial operations (e.g. ranching, mining and utility sites).

Access needs and other land use data were also mapped, including the following:

- Route information (e.g. route type [e.g. two-track vs. single track], condition [e.g. graded, rough, technical] and use level),
- Recreation point data (e.g. campsites, staging areas, viewpoints, rock hounding areas),
- Topographical and hydrological information (seeps, washes, springs, water tanks)
- Commercial information (mining sites, claims, debris), utility lines and facilities, ranching facilities (water tanks, out buildings) and land ownership (private, state, military, BLM).

A discussion of how data were managed is presented in Appendix R, Section R.1.

Maps also indicated areas of high biological importance (“biology polygons”) and areas of high human disturbance (“disturbance polygons”). The basis for these two mapped units is described below:

- **Biology Polygons:** These were created using recent field survey data gathered from the

proposed tortoise DWMA. The polygons identify areas where tortoise sign (scat, burrows, live animals) was higher than average. Within biology polygons, special emphasis was to be placed on eliminating routes determined to be unnecessary for commercial or private property access or whose contribution to recreational opportunities was adequately or better met by maintaining recreational opportunities in other areas with either less tortoise sign or habitat of lesser quality.

- **Disturbance Polygons:** These were also created from recent field survey data. The polygons indicated areas within the DWMA where the amount vehicle-related/dependent disturbance (roads, trails or tracks; dumping; evidence of shooting) was greater than average. Route designation within these polygons was conducted with a goal of reducing vehicle-related disturbance by closing redundant or unnecessary routes. Access would be provided to private property and commercial sites, but only at a level that would meet minimum requirements. Route redundancy was also taken into account, not only for private property and commercial access needs, but also for recreational opportunity. A route was closed if its contribution to recreational opportunities was better met by maintaining recreational opportunities in other areas with either less tortoise sign or habitat of lesser quality.

The next step involved the identification of a motorized vehicle access network using a decision-tree process (see Appendix R). BLM staff and management first reviewed each sub region and MAZ. Past, present and future management concerns and issues were considered, including the effect the use of various motorized routes was having on natural resource conservation, the distribution of recreation, types of recreation, resource impacts, law enforcement issues, land use conflicts, mineral development, livestock grazing and maintenance issues. Consideration also focused on changing use patterns and trends, specific problem areas and the effect of routes on adjoining non-BLM lands (e.g. Silver Lakes, El Mirage property owners). Based upon this, the decision tree was applied.

The decision tree was applied to each of about 5,200 enumerated vehicle routes within the redesign area. For each route, the decision tree poses a series of questions, which fall sequentially into the five following categories: (1) legal easements and rights-of-way; (2) T&E species; (3) other environmental issues; (4) the special qualities of a route, including safety concerns, recreational qualities and user conflict; and (5) route redundancy. The manner in which each question is answered determines which decision tree “limb” or pathway is followed. Footnotes to the tree identify other concerns that need to be taken into consideration as each question is answered. By following a decision tree pathway, the route designator would reach a recommended designation of “Open” or “Closed.” Each answer is alphanumerically coded such that the exact sequence of questions, as well as how they were answered, can be recorded for each vehicle route. These codes then enable each recommended decision to be easily entered into a database for future use and analysis. The result was a systematic, documented and repeatable framework for the evaluation of each route. Appendix R includes a table that summarizes the reasons why each of the enumerated routes that were considered during the 2002 off road vehicle designations was recommended as open or closed.

Redesign Mileage: Total miles of recommended open routes within the redesign area's subregions follows – Coyote 255, El Mirage 91, Fremont 372, Juniper 152, Kramer 362, Middle Knob 83, Newberry-Rodman 171, Red Mountain 362 and Superior 417, collectively 2,265 miles. This compares to 3,604 miles surveyed, and 1,575 miles designated open by BLM in 1985-87 (a designation based upon a survey that did not record many single-track routes).

Public Lands Not Included in Redesign Area: Lands outside the redesign area were reviewed to ensure that they were compatible with the West Mojave Plan's conservation strategy and were in compliance with federal regulations (specifically, 43 CFR 8342). In some cases, minor adjustments were necessary due, in part, to the comparatively incomplete nature of the field survey conducted for the 1985-87 network, which lacked modern GPS equipment and which did record many technical 4WD and motorcycle routes. Some examples of this updating follow:

- *North Searles Sub Region:* Route designations were updated to take into consideration changing visitor use patterns. To allow loop tours of the area by day users (e.g. picnickers), some new short routes were added. The addition of these short routes is intended to minimize some route proliferation through sensitive resources that is occurring as a result of the public's effort to create looping opportunities.
- *El Mirage Sub Region:* Route designations were altered to address land use conflicts between private property owners and public recreationists on BLM lands. A few routes that were designated open as part of the Edwards Bowl Plan were closed because of the manner in which they might inadvertently direct the public onto adjoining private lands. In order to maintain the looping touring recreation opportunities provided by those closed routes, other routes that had been designated closed by the Edwards Bowl Plan were opened. The net effect of these changes should be decreased conflicts between the private property owners and the public recreating on BLM lands. This action was carried out in accordance with 43 CFR 8342.1(3): *Areas and trails shall be located to minimize conflicts between off-road vehicle use and other existing or proposed recreational uses of the same or neighboring public lands, and to ensure the compatibility of such uses with existing conditions in populated areas, taking into account noise and other factors.*
- *El Mirage Sub Region:* Route designations were altered to address new information regarding desert tortoise distribution. Specifically, those routes in areas of higher than average tortoise sign that were located on bajadas and that did not provide necessary access to private property or commercial interests (e.g. active mines) or that did not serve as intra- or inter-regional connectors for recreational opportunity were designated closed. However, those non-redundant routes above the bajadas, generally on slopes greater than 20% were designated open to provide greater recreational opportunity (e.g. on the northern and eastern shoulders of the Shadow Mountain complex).
- *Black Mountain ACEC:* Route designations were altered to reflect new route information gathered during the 2001 field inventory of the adjoining Fremont and Superior sub regions. Along the mountainous western boundary of this ACEC a few routes previously designated closed were re-designated as open. These minor alterations would create a

route system or “network” that would have fewer dead-ends and greater inter connectivity between routes (e.g. more looping route opportunities). This part of the Fremont sub region is a very popular recreation area with a higher probability of route proliferation and incursions into sensitive areas (in this case cultural). Past experience has shown that by providing route systems that are interesting, challenging and logical as networks, compliance level can be substantially increased. These changes should result in greater compliance in spite of the increased use that this area is experiencing.

- *Edge-matching Designation Boundaries:* At twenty-five locations, the ACEC, 1985-87 and 2002 networks bounded each other. It was necessary to adjust the location of some routes at the borders to ensure that these networks, developed at different times and based upon differing field information, would constitute a single seamless and consistent motorized vehicle access network. This effort took into account the latest information concerning recreation uses and patterns, as well as new resource concerns (e.g. recently listed T&E species).

Maps of the Proposed Off Road Vehicle Designations: Appendix R includes a CD-Rom on which are maps of all proposed West Mojave Off Road Vehicle Designations.

Total Mileage: Alternative A recommends a route network that includes 2,265 miles of open routes within the redesign area, 159 miles within the Ord Pilot region, 406 miles within ACECs for which route networks were designated after 1980, and 2,268 miles of remaining 1985-87 designations, or 5,098 miles overall, a total that includes single-track motorcycle routes. This compares to 4,260 miles currently designated open, although that network does not include all single-track routes (many of which were not surveyed in 1985-7) and provided little or no designations for the Middle Knob, Amboy and Ord subregions. Proposed mileage of non-motorcycle routes in higher density tortoise population areas (see Chapter 3) would be 384, a decrease from the 439 miles currently open. The 406 miles within the ACECs would be a decrease from the current 427.

2.2.6.4 Take-Avoidance Measures

During 1998 meetings with USFWS, CDFG, and other regulatory personnel including the BLM, management prescriptions were identified to facilitate motorized vehicle access in ways that are compatible with resource protection, recovery of listed species, and conservation of species covered by incidental take permits. The intent of these prescriptions was to decrease tortoise mortality associated with dirt roads and to minimize habitat degradation. Prescriptions follow:

Open Routes: (MV-1) Routes designated open would be available for a variety of use including commercial, recreational, casual access, and non-competitive permitted uses. No motorized vehicles would be allowed to travel off of designated routes, except in emergency situations, or with the explicit permission of the BLM, or as specifically noted below.

Speed Limits: (MV-2) With respect to speed limits on unimproved roads, current law would apply. Basic Speed Law (38305) of the 2001 Vehicle Code, Traffic Laws states: “no

person would drive an off-highway motor vehicle at a speed limit greater than is reasonable or prudent and in no event at a speed which endangers the safety of other persons and property.

(MV-3) In DWMAAs, there is no proposal to install speed regulators. However, if monitoring or studies show that certain unimproved roads are causing increased tortoise mortality, the Implementation Team should coordinate with BLM, county road departments, and others to consider ways, including speed regulators, to reduce or avoid that mortality.

Washes: (MV-4) On public lands, motorized vehicle travel in washes would be allowed only in those washes that are designated as “open routes” and signed as appropriate.

Stopping, Parking and Camping: (MV-5) Within DWMAAs, on public lands administered by the BLM, (1) Motorized-vehicle-based camping would be allowed in previously existing disturbed camping areas adjacent to motorized vehicle routes designated “open,” and (2) Motorized vehicle stopping and parking would be allowed within 50 feet of the centerline of the designated route.

(MV-6) Outside DWMAAs, on public lands administered by the BLM, motorized vehicle stopping, parking and camping must occur within 300 feet of vehicle routes designated as open in accordance with existing regulations, which state that “no one may operate an off-road vehicle on public lands in a manner causing, or likely to cause significant, undue damage to or disturbance of the soil, wildlife, and wildlife habitat, improvements, cultural or vegetative resources or other authorized uses of public lands.” Stopping, parking and camping must be accomplished in such a manner as to curtail uncontrolled widening of routes and to deter undue degradation of sensitive or fragile resources.

Volunteer Clean-ups and Projects: From time to time various groups volunteer to organize and complete various projects. These projects include the removal of trash and debris on desert lands, the installation of signs, fencing, barriers, and routine maintenance activities. Each of these projects require individual project NEPA compliance documents that often limits the projects that can be completed and the efficiency of the use of these volunteers. Standard programmatic stipulations follow. They are intended to allow these activities to go forward without separate NEPA documentation.

2.2.6.5 Competitive Event Corridors and Race Courses

Johnson Valley to Parker Race Corridor: The Johnson Valley to Parker race corridor would be retained. Routes designated open would enable the Johnson Valley to Parker race to continue as a permitted organized event, including the portion of the route within the proposed Pisgah Crater ACEC. Organized events such as this race require the issuance of a “special event permit” which would allow for the event as long as certain conditions are met. These conditions may address a number of concerns, including specific stipulations from the CDCA plan, as well as law enforcement, sanitation, safety and resource protection, and any necessary minor modifications of the route.

Stoddard Valley to Johnson Valley Race Corridor: This corridor would be retained.

Barstow to Vegas Race Course: In December 2002, the Record of Decision for the BLM's Northern and Eastern Mojave Plan amended the CDCA Plan to eliminate the portion of the Barstow to Vegas course located within the NEMO planning area, that is, the eastern three-quarters of the route. Accordingly, under Alternative A, the CDCA Plan would be amended to eliminate the western fragment of the old course.

2.2.6.6 El Paso Collaborative Access Planning Area

The public lands within the El Paso Mountains and Ridgecrest subregions possess many unique recreational attractions, and are located immediately adjacent to the City of Ridgecrest. As a result, these two subregions are very popular with the recreating public. Opportunities to encourage the growth of eco-tourism, special OHV events and commercial filming in this area could benefit the local economy. These two subregions also possess many sensitive and important natural and cultural features, including a National Register District and habitat for the state-listed Mohave ground squirrel and other sensitive species. Finally, there are a number of private access needs that need to be addressed, including private parcels, commercial operations (such as quarries), and permitted facilities (guzzlers, water tanks, stock ponds and communications sites). Due to all of these factors, local community interest in the nature of the motorized access to be provided is very high.

The BLM, therefore, would establish the El Paso Collaborative Access Planning Area (El Paso CAPA) for the El Paso Mountains and Ridgecrest subregions. A motorized vehicle access network would be designed for the El Paso CAPA through the collaboration of the BLM with local jurisdictions (including the City of Ridgecrest and the County of Kern) and the general public. The intent is to adopt this network as a component of the CDCA Plan by no later than December 31, 2005.

The process would be conducted subject to certain biological and cultural resource criteria that would assure that the routes to be designated as open, closed, or limited would follow the principles of species and habitat protection used in the West Mojave Plan. These "sideboards" to the process are listed below:

- Adequate protection of raptor nests, particularly golden eagle and prairie falcon;
- Adequate protection of the Red Rock poppy and Red Rock tarplant, two species endemic to the El Paso Mountains;
- Limitation of vehicle access to wildlife springs and artificial water sources "guzzlers," and
- Protection of riparian habitat adjoining significant roosts for Townsend's big-eared bat (if any roost sites are located).
- Full compliance with the National Historic Preservation Act, and the cultural resources element of the California Desert Conservation Area Plan.
- Protection of significant cultural resources, including those listed in the National Register

of Historic Places or within the boundaries of the Last Chance Canyon National Register District and Area of Critical Environmental Concern.

- Protection of unevaluated cultural resources until their significance has been determined through formal evaluation.
- Protection of the cultural landscape within the El Paso Mountains;
- Protection of significant fossil-bearing units within the El Paso Mountains.

The West Mojave Plan's Record of Decision would amend the CDCA Plan to adopt the existing 1985-87 network for the El Paso Mountains and Ridgecrest subregions, pending the completion of the collaborative planning effort.

A timeline for completing the El Paso CAPA process follows. It is anticipated that the Record of Decision for the Western Mojave Desert Off Road Vehicle Designation Project will be signed by June 30, 2003. The next steps in the El Paso CAPA process are listed below:

- December 31, 2004: Revised motorized vehicle access network developed through the El Paso CAPA process for the El Paso Mountains and Ridgecrest subregions.
- December 31, 2005: Subsequent NEPA analysis completed and Record of Decision signed, amending CDCA Plan to adopt the network developed through the El Paso CAPA process.

2.2.6.7 California Back Country Discovery Trail

Certain segments of the open route network would be nominated for inclusion by the California Department of Parks and Recreation, Off-Highway Motor Vehicle Recreation Division (OHMVRD) as part of the California Back Country Discovery Trail (CBDT), a part of the California Statewide Motorized Trail System. The CBDT is a system of existing motorized routes that when formally designated would offer long distinct backcountry touring opportunities from Mexico to Oregon and throughout the state of California. Utilizing an OHMVRD grant, the BLM California Desert District commissioned a study that identified a proposed system of routes for inclusion as part of the CBDT. That proposed system of routes would be included as a component of the West Mojave Plan.

2.2.6.8 Implementation

Past experience in the West Mojave has generally shown that the most effective signing protocol (i.e. greatest public compliance) is one in which the routes designated open would be signed. Closed routes would not be signed and would either be reclaimed naturally or vertically mulched. Due to monetary and staffing constraints, as well as the remoteness of much of the West Mojave region, most of the routes designated closed would be left to natural reclamation. In those areas where environmental concerns are more profound (e.g. in areas where the amount of tortoise sign is above average or within the desert tortoise biology polygons) or where the intensity of use is such that it is necessitated, vertical mulching to the line-of-sight would be favored over natural reclamation.

Each BLM Field Office would prioritize the areas (e.g. sub regions, MAZs) and the routes to be addressed first. The range of actions and their intensity would vary based upon a number of factors (assessed need, available resources) and could include law enforcement, various forms of public education and other means, as well as signing and vertical mulching. A BLM Field Office might choose to involve the public as it prioritized these efforts and could employ options like those discussed below for monitoring route needs or prioritizing the maintenance of routes.

Discussions regarding route implementation and maintenance often prematurely place too much emphasis on route rehabilitation. Although rehabilitation has its place in the set of “tools” available to a field maintenance crew, it should only be undertaken after other route maintenance options have been exhausted. Delaying rehabilitation of routes in favor of more proactive maintenance steps is necessary if a field maintenance team is to successfully avoid the pitfalls of engaging in a program (such as rehabilitation) that can quickly become a “black hole” for scarce personnel and resources (e.g. heavy equipment, plant material). Placing premature emphasis on rehabilitation often creates its own set of new larger logistical problems, reducing if not eliminating any chance of successful implementation. Although the rehabilitation of routes would always remain an option, due to the requirements of extensive commitments of staff and resources it should not be called upon until other more proactive means of route maintenance are exhausted.

The implementation of the route system and its maintenance would begin with a first phase consisting of route management actions such as:

- Open route signing.
- Open route maintenance, with an emphasis on making the open network of routes more obvious and attractive to use than the closed routes. Existing park ranger and maintenance staff would do this during route signing and sign maintenance.
- Hand raking and disguise of prominent closed routes, including lining small rocks across closed routes to help discourage use.

Route rehabilitation work would begin only as a second phase on those routes where the first phase has not proven to be successful or where route conditions were clearly beyond the capability of the first phase to address. Although rehabilitation is recognized as a second phase, planning for this phase, including the securing of funding, should begin early. Having route designations in place would enhance the availability of funds, and would allow the BLM to pursue external sources of rehabilitation funding such as OHMVR, the National Fish and Wildlife Habitat Fund (USFWS), and contributions of volunteer labor from local, state, and national interest organizations.

Specific prioritization of work areas/sites would be guided by four factors, all of which are related to the location of the route:

- Factor 1: Are located within DWMAs,
- Factor 2: Have above-average tortoise sign (i.e. located within biology polygons),
- Factor 3: Have higher than average vehicle disturbance (i.e. located within disturbance

polygons) and

- Factor 4: Have significant urban interface issues.

Examples of areas where all of these factors come into play would include portions of:

- Kramer sub region west of the community of Silver Lakes;
- El Mirage sub region east of the Edwards Bowl area and
- Superior sub region northwest of Barstow.

The highest priority would be given to areas for which all four factors apply. The second priority would be those routes characterized by factors 1-3; the third priority would be routes characterized by factors 1 and 2; fourth priority to routes characterized by factor 1 only; and fifth priority to remaining routes.

Past experience, such as that obtained through the implementation of the Ord Mountain route designation pilot, can give valuable insight into not only which actions, but in what order they should occur. Implementation of the Ord Mountain Pilot plan revealed that the most effective short-term action taken was an increase in enforcement and visitor service patrolling, which resulted in a commensurate increase in visitor contacts. Through this increased number of contacts visitors realized that BLM was aggressively and successfully implementing the new network. Visitors generally responded to this in one of two ways. Those who were not receptive to staying on designated routes gradually moved to the “Open Areas” where they could continue to recreate in a more unrestricted manner. Others continued to recreate in the Ord Mountains.

The least effective short-term action taken in the Ord Mountains was signing the closed route network. Not only did this effort consume a great deal of staff time; in addition, signs were removed almost as quickly as they were put up. The need to resign routes placed additional demands on scarce staff time and material.

Given the lessons learned from the Ord Mountain experience, the successful implementation of a new route network should proceed by carrying out these steps in the following order:

- Pursue funding for signage and the staff necessary to implement the route signing effort (i.e. both law enforcement and maintenance staff).
- Pursue funding for route rehabilitation.
- Sign the open route network (do not sign the closed route network).
- Maintain the open route network with the principal goal being to make the open route network more attractive for use than the closed route network. Make ample use of the tools such as the York Rock Rake to shape, clear and contour the open route network.
- Install informational kiosks and interpretive signing where it would be most effective. Site these facilities where it would reach the greatest number of visitors and where it would target an audience that might be the most receptive to such facilities. For example, in the Kramer sub region such facilities might be most beneficial at major trailheads and campgrounds in the eastern portion of the sub region that are heavily

visited by families enjoying camping.

- Develop and publish maps that are up-to-date, readily available and have a readily understandable and useful format. For example, many visitors are familiar with the informational format employed by USGS quadrangle sheets. The Friends of Jawbone have published a map which has proven very popular amongst users to that region and that might serve as a good “for purchase” template. The Off-Highway Motor Vehicle Recreation Division of California State Parks has produced a series of inexpensive pocket maps for each of its facilities that may serve as a good template for very inexpensive or free maps.
- Regularly maintain signs, kiosks, routes, maps and brochures.

At this point in the new route implementation process, if no new funding for law enforcement has been forthcoming, then all that can be done to obtain voluntary compliance has already taken place. Voluntary compliance would be slow in the beginning, but would increase over time (within the next 2 – 10 years).

At such time as additional funds are available for law enforcement and rehabilitation, the following steps should be taken:

- Begin route rehabilitation in priority areas.
 - Route rehabilitation would require active maintenance for at least 1 year.
- Initiate enforcement and visitor service patrols with the following caveats:
 - Do not over-commit; funding must be available to sustain the new patrol for a period of at least 2 years.
 - As enforcement efforts move into new areas, inappropriate use could migrate back to areas where the program had already been implemented. Address this by allocating more funding to new areas, as there would still be a residual cost to maintain the first (earlier implemented) area.
 - Keep in mind that it typically takes one year from the date funding becomes available until the time that a new fully delegated ranger is deployed into the field.
 - Consider that turnover amongst law enforcement staff is high, which will reduce the efficiency of enforcement efforts both due to vacancies and the need for new training.

Table 2-24 presents an implementation time frame. Table 2-25 lays out the cost of implementation actions.

**Table 2-24
Implementation Time Frames**

ACTION	COMPLETION TIME	COMMENTS
Pursue funding and FTE for enforcement, visitor services, and maintenance.	Year 3 - Ongoing	BLM works on a three-year budget cycle. There may be some infusion earlier.
Pursue funding for route rehabilitation.	Year 2 - Ongoing	This would likely come from both federal appropriations and external

		sources. Someone should be given this as a task.
Sign open route network.	Year 1- Ongoing	Assumes funding in year 1
Maintain open route network.	Year 1- Ongoing	Assumes funding in year 1
Install informational kiosks and interpretive signing.	Year 1- Ongoing	Assumes funding in year 1
Develop and publish maps and brochures.	Year 1- Ongoing	Assumes funding in year 1
Routinely maintain signs, kiosks, routes, maps, and brochures.	Year 2- Ongoing	Assumes ongoing funding

**Table 2-25
Implementation Costs**

ACTION	COST	PRIORITY
Pursue funding and FTEs for enforcement, visitor services, and maintenance.	\$100,000 annually per Law Enforcement Officer w/vehicle X 5 \$75,000 annually per Visitor Service Staffer w/Vehicle X 5 \$75,000 annually per Maintenance Staffer. w/ Vehicle X 5 Total Annual funding needed: \$1,2500,000	1
Pursue funding for route rehabilitation.	\$100,000 annually	1
Sign open route network.	\$10,000 one time cost	2
Maintain open route network.	Included in staff cost	2
Install informational kiosks and interpretive signing.	\$50,000 one time cost	1
Develop and publish maps and brochures.	\$20,000 one time cost	2
Routinely maintain signs, kiosks, routes, maps, and brochures.	\$30,000 annually	2

2.2.6.9 Modification of Route Network

The West Mojave Record of Decision would amend the CDCA Plan to adopt the motorized vehicle access network as a component of that Plan. Any significant future modifications of the network, therefore, could only occur through an amendment to the CDCA Plan, including full NEPA compliance, public involvement, interagency coordination, and the preparation of a Record of Decision for the amendment.

Minor modifications of the network during plan implementation would be allowed, however, without the necessity of a formal plan amendment. FLPMA allows BLM resource management plans (such as the CDCA Plan) to be “maintained as necessary to reflect minor changes in data” (Section 1610.5-4.) Plan maintenance is limited, in that it cannot result in the expansion of the scope of resource uses or restrictions, or change the terms, conditions and decisions of the approved plan. It is limited to further refining or documenting a previously approved decision incorporated in the plan. In view of these limitations, “minor realignments” of the route network would be considered to be plan maintenance, and could be made without formal amendment of the plan. “Minor realignments” would include the following:

- Minor realignments of a route necessary to avoid cultural resources sites identified during the process of complying with Section 106 of the National Historic Preservation Act.
- Minor realignments of a route necessary to reduce impact on sensitive species or their habitats.
- Minor realignments of a route that would substantially increase the quality of a recreational experience, but that would not affect sensitive species or their habitat, or any other sensitive resource value.

The term “minor realignment” refers to a change of no more than one linear mile of one designated route. It could include the opening of an existing, but previously closed, route that serves the same access need as the open route that is to be “realigned.” It does not include the construction of a new access route involving new ground disturbance, except where new construction is necessary to avoid a cultural resource site or sensitive species.

Minor realignments must be documented in the official record. The reason for the alignment change shall be recorded and kept on file in the affected BLM Field Office, and the change noted in the CDCA Plan.

Route designation on newly acquired lands would occur every five years (or sooner, if judged to be prudent by the Implementation Team), would comply with applicable federal regulations and statutes, and be incorporated into the overall route implementation process. New route networks on acquired lands would be required to facilitate conservation programs and be complimentary to the network resulting from alternative implementation

2.2.7 Education Program

The West Mojave Plan cannot be successfully implemented without the cooperation and support of the general public, desert stakeholders and others with an interest in the western Mojave Desert. This requires an understanding of both the conservation strategy and the resource needs of the desert.

2.2.7.1 Goals

An education program designed to accomplish this should be guided by the following program goals:

- **Goal 1:** Increase public awareness, appreciation and knowledge of
 - Desert ecology, sensitive species, and the need to preserve habitat and protect the desert environment
 - Agency activities, laws and regulations (government and private conservation groups)
 - Desert etiquette (minimizing deleterious effects on the desert environment)
- **Goal 2:** Increase public support for and participation in activities that benefit the desert ecosystem. Focus on opportunities rather than restrictions.

- **Goal 3:** Support schools in educational efforts related to desert topics
- **Goal 4:** Encourage scientific study of desert species and ecosystems
- Facilitate publication of information on desert species and environment
- Assist in building a repository of information on the Mojave Desert (books, journal articles, reports, bibliographies, photos)

2.2.7.2 Targets

The education program should be designed to reach a broad range of desert users. The following is a representative, but not an exclusive, list of groups to be targeted: (1) the general public; (2) schools; (3) special interest groups (off-highway vehicle recreationists, equestrians, hunters, campers, hikers, rockhounds, historical societies, biologists); (4) government agencies; and (5) development and commercial interests (construction firms, miners, film makers and the military).

2.2.7.3 Delivery

Utilize television, radio, and Internet web sites.

Distribute information and education materials

- Through schools, museums, private contractors and organizations
- At recreation vehicle shows, off highway vehicle events (e.g., dual sport), and dealer associations (Harley-Davidson, Honda, Suzuki, etc.).
- At convenience stores and other walk-in commercial interests. Consider using restaurant place settings and napkins as part of public outreach.
- Through existing portals, such as Friends of El Mirage and Friends of Jawbone.
- At the Planning Departments of each participating jurisdiction.
- At Resource Conservation Districts.
- At other non-profit environmental education centers (e.g. Wildlands Conservancy in Pioneertown, Summertree Institute in Morongo Valley).
- At BLM ACEC's such as Harper Dry Lake, Big Morongo Canyon, and Desert Tortoise Natural Area.

Finally, consider targeting users through green-sticker money, by distributing materials at the time the sticker is purchased through Division of Motor Vehicles.

2.2.7.4 Means

Education Coordinator: (E-1) A coordinator of educational programs should be identified. The education coordinator should work closely with the Implementation Team and/or appropriate regulatory agencies to approve the final education program, judge its efficacy, and ensure appropriate implementation.

(E-2) The first effort of the education coordinator should be to determine environmental education programs that already exist, and to determine gaps in the program. The coordinator should produce and implement the program to, in part, fill in these gaps. The education coordinator should take into consideration the experiences of successful desert education programs, such as the Sand Canyon Environmental Education Program, and the Hands Off Pardner program.

(E-3) The education coordinator should work with non-government organizations with an interest in the western Mojave Desert to better reach group members. The coordinator should work with off-highway vehicle groups to help fund existing programs and create new ones as needed to increase sensitivity to desert ecology.

(E-4) In drawing up a single, programmatic education program to be given to construction workers, the coordinator should review files maintained by the USFWS and CDFG to see the range of education materials that have been used since the listing of the tortoise, for example. Between 1990 and 1995, for example, such an approach resulted in rescuing 1,455 tortoises out of harm's way during construction of 171 federally-authorized projects in tortoise-occupied habitats (LaRue and Dougherty 1997-1998).

It is important that anyone designing and implementing an education program work with law enforcement personnel (including BLM, county animal control, USFWS enforcement agents and CDFG rangers) to identify problems and develop solutions. (K6a).

School Education: (E-5) Develop displays, programs, and materials that can be provided to school districts in the West Mojave planning area. Fund and/or cooperate with existing programs (San Bernardino County Museum ecological study kits, etc.) to provide for enhanced outreach to schools in desert communities.

Schools should be targeted at the district level. Although schools in the western Mojave Desert area should be targeted first, it is important to reach the larger area, including the Inland Empire and Los Angeles County school districts.

Other Public Institutions: (E-6) Provide support to the efforts of museums, zoos, and other public institutions to develop pertinent desert tortoise exhibits, including:

- The San Bernardino County Museum's program to develop a desert tortoise exhibit.
- The Mojave Narrows Regional Park's development of an outdoor interpretive program involving a live-tortoise exhibit.

- Ongoing environmental education at the Lewis Center, other programs supported by Edwards Air Force Base, the BLM's community outreach program, etc.

Information Products: (E-7) The education program should include the preparation, distribution and/or installation of signs, interpretive kiosks, displays, maps, videos, education packets and brochures. Each of these is discussed below.

Proper *signing* on the ground is essential. A signing program should include the following:

- Strategically place an appropriate number of signs between the Stoddard Valley and Johnson Valley off highway vehicle open areas and the adjacent Ord-Rodman DWMA.
- Erect signs along DWMA boundaries. The Implementation Team, together with the education coordinator, should ensure that boundary signs are appropriately worded and spaced to maximize their usefulness.
- Design and erect a new sign at the Desert Tortoise Natural Area; include in the sign appropriate behavior messages and offer an ☐800" telephone number for information on tortoise adoption.
- Place information *kiosks* in pertinent parts of the desert.
- Work with Caltrans to design and install separate, freestanding, interpretive kiosks with desert tortoise protection information at highway rest areas.
- Target off highway vehicle use areas, such as El Mirage and Jawbone; distribute materials through volunteer groups associated with those areas.

Portable *displays* should be developed and produced, including a portable desert tortoise exhibit, for use at county fairs, shows, agency offices, shopping malls, museums, and the BLM's California Desert Information Center in Barstow. User-friendly *maps* should be prepared which show approved routes of travel. Work with university, media and corporate sponsor(s) to develop a quality *video* on desert tortoises for release to network, local, and cable television stations. Develop educational *packets* for use in classrooms. Produce a *brochure* to be distributed by jurisdictions that outlines the farmer's responsibilities under the endangered species act when developing habitat for target species. Produce a *brochure* to be distributed by jurisdictions describing the burrowing owl and its habitat features in urban areas.

Training: (E-8) As with the Desert Tortoise Council workshops, annual training for consultants and others working at construction sites should be provided to ensure that they have a foundation in training for monitoring.

(E-9) In addition, education programs should be provided, on a case-by-case basis, to train utility and Caltrans maintenance staff, personnel at mines, government employees, and others to conduct tortoise rescue actions at isolated sites.

Telephone Hotline: (E-10) Develop a telephone hotline, similar to the hotline program being implemented for the Clark County, Nevada desert tortoise program. The hotline

- Should provide information regarding pet adoption, not releasing pet tortoises, what to do if a tortoise wanders into your yard, regulations, and plan-based support information.
- Should also target construction personnel working in non-survey areas so that they may call in the event they find a tortoise in harm's way. Information should be available about the burrowing owl.
- Should not require a toll call.

Specific Information Needs: (E-11) Develop specific outreach plans for the following purposes:

- To maximize the effectiveness of fences that may be constructed along the interface between urbanizing communities and the HCA.
- To discourage poaching. In particular, target any communities that may practice tortoise collection for ceremonial or other purposes.
- To reduce raven - tortoise conflicts. The purpose would be to reduce the number of citizens who purposely feed ravens or who inadvertently do so by leaving pet food out where ravens can easily access it. These educational efforts should include, but not be limited to, business and agriculture.

(E-12) Develop local television outreach that talks about the plight of the tortoise and implementation of the West Mojave Plan. Several focal issues include discouraging release of pet tortoises, educating people about not poaching a Threatened species, and minimizing release of free-roaming dogs.

2.2.8 Monitoring

The success of the West Mojave Plan's conservation strategy would depend, to a great degree, on the ability of the participating agencies to ensure that its measures are being properly implemented, that its strategies are effective and that the plan is flexible enough to adapt to changing conditions and circumstances. This requires the establishment of a program to monitor the progress of plan implementation and success at attaining the biological goals and objectives of the plan. A monitoring program is outlined below. The Plan also would establish a "feedback loop" whereby the findings of monitoring are utilized to adapt the management plan to new

circumstances and issues. An “adaptive management” program that indicates how the findings of monitoring would be applied is outlined in section 2.2.9.

(M-1) The West Mojave Implementation Team would maintain a database of survey reports and new records of occurrence of all species addressed by the Plan in cooperation with CDFG’s Natural Diversity Data Base. Botanical surveys would conform to the CDFG *Guidelines for Assessing the Effects of Proposed Projects on Rare, Threatened, and Endangered Plants and Natural Communities* (CDFG, 2000).

(M-2) It would also keep records of newly permitted activities issued within the conservation areas. Annual reports would record the amount of incidental take permitted and the conservation achieved for each species, whether by acquisition or by increased management.

Specific monitoring actions proposed for each species are given in Table 2-26. Following the table, a supplementary discussion concerning several of these measures is provided. Finally, more detailed and complex prescriptions not described in the table are addressed.

**Table 2-26
MONITORING**

Species	Monitoring
Alkali mariposa lily	(M-3) Conduct surveys at other alkaline springs, seeps, and playas within three years of plan adoption. (M-4) Conduct surveys within saltbush scrub west of EAFB. (M-95) See supplementary discussion below.
Barstow woolly sunflower	(M-5) Conduct additional surveys north of EAFB and Kramer Junction and at Coolgardie Mesa, subject to the availability of funding (supplementary discussion below).
Bats California leaf-nosed bat, long-legged myotis, spotted bat, pallid bat, Western mastiff bat, Townsend’s big-eared bat	(M-6) Bat populations in all significant roosts should be censused every five years. (M-7) Approved projects that impact bats under the take limit would be reported annually to the CDFG and the USFWS. (M-8) Continue surveys of areas with high potential for containing significant roosts. (M-9) Effectiveness of mitigation measures providing for safe exit of bats should be reported.
Bendire’s thrasher	(M-10) Establish baseline numbers within three years for all portions of the conservation area. Future monitoring would be habitat-based.
Bighorn sheep	(M-11) Continue telemetry research in the San Bernardino Mountains. Monitor herd numbers in five- year cycles. (M-12) Conduct a census of bighorn herd numbers following CDFG protocol for 2 ranges per year. Ten ranges now support bighorn, so monitoring is on a five-year cycle. Any re-introduced herds would be monitored. The CDFG would perform all monitoring of sheep numbers and movement patterns.
Brown-crested flycatcher	(M-13) Conduct periodic censuses at Big Morongo Canyon and in Mojave River, subject to available funds. (LG-9) BLM would make a determination of regional rangeland health standards on public

Species	Monitoring
	lands in the east Sierra Canyons within two years of Plan approval.
Burrowing owl	Complete baseline inventory of conserved habitat within two years (see Rap-12). (M-15) Compile annually record of take and conservation by acquisition and relocation. (M-16) Survey sites in Antelope Valley and along Mojave River, subject to available funds.
Carbonate Endemic Plants Cushenbury buckwheat, Cushenbury milkvetch, Cushenbury oxytheca, Parish's daisy Shockley's rockcress	(M-18) USFWS would coordinate monitoring of plant populations.
Charlotte's phacelia	(M-19) Monitor populations in the Short Canyon and Sand Canyon ACEC's; monitoring is recommended at Red Rock Canyon State Park. (LG-9) BLM would make a determination of regional rangeland health standards on public lands in the east Sierra Canyons within two years of Plan approval.
Crucifixion thorn	(M-21) Conduct additional surveys of potential habitat between Pisgah and Fort Irwin, subject to available funds. Record and report new locations to NDDDB and San Bernardino County.
Desert cymopterus	(LG-18) Determine rangeland health on Harper Lake allotment.
Desert tortoise	(M-98) See supplementary discussion below. (DT-17) (Monitoring for disease) See previous discussion. (DT-21) (Fence monitoring) See previous discussion. (DT-39) (Raven monitoring) See previous discussion.
Ferruginous hawk	(M-22) Monitor hawk numbers at Harper Dry Lake and in the Mojave and Antelope Valleys, subject to the availability of funding. (M-23) Identify problem electrical towers. Compile records of electrocutions from incidental sightings, reports from the public and reports from utilities to identify "problem poles". (M-24) Update the BLM's Key Raptor Area database by conducting the periodic (5 year intervals) monitoring specified in the nationwide plan for raptors on public lands, subject to available funds.
Flax-like monardella	(M-25) Census plants at known site and identify new locations, based on suitable habitat, subject to available funds.
Golden eagle	(M-26) Conduct surveys within three years of Plan adoption to determine current activity at all nests present in 1979 to confirm the baseline numbers. (M-27) Compile an ongoing record of electrocutions from incidental observations and reports from the public and utilities. (M-28) Monitor nests on transmission lines annually. (M-24) Update Key Raptor Area database at five year intervals.
Gray vireo	
Inyo California	(M-32) Monitor spread of tamarisk and Phragmites (supplementary discussion below).

Species	Monitoring
towhee	(M-33) Conduct surveys throughout the range of the Inyo California towhee every five years (supplementary discussion below).
Kelso Creek monkeyflower	(M-34) Continue surveys on public land identified as potential habitat. (LG-9) BLM would make a determination of regional rangeland health standards on public lands in the Rudnick common allotment within two years of Plan approval.
Kern buckwheat	(M-36) Perform annual review of compliance with HCP protection measures, with an objective of detecting new disturbance in occupied habitat.
Lane Mountain milkvetch	(M-36) Perform annual review of compliance with HCP protection measures, with an objective of detecting new disturbance in occupied habitat. (M-38) Report annually on progress of acquisitions.
Leconte's thrasher	
Least Bell's vireo	(M-13) Conduct periodic censuses at Big Morongo Canyon and in Mojave River, subject to available funds.
Little San Bernardino Mountains gilia	(M-41) Conduct surveys on BLM parcels near Joshua Tree, within JTNP, and north of Yucca Valley near Rattlesnake Canyon. (M-42) Track take to limit of 50 acres. (M-96) See supplementary discussion below.
Long-eared owl	(M-43) Conduct periodic censuses at Argus Mountains, Mojave Narrows Park, Big Morongo ACEC, subject to the availability of funding. (M-44) Conduct monitoring of Argus Mountains Key Raptor Area at five-year intervals and report to the national raptor database. (M-45) CDFG would conduct monitoring at Indian Joe Canyon Ecological Reserve.
Mohave Ground Squirrel	MGS-4) See earlier discussion.
Mojave monkeyflower	(M-46) Monitor effects of cattle grazing. Incorporate results of monitoring by OHV commission into database (supplementary discussion below.) (M-47) Monitor spillover effects, if any, from OHV open areas (supplementary discussion below). (M-48) Continue surveys on public land in Brisbane Valley portion of conservation area between I-15 and Mojave River (supplementary discussion below). (M-49) Continue surveys of remainder of core reserves and adjacent areas (supplementary discussion below).
Mojave fringe-toed lizard	(M-50) Delineate blowsand habitat at Alvord Mountain, Pisgah, Cronese Lakes, and northeast of Harper Dry Lake. (M-51) Measure dune movement. (M-52) Construction of windbreaks and exotic plants potentially affecting occupied habitat should be monitored. (M-53) California OHV Commission would fund periodic monitoring of this species at Raser and El Mirage Open Areas to delineate habitat and census lizards. .
Mojave River vole	(M-54) Track groundwater levels at specified locations quarterly and report annually. (M-55) Track disturbance to and health of riparian and wetland vegetation within the vole's range annually.
Mojave tarplant	(M-56) Census population at Short Canyon and Cross Mountain every five years.
Ninemile Canyon	(LG-9) BLM will make a determination of regional rangeland health standards on public

Species	Monitoring
phacelia	lands in the east Sierra Canyons within two years of Plan approval.
Panamint alligator lizard	(M-32) Monitor spread of tamarisk and Phragmites (supplementary discussion below). (M-64) Conduct surveys concurrently with the Inyo California towhee.
Parish's alkali Grass	(M-60) Establish baseline population numbers and acreage of occupied habitat at Rabbit Springs. (M-3) Conduct surveys of other alkaline springs and seeps within three years to determine if other populations are present in the planning area. (M-95) See supplementary discussion below.
Parish's phacelia	Census populations every five years, with an estimate of acreage of occupied habitat, subject to available funds (See P-43, P-46). (M-59) Perform annual report describing vehicle traffic, if any, on playas. (M-95) See supplementary discussion below.
Parish's popcorn flower	(M-60) Establish baseline population size and area at Rabbit Springs. (M-3) Conduct surveys of other alkaline springs and seeps within three years to determine if other populations are present in the Planning area. (M-95) See supplementary discussion below.
Prairie falcon	(M-26) Conduct surveys within three years of Plan adoption to determine current activity at all nests present in 1979 to confirm the baseline numbers. (M-24) Update Key Raptor Area databases at five year intervals. (M-66) Report on falconry take permits. (M-97) See supplementary discussion below.
Red Rock Poppy	(M-67) Conduct periodic review of potential effects of OHV use on known populations. (M-68) Coordinate population surveys with Red Rock Canyon State Park. Perform population census every five years.
Red Rock tarplant	(M-67) Conduct periodic review of potential effects of OHV use on known populations. (M-68) Coordinate population surveys with Red Rock Canyon State Park. Perform population census every five years.
Reveal's buckwheat	(M-71) Census plants at known site and identify new locations, based on suitable habitat, subject to available funds.
Salt Springs checkerbloom	(M-60) Establish baseline population size and area at Rabbit Springs. (M-3) Conduct surveys of other alkaline springs and seeps within three years to determine if other populations are present in the Planning area. (M-95) See supplementary discussion below.
San Diego horned lizard	(M-74) Conduct periodic review of potential effects of adjacent developments on horned lizard populations at Big Rock Creek and Mescal Creek.
Short-joint beavertail cactus	(M-75) Establish baseline population numbers for Big Rock Creek and Mescal Creek areas. (M-76) Determine numbers and identity of beavertail cacti on north slope of San Bernardino Mountains above Lucerne Valley and Hesperia.
Southern Sierra plants (7 Species)	
Southwestern pond turtle	(M-78) Continue restoration and monitoring at Camp Cady and Afton Canyon. (M-79) Conduct surveys of Kelso Creek and Jawbone-Butterbredt ACEC.
Southwestern willow flycatcher	(M-13) Conduct periodic surveys of potential nesting habitat at Big Morongo Canyon and in Mojave River.

Species	Monitoring
	(LG-9) BLM would make a determination of regional rangeland health standards on grazing allotments in the east Sierra Canyons within two years of Plan approval.
Summer tanager	(M-82) Conduct periodic censuses at known nest sites, subject to available funds.
Vermilion flycatcher	(M-82) Conduct periodic censuses at known nest sites, subject to available funds.
Western snowy plover	(M-84) Conduct periodic censuses of Harper Dry Lake, and Dale, Koehn, and Searles lakes.
Western yellow-billed cuckoo	(M-85) Conduct periodic censuses in Mojave River riparian potential nesting habitat, subject to available funds. (LG-9) BLM would make a determination of regional rangeland health standards on grazing allotments in the east Sierra Canyons within two years of Plan approval.
White-margined beardtongue	(M-87) Census known locations every three years. (M-88) Monitor vehicle use of Argos Wash.
Yellow-breasted chat	(M-82) Conduct periodic censuses at known nest sites, subject to available funds. (LG-9) BLM would make a determination of regional rangeland health standards on grazing allotments in the east Sierra Canyons within two years of Plan approval.
Yellow warbler	(M-82) Conduct periodic censuses at known nest sites, subject to available funds. (LG-9) BLM would make a determination of regional rangeland health standards on grazing allotments in the east Sierra Canyons within two years of Plan approval.
Yellow-eared pocket mouse	(M-93) Survey east Sierra Canyons and public land in Kelso Valley, subject to available funds. (LG-9, M-94) BLM would conduct rangeland health determinations for allotments within the range of the yellow-eared pocket mouse within two years of Plan approval.

More detailed habitat and species-based monitoring efforts are described below.

2.2.8.1 Supplementary Discussion

Barstow Woolly Sunflower Prescription M-5: CDFG would perform botanical surveys of its West Mojave Ecological Reserve as funds become available. BLM would conduct surveys on public lands at known sites and adjacent to private parcels as funds become available. Priority sites include: 1) the North Edwards Conservation Area, 2) the Pilot Knob grazing allotment, and 3) Williams Well and Coolgardie Mesa.

The Army, BLM, and USFWS would continue botanical surveys of Lane Mountain Milkvetch on Coolgardie Mesa. These studies may locate new occurrences of Barstow woolly sunflower.

Inyo California Towhee and Panamint Alligator Lizard Prescriptions M-32 and M-33: Monitor the riparian vegetation to assess impacts by feral burros. Install an enclosure fence if monitoring shows burros are continuing to impact the springs. Monitor the presence or absence of *Phragmites* and Tamarisk at eleven springs on BLM lands and 3 springs on State lands. Perform the vegetation assessments in conjunction with the census of towhee populations. The bird census should be conducted in conjunction with the China Lake NAWS and done

within the first two years of Plan adoption. A concurrent search, and, if feasible, pitfall trap survey of Panamint alligator lizards, should be conducted.

Mojave Monkeyflower Prescription M-46: The BLM would monitor the effects of grazing on extant monkeyflower populations. The seasonal grazing restrictions enacted in 2002 for the Ord cattle allotment may affect populations of the Mojave monkeyflower. The monkeyflower populations straddle Camp Rock Road on both sides at the northwest edge of the Ord allotment. The spring grazing exclusion west of Camp Rock Road could benefit plants at that location. By contrast, relocation of the cattle to the east side of this road could adversely affect Mojave monkeyflower plants. Grazing of the occupied habitat by cattle is very light in this area, however.

Mojave Monkeyflower Prescription M-47: The California Off-Highway Vehicle Commission, in cooperation with BLM, would monitor potential impacts to the monkeyflowers within the Stoddard Valley Open Area. BLM would assess “spillover effects” from OHV use, if any, to monkeyflowers outside the open area.

Mojave Monkeyflower Prescription M-48: BLM would perform botanical surveys of public lands designated for disposal under the Air Force Land Tenure Adjustment program prior to any land exchange. These surveys would provide information on extent of incidental take, if any, as well as on the suitability of lands that could be added to the Brisbane Valley unit through adaptive management.

Mojave Monkeyflower Prescription M-49: BLM would perform botanical surveys of the two core reserves and adjacent areas as funds become available. Priority sites include: 1) the Mojave fishhook cactus ACEC in the Brisbane Valley, 2) Kane Springs, where monkeyflowers have not been reported since 1906, and 3) the Newberry Mountains Wilderness between Kane Springs and the Azucar mine.

2.2.8.2 Alkali Seeps, Springs and Meadows

(M-95) The West Mojave staff met with agency botanists and conservation biologist Reed Noss to discuss protection of significant and unusual plant communities. This group recognized alkali springs, seeps, and meadows as the highest priority for community protection in the West Mojave Plan because of the potential for conservation of rare plant species and because these areas have not been extensively inventoried.

BLM and CDFG would conduct botanical surveys of alkali wetland communities in the western Mojave Desert, subject to available funds. The high-interest species present in the communities are listed in Table 2-27.

**Table 2-27
Rare Plant Species Found In
Alkali Wetland Communities**

SPECIES	SITES CONTAINING ALKALI SPRINGS, SEEPS AND MEADOWS
<p style="text-align: center;"><u>Target Species</u></p> <p>Alkali mariposa lily (<i>Calochortus striatus</i>) Black sedge (<i>Schoenus nigricans</i>) Hot springs fimbriatylis (<i>Fimbristylis thermalis</i>) Lancaster milkvetch (<i>Astragalus preussii</i> var. <i>laxiflorus</i>) Parish's alkali grass (<i>Puccinellia parishii</i>) Parish's phacelia (<i>Phacelia parishii</i>) Parish's popcorn flower (<i>Plagiobothrys parishii</i>) Parry's saltbush (<i>Atriplex parishii</i>) Salt Springs checkerbloom (<i>Sidalcea neomexicana</i>)</p> <p style="text-align: center;"><u>Other High Interest Species</u></p> <p>Cooper rush (<i>Juncus cooperi</i>) Tecopa bird's beak (<i>Cordylanthus tecopensis</i>)</p>	<p>Rabbit Springs (Lucerne Valley) Paradise Springs (north of Barstow) Cushenbury Springs (Lucerne Valley) China Garden Springs (NAWS) Indian Garden Springs (NAWS) Harper Lake wetlands (west of Barstow) Oasis of Mara (Twenty-nine Palms) Olancha Green Springs - Kelso Valley Turner Springs - Victorville South end of Buckhorn Lake (EAFB) South end of Rogers Dry Lake (EAFB) Red Rock Canyon (Red Rock Canyon State Park) Box S Springs (Lucerne Valley) Koehn Lake (Kern County) Barrel Springs (Palmdale) San Andreas Rift Zone (Palmdale) Jack Spring (south of Fort Irwin)</p>

2.2.8.3 Little San Bernardino Mountains Gilia

(M-96) Completion of the conservation strategy is dependent on additional information on the species distribution and on adaptive management. The monitoring plan is outlined below. BLM and the National Park Service would perform monitoring for this species, subject to available funds.

- Conduct surveys in areas of potential habitat. A five-year period would probably be necessary to assure inclusion of all potential habitat and years of sufficient rainfall so that the plants are detectable. Additional surveys near Rattlesnake Canyon on public lands are needed, as are surveys of washes flowing north from JTNP near the community of Joshua Tree. Additional surveys within Joshua Tree National Park in the Quail Creek drainage and near the known location in Pinto Basin are needed.
- Compile results of the surveys and determine habitat requirements for this species.
- Determine threats to the species.
- Delineate a more precise conservation area encompassing populations in all portions of the species range and including connecting habitat between localized stands.

2.2.8.4 Prairie Falcon

(M-97) The West Mojave Implementation Team would maintain a database of survey reports and new records of occurrence of the prairie falcon in cooperation with the CDFG's Natural Diversity Data Base and raptor nest card records program. It would also keep records of newly permitted activities issued within the Key Raptor Areas for prairie falcon and for other

areas within one mile of a known prairie falcon nest. Annual reports would record the amount of incidental take permitted and the conservation achieved, whether acquisition, avoidance of nest sites, or increased management.

Conduct surveys within three years of Plan adoption to determine current activity at all nests present in 1979 to confirm the baseline numbers. Compile an ongoing record of electrocutions from incidental observations and reports from the public and utilities. Update the Key Raptor Area database every five years.

CDFG would report to the Implementation Team the number of falcons allowed for take for use in falconry, if any.

2.2.8.5 Tortoise Distance Sampling Transects

(M-98) A line distance sampling program (or other scientifically credible method, if distance sampling proves ineffective) would be implemented in the Fremont-Kramer, Superior-Cronese, Ord-Rodman, and Pinto Mountain DWMA. To date, this is the only method that has been identified to determine tortoise densities and population trends on a regional basis. It has full endorsement of the Management Oversight Group, consisting of the resource managers responsible for lands and resource protection throughout the listed range of the desert tortoise (i.e., USFWS, BLM, National Park Service, Department of Defense, and state wildlife agencies).

Although there are five delisting criteria given in the Recovery Plan, the primary criterion for delisting tortoises in the West Mojave Recovery Unit, which corresponds to the Plan area, is:

As determined by a scientifically credible monitoring plan, the population within the recovery unit must exhibit a statistically significant upward trend or remain stationary for at least 25 years (one desert tortoise generation).

Although there are limitations associated with the data gained through distance sampling, it remains the best available method to determine if the Recovery Plan criterion is being met or not.

Each of the four DWMA identified in the western Mojave Desert was surveyed by distance sampling in 2001 and 2002. Current proposals by the USFWS are to survey each recovery unit every year for five years, every other year during the next five years, then every year for five years, and so on, for the duration of the Plan, which is given as 30 years. As such, distance sampling would occur in the western Mojave Desert during the following years: 2003, 2004, 2005, 2007, 2009, 2011, 2012, 2013, 2014, 2015, 2017, 2019, 2021, 2022, 2023, 2024, 2025, 2027, 2029, 2031, and 2033.

Survey costs vary, as have the densities of surveyed transects, but in general the cost is about \$175/kilometer surveyed. In 2001 in the western Mojave Desert, 870 transects or 1,392 kilometers were surveyed in the four DWMA. Given the rough cost estimate of \$175/kilometer, the distance sampling effort cost about \$245,000 in 2001 in the western Mojave

Desert. This cost was somewhat higher in 2002 when more kilometers were surveyed to obtain a sufficient sample size of at least 80 tortoises per DWMA, which was not attained in 2001.

Distance sampling is necessarily restricted to a regional level; it gives the density of tortoises and the trends in those densities over time for each DWMA surveyed. Therefore, after about five years of distance sampling a density of tortoises per DWMA would be available, but the upward, downward, or stable trends in those densities would require additional sampling. Even then, the regional distribution of tortoises in different portions of a given DWMA may not be determined from distance sampling, nor would the sampling effort be sensitive enough to indicate which management prescriptions are providing the most protection to tortoises; increases or decreases in tortoise abundance may not be explained by the sampling effort. As such, it is necessary to implement monitoring efforts that track the success and failures of management prescriptions implemented as part of the Plan, which follow.

Regional Responses of Tortoises to Implemented Conservation Measures: It is important to fund continued studies at specified intervals on pertinent BLM permanent study plots, including Kramer, Lucerne, Desert Tortoise Research Natural Area (DTNA) (2 or 3 plots), Fremont Valley, and Fremont Peak. In the past, a total of 60 person days was spent on each plot, conducting a capture (first 30 days) recapture (last 30 days) study that was intended, among other things, to determine the density of tortoises on that square mile (i.e., with the exception of one of the plots at the DTNA, the other plots are one square mile in size). Since distance sampling is intended to determine regional densities, it would be appropriate to modify the methodology for the study plots away from a density estimate, and rather focus on demographic, disease, human threats, and other associated data that have traditionally been collected.

It is important to replicate the study plots, perhaps on nearby, square kilometer plots (the tortoise Recovery Plan, Appendix A, presents one approach), so that statistical inferences can be drawn for a given region. Thus, additional, new study plots would be randomly situated throughout the region of interest. In the past, these plots have been surveyed at four-year intervals, although a new schedule needs to be considered. Each of the existing study plots is uniquely situated to gauge continued threats and efficacy of conservation measures implemented as part of the Plan, as described in the following sections.

Kramer Study Plot: This plot is located several miles west of the community of Silver Lakes, in the southern portion of the Fremont-Kramer DWMA, which is bounded to the north by Highway 58, to the east by the Mojave River, to the south by Shadow Mountain Road (actually several miles south of this road), and to the west by Highway 395. Unlike the northern and northwestern portions of this DWMA, there still appear to be relatively high numbers of tortoises in this area. The Kramer plot and surrounding areas are characterized by above-average tortoise sign counts collected since 1998. Known threats include ravens, poaching, off highway vehicle traffic (some of it likely from the Silver Lakes community), dumping, and dirt roads. Monitoring at this and adjacent plots should be structured to see if positive benefits are associated with the following conservation programs: raven management, increased law enforcement, route reductions, urban interface fencing or other control measures at Silver Lakes and fencing Highway 395.

Lucerne Study Plot: This plot is uniquely situated on the urbanizing interface with Lucerne Valley to the south and the Johnson Valley Open Area to the east; the Stoddard Valley Open Area is not too distant to the west. It occurs in one of three tortoise aggregations found in the Ord-Rodman DWMA. Documented threats include OHV impacts, cattle trespass, bisection by a major transmission line inside a BLM-designated utility corridor, raven predation, tortoise collection and vandalism, and feral dogs. Proactive management prescriptions given elsewhere in this Plan call for signing boundaries in this area, fencing portions of the cattle allotment to prevent cattle trespass, monitoring Camp Rock Road, raven management, route reductions, restrictions to development of new utilities, increased law enforcement, and education of Lucerne Valley residents with regards to resource conservation. The monitoring program on this and replicated plots in the region should focus on the efficacy of these and other conservation programs implemented by the Plan.

Desert Tortoise Research Natural Area: Several BLM permanent study plots are found at the DTNA, although like other plots, they have not been regularly funded since the early 1990's. These plots are unique in that they occur in a relatively protected, fenced area in which densities of more than 200 tortoises per square mile were documented in the 1970's and mid-1980s, but where present densities are substantially lower. Monitoring of this plot provides a unique opportunity to see if tortoises can naturally recolonize protected habitats. The fenced DTNA is surrounded by existing impacts that likely serve as "sinks" for tortoises that are relatively protected until they venture into adjacent, unfenced areas. Some of these uses include sheep grazing, intensive OHV use, agriculture and wind-blown dust from the west, indirect impacts associated with mining to the north, feral dog problems both inside and outside the DTNA, release of captive tortoises, raven predation, intentional vandalism of tortoises, and pet collection. Monitoring efforts should consider the efficacy of route reduction, enforcing California City's sheep grazing policy (i.e., prohibition of sheep grazing within city limits; J. Stewart, pers. comm. 2002), increased law enforcement, feral dog management plan, raven management, and education of visitors to the area.

Fremont Valley: This study plot is located in the Fremont Valley, which is bounded to the north by the El Paso Mountains, to the south by the Rand Mountains, to the east by Red Mountain, and to the west by Koehn Lake. It is very similar to the DTNA plots in terms of observable disturbances, except it does not occur within the relative protection of a fenced area. All the programs mentioned above for the DTNA are also intended to recover tortoises in the Fremont Valley. Unique threats include road kill along Garlock Road, the direct and indirect effects of spreading biosolids in the desert, noise, vibration, and mortality effects of the nearby railroad. Monitoring of the study plot and replicated plots in the Fremont Valley should test the efficacy of conservation measures in bolstering tortoise populations in the northwestern portion of the Fremont-Kramer DWMA.

Fremont Peak: Like DTNA and Fremont Valley, the Fremont Peak study plot has experienced recent declines in tortoise numbers, although fewer tortoises occurred when the BLM's study plots were first surveyed in the 1970's. Unlike all other study plots

mentioned above, the Fremont Peak plot is characterized as a saltbush scrub community (creosote bush scrub characterizes the other plots). Sheep grazing was removed from the area in 1991, although threats persist: natural recolonization of a population that has nearly been extirpated, raven and canid predation, effects of roads (several bisect the plot), and the indirect effects of Highway 395, which is located several miles to the west.

Conservation measures are recommended by this Plan that would minimize impacts associated with these and other threats. Additionally, it is recommended that the pilot headstarting program occur in the vicinity of this plot, so that the beneficial effects of that program may be indirectly gauged by reviving studies on this and replicated plots within the region.

Other Plots: The spatial location of the plots given above fairly well covers the Fremont-Kramer DWMA and southern portion of the Ord-Rodman DWMA, but does not adequately represent the Superior-Cronese or Pinto Mountain DWMAs. The Army's National Training Center at Fort Irwin, in conjunction with USGS, has established permanent study plots at the Goldstone Deep Space Tracking Station, in the Alvord Mountains, and elsewhere in the Superior-Cronese DWMA. Continuing studies on these and on newly established plots could collect valuable information. There are no permanent plots in the Pinto Mountains, although Joshua Tree National Park has such plots nearby. If the BLM desires to monitor the effects of OHV activities on tortoises, it would be appropriate to reinstate studies at the Johnson Valley study plot, the Stoddard Valley study plot should be relocated (i.e., it occurs on private lands), and new study plots should be established in other open areas (i.e., El Mirage and Spangler Hills open areas).

Region-Specific Monitoring Studies: Many proactive conservation measures have been recommended that can be tracked at the study plots given above, however it would be necessary to gauge the success and failures of specific conservation programs for their efficacy and modification through adaptive management. Some of these follow:

- *Highway Fencing:* Some of the desired effects of fencing highways that require monitoring include: (a) reduction of tortoise mortality; (b) tortoise recolonization of unoccupied habitats immediately adjacent to the highways or interstates; (c) reduction of other vertebrate mortality and its effects on raven predation, scavenging, and nesting within a mile of the fenced highway; (d) tortoise use of culverts to offset the fragmentation of the fenced highway; and (e) reduction of human impacts associated with the highway (such as decreased poaching, pet collection and dumping). Additionally, the fences must be monitored to cure breaches and ensure fence integrity.
- *Grazing Management:* The Plan proposes to remove sheep grazing from all DWMAs, which would affect areas south of Shadow Mountain Road in the southern portions of the Fremont-Kramer DWMA. Areas north of Shadow Mountain Road have not been grazed since 1991. The removal of sheep from this area should be followed by studies to determine the efficacy of this measure. There are also opportunities to study the effects of sheep removal on lands north of Kramer Junction, where sheep continue to graze west of Highway 395 but were removed in 1991 east of Highway 395.

Additionally, new management prescriptions would require modified grazing practices in the Ord Mountain, Harper Lake, and Cronese Lakes allotments. These include the exclusion of cattle from specific areas when dry ephemeral forage is below a threshold of 230 pounds/acre. This practice would require rest of certain pastures under these conditions, and would concurrently result in herding cattle onto other portions of the allotment. Another proposal is to strategically place waters so that cattle are concentrated in areas where the fewest tortoise-cattle impacts would occur. The effects of these and other management practices must be monitored to determine if the desired effects (i.e., decreased tortoise mortality and decreased habitat degradation) are being achieved.

- *Route Reductions:* Alternative A proposes the closure of a number of unpaved motorized vehicle routes, with the intent of reducing tortoise mortality and habitat degradation. There is widespread concern that reducing routes would lead to more habitat degradation along routes that are designated as “open.” Data should be collected to address the following: (a) Is there more or less cross country travel before or after reductions? (b) Is there more use (and vandalism) on private lands where route reductions are not occurring? (c) Are new routes being created to replace old ones? (d) Are visitors using closed routes? (e) Given these and other data, where are the best places to focus limited law enforcement resources? (f) Has poaching, illegal target shooting, intentional vandalism, etc. been curtailed or facilitated? (g) Are new concentrated human-use areas (i.e., campsites, staging areas, dump sites, etc.) forming along “open” routes? and ultimately, (h) Has the route network resulted in more or less tortoise mortality and/or habitat degradation?
- *Raven Management Plan:* The efficacy of this plan needs to be monitored to determine which, if any, management actions have resulted in fewer tortoise mortalities. The monitoring effort may be linked with others: Are ravens preying more heavily on tortoises after highway fences are installed and road-killed vertebrates are less available to ravens?
- *Off Highway Vehicle Fencing:* Alternative A proposes installation of new fences to counteract the effects of Johnson Valley and Stoddard Valley on tortoise populations in the Ord-Rodman DWMA. As with the recently installed fences around the El Mirage Open Area and along the Mojave-Randsburg Road, monitoring would be needed to cure intentional vandalism of the fences. Educational outreach would be a high priority at the time of fencing and thereafter. The desired effects are to reduce tortoise mortality and begin to repair degraded habitats (i.e., in the Cinnamon Hills and southern portions of the Ord-Rodman DWMA coinciding with northern Lucerne Valley), which should be monitored and adaptive management applied, as needed. Comparison of different fence and culvert designs would be needed.
- *Urban Interface Fencing Versus Educational Outreach:* Alternative A proposes that a working group be established by the Implementation Team to work with the Silver Lakes Association and others to minimize the OHV impacts associated with that community on the Fremont-Kramer DWMA, which occurs immediately to the west. Potential solutions

include installing a fence line along the western boundary of the community or developing an intensive educational program to minimize and eventually eliminate the impact. The efficacy of either of these approaches must be monitored and adaptive management applied.

- *Disease Monitoring:* There is no coordinated effort at this time to monitor diseases in the western Mojave Desert. Permanent study plots described above provide one good means of tracking diseases, but are not necessarily indicative of disease prevalence throughout the region. Line distance sampling provides even less opportunity to study diseases, as the surveys are carried out in the spring, are transitory in nature, and rarely afford the opportunity to clearly observe disease symptoms, which are most often expressed in and around the eyes or around the nostrils and mouth (i.e., most tortoises have pulled into their shells by the time they are weighed and measured as part of distance sampling). Alternative A relies on the Implementation Team adopting disease monitoring protocols as they are identified and endorsed by pertinent experts and, likely, the Management Oversight Group.

Miscellaneous Tracking Needs: Alternative A proposes a number of proactive programs that would require tracking that may be loosely described as monitoring. Some of these follow:

- *Plan-Authorized Versus Unauthorized Ground Disturbance:* Incidental take authorized by the Plan is necessarily attached to existing political infrastructure. For example, the Plan would authorize projects subject to discretionary permits but would not track projects subject to ministerial permits. It is important that authorized and unauthorized ground disturbance is tracked by the Plan to determine actual loss of habitat relative to the 1% Allowable Ground Disturbance. Agricultural development in DWMAs, which is not currently covered by the Plan, must be tracked to determine its relative impact, if any. It is generally understood that aerial photographs would be used, in conjunction with reports from participating jurisdictions, to track these forms of ground disturbance.
- *Plan-Authorized Take of Tortoises:* The Implementation Team is tasked with producing a standard data sheet and developing a tracking system to determine how many tortoises are accidentally killed or incidentally harassed as a result of Plan implementation. Such take is most likely in DWMAs, less so in most Survey Areas, and is not anticipated in tortoise No Survey Areas. These data should be used, among other things, to determine if the boundary lines for Survey versus No Survey Areas accurately portrayed where tortoises do and do not occur, respectively. It is expected that an annual review of this information would enable the Implementation Team, in conjunction with participating jurisdictions, to modify these boundary lines as needed. Keeping track of the actual take of animals would also be important to demonstrate to the regulatory agencies, particularly USFWS and CDFG, that impacts have been mitigated to the maximum extent practicable and fully mitigated, respectively.

- *Tracking of Law Enforcement Activities:* It is important that a feedback loop exist between law enforcement and the Implementation Team to identify problem areas, and in the spirit of adaptive management, to identify issue-specific solutions.

2.2.9 Adaptive Management

Adaptive management is an integrated method for addressing uncertainty in natural resource management. It is a structured process for learning by doing, examining strategies for meeting measurable biological goals and objectives, and then, if necessary, adjusting future conservation management actions according to what is learned. An adaptive management program is essential for species with information gaps and biological uncertainty involving a potentially significant risk to the species. Therefore, Alternative A proposes an adaptive management strategy that is intended to (1) establish a monitoring program that is able to detect the necessary information for strategy evaluation; and (2) incorporate feedback loops that link implementation and monitoring to appropriate changes in management.

The adaptive management measures given in Table 2-28 are designed to meet the biological goals and address the uncertainties within the conservation plans for each species.

Table 2-28
Adaptive Management

Species	Adaptive Management
Alkali mariposa lily	(AM-1) Designate additional conservation areas if surveys show substantial occurrences at isolated sites. (AM-2) Adjust boundaries of interim and permanent conservation areas near EAFB based on new survey information.
Barstow woolly sunflower	(AM-3) Adjust boundaries of Kramer and North Edwards Conservation areas based on new survey information (supplementary discussion below). (AM-4) Adjust boundaries of Coolgardie Mesa Conservation Areas based on new occurrences if appropriate.
Bats California leaf-nosed bat, long-legged myotis, spotted bat, pallid bat, Western mastiff bat, Townsend's big-eared bat	(AM-5) Gate mine entrances if new significant roosts are found. Withdraw from mineral entry on a case-by-case basis. (AM-6) If populations decline or new threats are discovered take corrective actions. Install bat houses in locations where appropriate. (AM-7) Provide case-by-case review of open routes within riparian and desert wash habitat adjacent to newly-detected significant roosts for Townsend's big-eared bat and California leaf-nosed bat. Take corrective action within the foraging habitat or establish a new route avoiding the habitat.
Bendire's thrasher	(AM-8) Adjust conservation area boundaries based on new surveys. (AM-9) Consider addition of a conservation area near Yucca Valley if surveys show presence of significant numbers of birds and undisturbed habitat.
Bighorn sheep	(AM-10) Define occupied dispersal corridors and then protect as open space. (AM-11) Withdraw newly detected lambing areas from mining.
Brown-crested flycatcher	(AM-12) Manage visitor use to riparian reserves, if necessary, with a goal of avoiding disturbance to nest sites and wetland habitat.

Species	Adaptive Management
	<p>(AM-13) Adjustments to grazing practices and Allotment Management Plans in the east Sierra canyons would be made as necessary based on the results of the rangeland health determinations.</p> <p>(AM-14) Cooperate with water agencies to provide additional water to Mojave River.</p>
Burrowing owl	(AM-15) Designate new conservation areas or adjust acquisition priorities based on new detections of owl nesting sites.
Carbonate endemic plants Cushenbury buckwheat, Cushenbury milkvetch, Cushenbury oxytheca, Parish’s daisy, Shockley’s rockcress	<p>(AM-16) Evaluate revegetation and restoration of mined properties. Adjust methodology as necessary.</p> <p>(AM-17) Fence specific occurrences of Parish’s daisy to protect from grazing if necessary.</p>
Charlotte’s phacelia	<p>(AM-18) If monitoring show damage from OHV use in the El Paso Mountains or from grazing in the east Sierra canyons, fence occurrences as necessary.</p> <p>(AM-13) Adjustments to grazing practices and Allotment Management Plans in the east Sierra canyons would be made as necessary based on the results of the rangeland health determinations.</p>
Crucifixion thorn	<p>(AM-20) For newly found locations: Review route designation and prohibit firewood cutting.</p> <p>(AM-21) If monitoring of “woodland” site indicates damage, construct fencing at strategic locations.</p>
Ferruginous hawk	(AM-22) Retrofit problem electrical towers or create safe perches at known wintering areas.
Flax-like monardella	(AM-23) Install site-specific fencing if new populations are threatened by grazing or by recreational trails or routes.
Golden eagle	<p>(AM-24) Identify threats, if any, to selected nest sites and take corrective actions.</p> <p>(AM-25) Retrofit problem electrical towers.</p> <p>(AM-26) Construct nest platforms on transmission line sites.</p>
Gray vireo	(AM-27) Initiate cowbird control if warranted.
Inyo California towhee	<p>(AM-28) Initiate delisting if Recovery Plan goals are met.</p> <p>(AM-29) Secure water rights.</p> <p>(AM-30) If monitoring indicates spread of invasive plants (<i>Phragmites</i> and tamarisk) over baseline conditions, remove the invasives from the springs. The Bruce Canyon sites are within Wilderness and work would be performed by hand.</p> <p>(AM-31) If monitoring at Peach Springs indicates continuing burro damage, install an enclosure fence. Because this site is within the Argus Mountains Wilderness, work must be performed by hand.</p>
Kelso Creek monkeyflower	<p>(AM-32) Adjust boundaries of conservation area.</p> <p>(AM-33) Change route designation as necessary to protect occupied habitat.</p> <p>(AM-34) Adjustments to grazing practices and Allotment Management Plans in Kelso Valley would be made as necessary based on the results of the rangeland health determinations.</p> <p>(AM-35) Pursue land purchase or exchange.</p>

Species	Adaptive Management
Lane Mountain milkvetch	(AM-36) Establish new conservation areas or adjust boundaries of ACEC if significant populations are found. Withdraw from mineral entry.
Least Bell's vireo	(AM-12) Manage visitor use to riparian reserves, if necessary, with a goal of avoiding disturbance to nest sites. (AM-14) Cooperate with water agencies to provide additional water to Mojave River. (AM-39) Eradicate invasive plants in occupied riparian habitat. (AM-27) Initiate cowbird control if warranted.
LeConte's thrasher	(AM-40) Using the new sightings and records compiled over time, define the densest populations and adjust management as necessary. Utilization of these data may better define specific areas where more intensive vehicle management (route designation, law enforcement) is needed and where vehicle restrictions could be relaxed.
Little San Bernardino Mountains gilia	(AM-41) Provide protection for new populations as appropriate. (AM-42) Remove the limitation on take on private land if: (1) New populations are found and protected <u>or</u> (2) The dry wash conservation measures are in place (conservation easements, setbacks, prohibitions on vehicle travel in occupied washes).
Long-eared owl	(AM-43) Protect newly discovered nest and communal roost sites.
Mojave monkeyflower	(AM-44) Adjust grazing prescriptions in eastern conservation area with seasonal or area-specific restrictions. (AM-45) Add to Brisbane Valley conservation area if significant new occurrences are found on public lands or if opportunity arises on two sections designated as "potential additions" or with Catellus land exchanges. Delete lands from eastern conservation area if surveys prove negative. (supplementary discussion below.) (AM-46) Sign or fence habitat adjacent to Stoddard Valley Open Area. Fence as necessary in Brisbane Valley (supplementary discussion below). (AM-47) Establishment of mitigation bank permitted (supplementary discussion below).
Mojave fringe-toed lizard	(AM-48) Prohibit vehicle traffic on conserved occupied habitat. (AM-49) Adjust boundaries as necessary to protect drainages and wind transport area. Extend conservation downwind if warranted.
Mojave River vole	(AM-12) Manage visitor use to riparian reserves, if necessary, with a goal of avoiding disturbance to nest sites and wetland habitat. (AM-77) Cooperate with water agencies to provide additional water to Mojave River. (AM-14) Cooperate with water agencies to provide additional water to Mojave River. (AM-39) Eradicate invasive riparian plants in occupied habitat.
Mojave tarplant	(AM-53) Adjust grazing prescriptions in Short Canyon and on Cross Mountain as necessary to meet regional public land health standards. (AM-54) Protect existing or new populations by providing barriers to vehicles or livestock. (AM-104) See supplementary discussion below.
Ninemile Canyon phacelia	(A-13) Adjustments to grazing practices and allotment management plans in the east Sierra canyons would be made as necessary based on the results of the rangeland health determinations.
Panamint alligator lizard	(AM-55) For newly found locations, review adequacy of conservation. (AM-56) Adjust vehicle management on a case-by-case basis. (AM-57) Enhance wetland habitat at springs if necessary.
Parish's phacelia	(AM-58) Protect new locations with fencing or signing at edge of playas.
Parish's alkali	(AM-59) If new locations are found, formulate protection plans. Measures could include

Species	Adaptive Management
grass	acquisition, securing water rights, or protection from grazing. (AM-101) See supplementary discussion below. (AM-102) See supplementary discussion below. (AM-103) See supplementary discussion below.
Parish's popcorn flower	(AM-59) If new locations are found, formulate protection plans. Measures could include acquisition, securing water rights, or protection from grazing. (AM-101) See supplementary discussion below. (AM-102) See supplementary discussion below. (AM-103) See supplementary discussion below.
Prairie falcon	(AM-61) Identify threats, if any, to selected nest sites and take corrective actions.
Red Rock Poppy	(AM-62) Provide barriers to vehicles or livestock if monitoring shows damage to occupied habitat. (AM-63) Establish conservation area if a significant new population is found on public land.
Red Rock tarplant	(AM-62) Provide barriers to vehicles or livestock if monitoring shows damage to occupied habitat. (AM-63) Establish conservation area if a significant new population is found on public land.
Reveal's buckwheat	(AM-62) Provide barriers to vehicles or livestock if monitoring shows damage to occupied habitat. (AM-54) Protect existing or new occurrences as necessary from grazing or vehicle damage to habitat.
Salt Springs checkerbloom	(AM-59) If new locations are found, formulate protection plans. Measures could include acquisition, securing water rights, or protection from grazing. (AM-101) See supplementary discussion below. (AM-102) See supplementary discussion below. (AM-103) See supplementary discussion below.
San Diego horned lizard	(AM-69) Fence conserved habitat, post signs. (AM-70) Acquire lands within Antelope Valley Significant Ecological Area.
Short-joint beavertail cactus	(AM-71) Salvage and relocate plants within urban development areas. (AM-72) Create smaller reserves in the western part of the range.
Southwestern pond turtle	(AM-62) Provide barriers to vehicles or livestock if monitoring shows damage to occupied habitat. (AM-74) If pond turtles are located in Kelso Creek and the Jawbone-Butterbredt ACEC, establish conservation areas on public lands.
Southwestern willow flycatcher	(AM-12) Manage visitor use to riparian reserves, if necessary, with a goal of avoiding disturbance to nest sites and wetland habitat. (AM-13, AM-34) Adjust grazing practices and Allotment Management Plans in Kelso Valley and the eastern Sierra canyons as necessary based on the results of the rangeland health determinations. (AM-14) Cooperate with water agencies to provide additional water to Mojave River. (AM-39) Eradicate invasive riparian plants in occupied habitat.
Summer tanager	(AM-12) Manage visitor use to riparian reserves, if necessary, with a goal of avoiding disturbance to nest sites and wetland habitat. (AM-14) Cooperate with water agencies to provide additional water to Mojave River. (AM-39) Eradicate invasive riparian plants in occupied habitat.
Vermillion	(AM-12) Manage visitor use to riparian reserves, if necessary, with a goal of avoiding

Species	Adaptive Management
flycatcher	disturbance to nest sites and wetland habitat. (AM-14) Cooperate with water agencies to provide additional water to Mojave River. Eradicate invasive riparian plants in occupied habitat. (AM-78) Eradicate invasive riparian plants in occupied habitat.
Western snowy plover	(AM-84) Close playa edges to vehicular traffic in spring if nest sites are located. Provide temporary fencing of nest sites if warranted.
Western yellow-billed cuckoo	(AM-12) Manage visitor use to riparian reserves, if necessary, with a goal of avoiding disturbance to nest sites and wetland habitat. (AM-13) Adjust grazing practices and Allotment Management Plans in the eastern Sierra canyons as necessary based on the results of the rangeland health determinations. (AM-14) Cooperate with water agencies to provide additional water to Mojave River. (AM-39) Eradicate invasive riparian plants in potential or occupied habitat.
White-margined beartongue	(AM-89) Fence populations along utility corridors if monitoring shows damage.
Yellow-breasted chat	(AM-12) Manage visitor use to riparian reserves, if necessary, with a goal of avoiding disturbance to nest sites and wetland habitat. (AM-13) Adjust grazing practices and Allotment Management Plans in the eastern Sierra canyons as necessary based on the results of the rangeland health determinations. (AM-14) Cooperate with water agencies to provide additional water to Mojave River. (AM-39) Eradicate invasive riparian plants in occupied habitat. (AM-27) Initiate cowbird control if warranted.
Yellow-eared pocket mouse	(AM-13, AM-34) Adjust grazing practices and Allotment Management Plans in the east Sierra canyons and Kelso Valley as necessary based on the results of the rangeland health determinations. (AM-96) Prioritize acquisition lands based on new location data.
Yellow warbler	(AM-12) Manage visitor use to riparian reserves, if necessary, with a goal of avoiding disturbance to nest sites and wetland habitat. (AM-13) Adjust grazing practices and Allotment Management Plans in the eastern Sierra canyons as necessary based on the results of the rangeland health determinations. (AM-14) Cooperate with water agencies to provide additional water to Mojave River. (AM-39) Eradicate invasive riparian plants in occupied habitat. (AM-27) Initiate cowbird control if warranted.

2.2.9.1 Supplementary Discussion

West Mojave Endemic Plants: (Charlotte’s phacelia, desert cymopterus, Little San Bernardino Mountains gilia, Mojave tarplant, Ninemile Canyon phacelia, Parish’s phacelia, Red Rock poppy, Red Rock tarplant and white margined beartongue). The 50 acre limitation on incidental take of West Mojave endemic plant species will be re-evaluated and adjusted as necessary every five years based on new information and monitoring.

Barstow Woolly Sunflower Prescription AM-3: Designation of the North Edwards Conservation Area boundary is tentative, and boundary adjustments may occur based on new information. Adaptive management would include refining the boundaries to closely correspond to plant occurrences, and to reflect consolidation of public lands. Land exchanges between BLM

and private landowners are encouraged as an implementation tool to consolidate public lands within the conservation area. Acquisition of private lands or donation or purchase of conservation easements may result in the expansion of the conservation area.

Negative findings for Barstow woolly sunflower anywhere along the edges of the conservation areas could result in the reduction of the conservation area and adjustments to the boundaries. Adjustments, whether deletions or additions, should take place only at the edges until more is known of the specific habitat requirements of the species and a final boundary can be determined based on essential habitat features, such as slope, soil type, plant community, or pollinator distribution.

Bighorn Sheep Prescription AM-10: Based on the results of radiotelemetry, proven patterns of movement of bighorn between mountain ranges or between summer and winter ranges would emerge. These monitoring results may better define locations for conservation of habitat linkages. Acquisition areas for linkage protection would be modified based on new data. If monitoring identifies new lambing areas shown to be essential for long-term survival, BLM would withdraw those areas from mineral entry.

Mojave Monkeyflower Prescription AM-45: Boundary adjustments may occur based on new information. Adaptive management would include refining the boundaries to closely correspond to plant occurrences, and to reflect consolidation of public lands. Land exchanges between BLM and private landowners are encouraged as an implementation tool to consolidate public lands within the conservation areas. Acquisition of private lands or designation of additional BLM lands within the Brisbane Valley may result in the expansion of the core reserve north of the mining area. Sections 32 and 33 within T7N, R4W have been identified as potential additions to the conservation area. Additional purchase or exchange of private parcels in the Brisbane Valley and east of Daggett Ridge could increase the size of the western conservation area and the public ownership of the eastern conservation area.

Location of additional monkeyflower populations within the Mojave fishhook cactus ACEC could result in the designation of this area as an addition to the Brisbane Valley unit. Detection of additional substantial populations in the Newberry Mountains Wilderness or at Kane Springs might result in additions to the eastern conservation area. Detection of significant new areas of occurrence north of Barstow could result in the delineation of a new portion of the conservation area for Mojave monkeyflower within the Superior-Cronese DWMA.

Negative findings for Mojave monkeyflower anywhere along the edges of the conservation area could result in the reduction of the conservation designated area and adjustments to the boundaries. Adjustments, whether deletions or additions, should take place only at the edges until more is known of the specific habitat requirements of the species and a final boundary can be determined based on essential habitat features, such as slope, soil type, plant community, or pollinator distribution.

Mojave Monkeyflower Prescription AM-46: Within the mining area, establishment of a mitigation bank is permitted for individual operators or a cooperative effort covering the entire mining area. If surveys show suitable locations for conservation of monkeyflowers and addition

to the conservation area, incidental take would be allowed on the remaining occurrences, subject to approval of the wildlife agencies and the Implementation Team. Establishment of an approved mitigation banks for the mining area, or for individual operators, would eliminate the prescribed mitigation in that area (survey incentives and 2:1 mitigation).

Mojave Monkeyflower Prescription AM-47: If monitoring of OHV use near the boundary between the Stoddard Valley Open Area and the eastern conservation area determines adverse effects to the monkeyflowers, adaptive management might require posting or fencing of areas along Highway 247 to prevent vehicle intrusion into the conservation area. Monitoring of use in the Brisbane Valley would determine the need for fencing of all or parts of the conservation area.

2.2.9.2 Alkali Wetland Plants

(AM-101) Based on information from surveys and monitoring of designated sites, additional conservation areas may be designated on public lands or additional specific isolated wetlands may be considered for acquisition on private lands.

(AM-102) Additional species meeting the requirements for inclusion on the western Mojave Desert species list could be located at alkali wetland sites. These species, including black sedge and Hot Springs fimbriatilis and perhaps others, may be amended into the plan as covered species after conservation plans are formulated.

(AM-103) The privately owned portions of the palm oasis and alkali wetland at the Oasis of Mara adjacent to the Joshua Tree National Park headquarters buildings could be considered for acquisition by the National Park Service, depending on the feasibility and results of botanical surveys of target species.

2.2.9.3 Mojave Tarplant

(AM-104) Baseline surveys will determine an estimate of numbers and acreage of occupied habitat for the known populations within the West Mojave.

If grazing is found to be detrimental to the population at Cross Mountain, fencing around the population on public land may be needed.

If significant new populations were discovered on public lands, BLM would evaluate the land uses in that area and adjust management accordingly. The primary protective measures are expected to be exclusion of grazing from the plant occurrences, adjustments to route designation, and avoidance by utilities or other right-of-way projects. The new area could be designated as a Mojave tarplant Conservation Area, where additional compensation for development projects is required, or as a new ACEC if conditions warrant.

If the plants were re-discovered near the Mojave Narrows dam, protective measures would be under the direction of the Department of the Army, Corps of Engineers. Because

unregulated off-road travel is the primary threat in this area, additional enforcement is the expected means of management. Fencing of occurrences may be necessary in some places.

If significant new populations were found on private land, the landowners would not be liable for additional monetary or land compensation because they would be covered under the state and federal assurances for 2081 permits and HCPs (i.e. “no surprises”). However, the level of take could not exceed the level of conservation. If private land conservation is judged to be necessary at new locations, the site(s) would be given a high rating on the acquisition priority list maintained by the Implementation Team.

2.2.9.4 Raptors

(AM-105) The following discussions explains raptor adaptive management prescription AM-24 in more detail:

- *Electrocution hazards:* If monitoring reveals “problem poles”, existing electrical transmission and distribution lines can be retrofitted to meet current design standards that prevent electrocution. Identified regular perch poles adjacent to important wintering areas for ferruginous hawk in the Mojave Valley and Antelope Valley can be retrofitted to provide safe sites even if no electrocution problem is evident. Established perches of golden eagles on unsafe poles can be retrofitted.
- *Mining at nest sites:* Mines that cannot avoid occupied eagle and falcon nest sites would provide relocated nests in cooperation with the wildlife agencies. Removal or relocation of golden eagle nests must be in compliance with the Bald and Golden Eagle Protection Act (P. L. 95-616).
- *New nest sites at risk:* The adaptive management conservation program would apply to any new nest sites located over time and to communal roosts of long-eared owl and communal migratory roosts of Swainson’s hawk. Potential sources of disturbance would be evaluated on a site-specific basis and management measures formulated to reduce or eliminate the disturbance during the nesting and roosting seasons.
- *Nests on transmission towers:* Where golden eagles have existing nests on transmission lines, use the results of monitoring to determine if these sites are productive or detrimental to nest success. If detrimental, construct nest platforms using state-of-the art design to protect nesting eagles from the elements and from electrocution and collision with conductors.

2.3 ALTERNATIVE B: BLM ONLY

2.3.1 Overview

All aspects of this alternative’s conservation strategy would be as described for Alternative A, except as specifically noted below (see foldout Map 2-15). These include

Alternative A's motorized vehicle access network, livestock grazing program and education. Multiple use class changes proposed by Alternative A would apply to this alternative except for the following: 1) Two parcels of BLM land within the North Edwards Conservation Area would not be removed from the LTA disposal zone and reclassified from U to M and 2) Several scattered parcels of BLM land in the San Gabriel Mountains foothills and within the Los Angeles County SEAs (Table 2-4) would not be removed from the LTA disposal zone and reclassified from U to M.

All aspects of this alternative's conservation strategy would be as described for Alternative A, except as specifically noted below (see Map 2-15). These include Alternative A's motorized vehicle access network, livestock grazing program and education outreach. All multiple use class changes proposed by Alternative A would apply to this alternative as well.

2.3.2 Habitat Conservation Area

(AB-1) The tortoise conservation area would consist of 1.0 million acres of public lands (only). Four DWMA's would be established: Fremont-Kramer, Superior-Cronese, Ord-Rodman and Pinto Mountains. The exterior boundaries of the DWMA's would correspond to those proposed by Alternative A, but would consist only of the 1.0 million acres of public lands within the outer boundaries (425,000 acres of private lands within the outer boundary would not be affected by the designation). The DWMA's would be designated as an ACEC.

(AB-2) A Mojave ground squirrel conservation area would be designated, consisting of the 1.3 million acres of public lands within the outer boundary proposed by Alternative A. The 363,000 acres of private lands would not be affected by the designation. The MGS conservation area would be designated as a BLM wildlife habitat management area.

(AB-3) Eleven other conservation areas composed of BLM lands (only) would be established, and designated as ACECs. Public land prescriptions (only) and external boundary lines proposed for Alternative A would apply. The ten conservation areas would include the following ACECs: (1) Barstow Woolly Sunflower; (2) Bendire's Thrasher; (3) Carbonate Endemic Plants; (4) Coolgardie Mesa; (5) Kelso Creek Monkeyflower; (6) West Paradise; (7) Middle Knob; (8) Mojave Monkeyflower; (9) Mojave Fringe-toed Lizard; (10) Parish's Phacelia; and (11) Pisgah Crater. The Mojave fringe-toed lizard conservation area would be limited to three units (Dale Lake, Mojave River and Pisgah Crater); Saddleback Butte/Big Rock Creek would not be part of this conservation area.

Conservation areas would not be established at either Big Rock Creek for several species or North Edwards for the desert cymopterus and Barstow woolly sunflower. The Alkali Mariposa Lily Conservation Area would not be designated. No biological transition areas would be established, nor would special review areas be designated. No tortoise relocation areas would be delineated. No wildlife movement linkages would be established.

2.3.3 Compensation Framework

(AB-5) Compensation for disturbance of public lands within DWMA's would be required

at a 5:1 ratio within desert tortoise habitat. Equivalent funds may be directed toward habitat enhancement or rehabilitation (only option for CMAGR). All compensation is to be directed to the DWMA where the disturbance occurs. Compensation is required for most authorized uses. There would be no new compensation program for disturbance of lands outside of the DWMA, such as lands within the northwestern portion of the MGS Conservation Area or within other newly established ACECs.

(AB-6) Limit cumulative new surface disturbance on lands administered by federal agencies within any DWMA to 1 percent of the federal portion of the DWMA. The amount that may be disturbed is proportional to the holding of the administering agency. The habitat credit component of Alternative A would not apply; however, existing BLM restoration programs would continue, including tamarisk removal and habitat restoration at Afton Canyon and Harper Lake, and intensive rehabilitation in recently burned areas, as in the footprint of the Willow Fire.

2.3.4 Incidental Take Permits

No regional habitat conservation plan would be adopted and implemented. On private lands, compliance with both FESA and CESA would be determined on a case-by-case basis, as at present. Separate incidental take permits would need to be obtained for each project. Protection for non-listed species on private lands would be determined by the CEQA review conducted for each project. “No surprises” assurances would not be provided.

2.3.5 Species Conservation Measures

Desert Tortoise: Tortoise Survey and No Survey areas would not be established. Presence-absence surveys and clearance surveys would be required on all public lands. Standard handling and disposition guidelines would be established for BLM lands only. Elsewhere, such guidelines would be determined on a case-by-case basis.

Tortoise prescriptions different from those proposed by Alternative A would include the following:

- (AB-7) Highway maintenance seasonal restrictions, roadbed and berm requirements, and preclusion of the use of invasive weeds for landscaping would apply only to portions of roads on public lands.
- (AB-8) No feral dog management program would be undertaken.
- (AB-9) Increased law enforcement within DWMA's would be limited to public lands.
- (AB-10) Project proponents could utilize level 1 “Best Management Practices” on BLM lands within DWMA's, and level 2 BMPs elsewhere. Pre-approved and programmatic level 1 and level 2 BMPs would not be available to proponents of projects located on private lands.
- (AB-11) Raven predation management would focus on public lands. The program would not address the modification of landfill and transfer station operations to reduce availability of waste to ravens, nor would landfills be precluded from locating on private lands within five miles of DWMA's.

Mohave Ground Squirrel: Los Angeles County’s significant ecological areas would not be a component of the MGS conservation strategy. CDFG would continue to require trapping. CDFG’s existing fee program would continue.

Other Species: A burrowing owl education program would not be implemented. Raptor-safe power lines would be required for BLM-approved powerlines only. Long-eared owl and gray vireo habitat at Big Rock Creek would not be acquired. No program would be implemented to conserve alkali wetland plants. Conservation of desert cymopterus and triple-ribbed milkvetch would rely on an avoidance requirement rather than the protection of habitat within conservation areas.

The following species could not meet all goals and objectives set for the habitat conservation plan alternatives: alkali mariposa lily, Barstow woolly sunflower, brown-crested flycatcher, burrowing owl, desert cymopterus, gray vireo, least Bell’s vireo, Little San Bernardino Mountains gilia, long-eared owl, Mojave fringe-toed lizard, Mojave River vole, Parish’s alkali grass, Parish’s popcorn flower, Salt Springs checkerbloom, San Diego horned lizard, short-joint beavertail cactus, southwestern willow flycatcher, summer tanager, vermilion flycatcher, Western yellow-billed cuckoo, yellow-breasted chat, and yellow warbler. In addition, the multi-agency conservation strategy incorporating protection on both public and private lands within reserves would be diminished for DWMA’s and conservation areas with mixed land ownership. This would affect most species addressed by the plan.

2.3.6 Monitoring, Adaptive Management and Implementation

Implementation of this alternative would rely upon funds appropriated to BLM by Congress, and MOG mitigation fees. The implementing authority, citizens advisory group and scientific advisory board suggested for Alternative A would not be established. Future amendment of the conservation strategy would be available through amendment of the BLM’s CDCA Plan only.

2.4 ALTERNATIVE C: TORTOISE RECOVERY PLAN

2.4.1 Overview

The Desert Tortoise (Mojave Population) Recovery Plan (Tortoise Recovery Plan) was adopted in 1994. Prepared for USFWS by a “Desert Tortoise Recovery Team,” it presented a set of actions that the recovery team concluded were needed to recover tortoise populations. Although its recommendations are not binding on the agencies with jurisdictions over lands within desert tortoise habitat, the Recovery Plan’s conservation strategy has served as a starting point in the process of developing conservation strategies for the West Mojave and other regional plans.

The USFWS is currently initiating a two-step review of the Recovery Plan. During 2003, a team assembled by USFWS will conduct an assessment of the plan in light of new information collected since 1994. If the assessment indicates that a revision of the Recovery Plan is warranted, that revision could occur during 2004.

The 1994 Tortoise Recovery Plan’s strategy was relatively general (for example, the locations of recommended DWMA’s were identified on regional maps but precise boundary identification was left to future planning). The interagency collaborative planning process that led to Alternative A used the Recovery Plan as a starting point, adding details and modifications based upon more recent data. Accordingly, Alternative C uses many of the more specific proposals of Alternative A to “flesh out” many of the relatively more general recommendations of the Tortoise Recovery Plan.

Alternative C combines the tortoise conservation strategy suggested by the Tortoise Recovery Plan with the conservation program developed by Alternative A for the Mohave ground squirrel and other sensitive plants and animals. All aspects of this alternative’s conservation strategy would be as described for Alternative A, except as specifically described below. These include Alternative A’s motorized vehicle access network and education outreach program. The West Mojave Plan would be a habitat conservation plan, and incidental take permits would be sought from CDFG and USFWS by local jurisdictions (see foldout Map 2-16).

2.4.2 Habitat Conservation Area

The HCA would consist of all lands proposed for HCA status by Alternative A, and include lands designated as tortoise critical habitat but excluded from Alternative A’s DWMA’s. Thus the HCA would include the four tortoise DWMA’s, an MGS conservation area, and fourteen conservation areas established to conserve other sensitive plants, animals and their habitats. The Ord-Rodman DWMA would be designated as an ecological reserve and a research natural area.

No biological transition areas would be established, nor would tortoise special review areas be designated. A special review area for the Little San Bernardino Mountains gilia would be designated, as in Alternative A.

BLM multiple use class changes would be as described for Alternative A, except changes to the disposal zone of the LTA from Unclassified to M would apply to the larger DWMA boundaries. There would be no additional class changes under this alternative.

2.4.3 Compensation Framework and Incidental Take Permits

The West Mojave Plan would serve as a habitat conservation plan, and incidental take permits would be sought from CDFG and USFWS by local jurisdictions. All compensation, fee and implementation structures proposed by Alternative A apply to this alternative, except as expressly noted in the discussion of species conservation measures (section 2.4.4, below).

2.4.4 Species Conservation Measures

Measures proposed for species other than the desert tortoise would be as described by Alternative A, including utility construction and maintenance measures for tortoises and the education program. Tortoise management actions under Alternative C follow.

2.4.4.1 Desert Tortoise Take-Avoidance Measures

The following desert tortoise take-avoidance measures would be adopted.

- (AC-1) Surface disturbance within DWMA's would be restored to pre-disturbance conditions (defined as the topography, soils, and native vegetation that exist in adjacent undisturbed or relatively undisturbed areas), closing access to non-designated vehicle routes and including restoring non-designated roadbeds to their pre-disturbance state.
- (AC-2) All competitive and organized events (including dual sport) would be prohibited within DWMA's.
- (AC-3) Parking and camping would be allowed within DWMA's in designated areas. Outside of DWMA's, parking and camping would be allowed within 300 feet from the centerline of motorized vehicle routes designated open.
- (AC-4) Tortoise DWMA's may provide forms of recreation compatible with tortoise recovery, including minimum impact recreation (e.g. hiking, equestrian uses, birdwatching, and photography).
- (AC-5) Between February and September, no shooting would be allowed in DWMA's.
- (AC-6) Mining would be allowed on a case by case basis, provided cumulative impacts do not significantly impact tortoise habitats or populations, and effects would be mitigated during operation and land restored to pre-disturbance condition. Requirements that surface disturbance within DWMA's be restored to pre-disturbance conditions would apply to open pit mines and hard rock quarries. Mineral withdrawals identified by

Alternative A (Afton Canyon, acquired lands within the Carbonate Endemic Plants ACEC, Coolgardie Mesa and West Paradise Conservation Areas, and Rand Mountains) would be pursued..

- (AC-7) Vandalism should be halted, as should the collection and release of captive tortoises. Regular and frequent patrols by law enforcement personnel are essential
- (AC-8) Emergency measures would be developed to control unleashed dogs and dog packs.
- (AC-9) Initiate cleanup of surface toxic chemicals and unexploded ordinance. Identify and clean up unauthorized dumps in DWMA. Reduce or eliminate use of authorized landfills and sewage ponds in and near DWMA by predators of the desert tortoise (e.g., ravens and coyotes). Allow no new landfills or sewage ponds within DWMA.

2.4.4.2 Desert Tortoise Survey and Disposition Protocols

The following management prescriptions would be adopted:

- (AC-10) Existing survey, handling and disposition requirements would continue. Presence-absence surveys and clearance surveys would be required in all areas prior to any new ground-disturbing activities.
- (AC-11) “No Survey” areas would not be delineated.
- (AC-12) A drop-off site would be established for unwanted captive tortoises at BLM’s Barstow Way Station.
- (AC-13) Programs would be developed to promote use of unwanted desert tortoises for research and educational purposes.

2.4.4.3 Proactive Tortoise Management Programs

Desert Tortoise Fencing and Signing: (AC-14) Fence or otherwise establish effective barriers to tortoises along heavily traveled roads. Install culverts that allow underpass of tortoises to alleviate habitat fragmentation. Construct desert tortoise barrier fencing and underpasses along Highway 395, parts of Highway 58, the Randsburg-Mojave Road, the Red Rock - Randsburg Road, the Red Rock - Garlock Road, the railroad north and adjacent to Highway 58, Highway 247, Interstate 15, Fort Irwin Road, Manix Trail, Superior Lake [Copper City] Road, and the northern boundary of the Superior-Cronese DWMA. Construct highway underpasses along Fort Irwin Road to allow desert tortoise movement and to facilitate genetic exchange.

(AC-15) Sign or fence DWMA boundaries adjacent to communities and settlements such as Barstow, the small settlements north of Barstow, Kramer Junction, California City, Cantil, Galileo Hill, Randsburg, Johannesburg, Atolia and Helendale, and other areas with conflicting uses.

(AC-16) Fence the periphery of the Superior-Cronese DWMA as needed to enforce regulations and protect desert tortoises from human impacts. Along the boundary with the Fremont-Kramer DWMA, a double row of desert tortoise barrier fencing may be necessary to prevent the spread of URTD into the Superior-Cronese DWMA.

(AC-17) Construct and maintain special fencing to protect desert tortoises from recreational vehicle use in the Johnson Valley Open Area and surrounding lands.

(AC-18) Sign boundaries of the Ord-Rodman DWMA in the vicinity of Barstow, Newberry Springs, Lucerne, Landers and Lucerne Valley.

Land Acquisition: (AC-19) The goal of the plan would be to acquire all private lands in DWMA. Maintenance of the local tax base would not be a goal of the DWMA land acquisition program. Outside of DWMA, acquisition priorities set by Alternative A would be followed; land acquisition would be from willing sellers only, and the acquisition program would seek to maintain the stability of the local tax base.

Raven Management: (AC-20) Reduce populations of the common raven to lessen predation on juvenile tortoises and ensure recruitment of juveniles into the subadult and adult populations.

Tortoise Translocation: (AC-21) Desert tortoises from adjacent lands should be experimentally translocated into DWMA, such as from the El Mirage Open Area into the Fremont-Kramer DWMA and from the Johnson and Stoddard Valley Open Areas into the Ord-Rodman DWMA, to increase the density of desert tortoises and salvage breeding stock.

Headstarting: (AC-22) Initiate a semi-wild breeding program to rebuild and restore tortoise populations. The DTNA would be an ideal place to begin this program.

Administration: (AC-23) Each DWMA may require a reserve manager, additional staff, and law enforcement personnel; in some cases, the same staff may manage adjacent DWMA. The formation of local advisory committees is encouraged. As funds become available, each DWMA or group of DWMA should have an associated visitor center or set of interpretive sites and panels.

2.4.5 Public Land Livestock Grazing Program

(AC-24) The Ord-Rodman DWMA would be designated as a cattle grazing experimental management zone. Grazing management in this area would be as described for Alternative A. Elsewhere, livestock grazing would not be permitted within DWMA.

2.4.6 Public Land Motorized Vehicle Access Network

This alternative is based on the assumption that tortoises thrive best where density of access routes is low, traffic is low and human access is limited. To achieve this:

- (AC-25) Alternative A's motorized vehicle access network would be adopted and implemented. Routes not designated open would be restored to their pre-disturbance condition. Limited speed travel would be allowed in tortoise DWMA's on designated signed roads. Implement closure of DWMA's to vehicular access with the exception of designated routes, including Federal, State and County maintained vehicle routes.
- (AC-26) Restrict the establishment of new roads in DWMA's.
- (AC-27) Implement emergency closures of dirt roads and routes as needed to reduce human access and disturbance in areas where human-caused mortality of tortoises is a problem.

2.4.7 Education Program

(AC-28) Construct a visitor education center at the DTNA that would include facilities for research as well as a drop-off site for unwanted captive desert tortoises. Develop programs to promote use of unwanted captives for research and educational purposes.

2.4.8 Monitoring, Adaptive Management and Implementation

Establish a research program and focus research on the following topics:

- **Fremont-Kramer DWMA:** (AC-29) Desert tortoise diseases, including URTD; toxicosis; shell lesions; general health; nutritional status; food preferences and requirements; water balance and energy flow; predation by feral dogs and other mammalian predators; raven predation; habitat restoration; the effectiveness of desert tortoise-proof fencing and culverts in eliminating road kills; interactions of desert tortoises with urban barrier fencing; protective barriers between urban development and open desert; and effects of mining, domestic sheep and cattle grazing, noise/vibrations, and cumulative impacts on mortality and survivorship.
- **Superior-Cronese DWMA:** (AC-30) Epidemiology of URTD and other diseases; physiological, ecological, nutritional, and behavioral requirements of hatchling and juvenile desert tortoises; nutritional qualities of preferred food plants; habitat restoration; and characteristics of undisturbed desert tortoise habitat. Continue using the latest medical techniques to assess the health of desert tortoises. Conduct epidemiological surveys to determine the distribution and frequency of desert tortoises with URTD and other diseases. These surveys would be used to help determine if fencing is necessary within the DWMA or between the Fremont-Kramer DWMA and the Superior-Cronese DWMA.
- **Ord-Rodman DWMA:** (AC-31) Disease epidemiology; the effects of ravens and other predators on desert tortoise populations; and the effects of hunting of upland birds, big game, and furbearers on desert tortoises and their habitat.

2.5 ALTERNATIVE D: ENHANCED ECOSYSTEM PROTECTION

2.5.1 Overview

Alternative D's conservation strategy grew out of discussions among the participating agencies and members of the public during EIR/S scoping and the development of Alternative A. Many suggestions were offered that called for placing a very high priority on the conservation of natural communities and ecosystems, even if adoption of these recommendations would limit human access to and multiple use of the western Mojave Desert. Alternative D presents a conservation strategy that incorporates many of these suggestions (see foldout Map 2-17; see also BLM multiple use class Map 2-18 (on attached CD Rom)).

All aspects of this alternative's conservation strategy would be as described for Alternative A, except as specifically described below. These include Alternative A's motorized vehicle access network and education outreach.

2.5.2 Habitat Conservation Area

(AD-1) The Fremont – Kramer DWMA would be reconfigured to encompass existing critical habitat between Shadow Mountain Road and Edwards Air Force Base west of the El Mirage Open Area. This DWMA would also be expanded northwest of Kramer Junction so that its boundary followed the boundary between Kern and San Bernardino Counties.

(AD-2) The Mohave ground squirrel conservation area would be the same as Alternative A. The MGS conservation area would be designated by the BLM as an ACEC.

(AD-3) All BLM multiple use class M lands within the HCA would be changed to class L. All lands removed from the LTA disposal zone within the HCA would be reclassified from U to L. This would apply to the DWMA's, the North Edwards conservation area and the MGS conservation area, but would not apply to scattered BLM parcels in the San Gabriel Mountains foothills and within the Los Angeles County SEAs (Table 2-4).

2.5.3 Compensation Framework

(AD-4) The mitigation fee would be based on a compensation ratio that would include a conservation bonus value for projects located in two or more overlapping conservation areas. In the event that a project was to be located on lands within two overlapping conservation areas (such as portion of the Fremont – Kramer DWMA and the MGS Conservation Area, or the Ord-Rodman DWMA and the Mojave Monkeyflower Conservation area), the compensation ratio, normally 5:1 in the HCA, would be raised to 6:1. In the event that a project was located on lands within three overlapping conservation areas (such as lands within the Barstow Woolly Sunflower Conservation Area, the MGS Conservation Area, and the Fremont-Kramer DWMA), the compensation ratio would be raised to 7:1. These additive compensation ratio areas are depicted

on foldout Map 2-17. There are no lands within more than three overlapping conservation areas; thus, the 7:1 ratio would be the planning area's highest.

(AD-5) The West Mojave Plan would not include a habitat credit component. A program to restore habitats within the HCA would be developed by the Implementation Team.

2.5.4 Species Conservation Measures

Desert Tortoise Take-Avoidance Measures: (AD-6) Within DWMA's, motorized vehicle stopping and parking would be allowed within 15 feet of the centerline of the designated route. Camping would be allowed only in designated areas. Where numerous scattered campsites occur in a particular area, BLM would consolidate them into a designated BLM campground. Educational materials could be disseminated from these established BLM campgrounds.

(AD-7) On public lands within DWMA's, general shooting other than hunting would not be allowed. No target shooting would be permitted.

(AD-8) New ground disturbance caused by mining exploration activities would have to be restored (rather than reclaimed). New linear utility projects would be required to include erosion control protections and re-vegetation in all areas. Level 1 BMPs would be applied in both DWMA's and elsewhere within the tortoise survey area (rather than applying Level 2 BMPs outside of DWMA's).

(AD-9) On public lands within tortoise DWMA's, the following restrictions would apply:

- No new agriculture, particularly biosolids fields in DWMA's
- No new development of nuclear and fossil fuel power plants in DWMA's
- All new routes in DWMA's would be considered in the context of Class L guidelines
- All recreational events would be restricted to "approved" routes of travel (not "existing" routes, as given for Class M)
- No pit, start, finish, or spectator areas allowed in DWMA's
- No competitive events would be allowed in DWMA's
- No dual-sport events would be allowed in DWMA's

(AD-10) Outside of DWMA's, current fire management practices would continue. To the degree possible and only if consistent with ensuring public safety, the use of heavy equipment and excessive ground disturbance within the HCA would be avoided. The brochure developed for filming activities (or a similar one) would be circulated to fire fighting personnel to identify DWMA's and areas having higher than average tortoise densities. In addition, except where necessary to address threats to developed property or human safety, the following guidelines for fire management would apply within tortoise DWMA's:

- In identified higher density areas, all fire fighting activities would be restricted to approved routes of travel; use of “closed” routes that have not been rehabilitated would be allowed (use of rehabilitated routes would not be allowed)
- No new roads would be created in areas having higher than average tortoise densities; approved routes may be widened as needed to serve as fire-breaks
- In general, fires in higher density areas would be allowed to burn, contained within existing roads, and result in as little habitat disturbance as feasible
- All burn areas in DWMA would be quarantined from future use until which time a reduced network is identified to allow for public access, which would curtail additional habitat degradation and promote natural rehabilitation; the BLM, working with the Implementation Team, would determine when approved routes of travel would again be available for full use

Desert Tortoise Proactive Management Programs: (AD-11) In addition to the fencing proposals suggested by Alternative A, the following additional measures would be taken.

- The Mojave-Randsburg Road should be fenced from Highway 395 to the western boundary of the Fremont-Kramer DWMA.
- If average daily traffic warrants in the future, the Shadow Mountain Road should be fenced.
- Underpasses beneath the Fort Irwin Road should be installed.
- Fencing should be installed along the north side of the Pinto DWMA, using chain link if needed to prevent urban encroachment.
- The periphery of the Superior-Cronese DWMA should be fenced, as needed.
- At the time it is paved, a tortoise barrier fence and appropriately spaced culverts would be installed along both sides of Helendale Road between Silver Lakes and Highway 58, to prevent road from fragmenting high density tortoise areas habitat.

(AD-12) In many instances, the location of major improvement projects for highways listed above may be known years in advance of construction. Highways may be fenced years in advance of construction, and treated as a banked mitigation measure, worth an amount of credit to be determined in consultation with the Implementation Team. The cost could be calculated and recorded, and that amount “banked” (deducted from) against the cost of future mitigation, such as cost of land acquisition.

(AD-13) The long-term land acquisition goal would be to acquire all private lands within the DWMA, from willing sellers.

(AD-14) The funding and implementation priority of the tortoise disease management program suggested by Alternative A would be raised from low to high.

(AD-15) Experimental management zones would be established in the Brisbane Valley and Copper Mountain Mesa to study the effects of sheep grazing, off highway vehicle use and urbanization on tortoises.

(AD-16) Tortoise headstarting should be pursued as discussed in Alternative A, except the effort should not begin with a pilot program. Rather, at least five sites should be established within three years of plan adoption.

Desert Tortoise Translocation: (AD-17) Except as described in the Tortoise Disposition Protocol, do not mass-translocate tortoises into DWMA's. Mass translocation may serve as an adaptive management tool if clear scientific-based protocols are developed and endorsed by appropriate entities (such as the MOG).

(AD-18) Brisbane Valley and public lands north of Joshua Tree National Park would serve as potential translocation sites for unexpectedly large numbers of wild tortoises that are removed from construction sites authorized by the West Mojave Plan.

(AD-19) Allow translocation or other rescue of tortoises from military maneuver areas. To this end, complete a pilot translocation study to determine the efficacy of relocating healthy desert tortoises. Use results of the pilot translocation study to determine the best placement and use of removed tortoises. Some goals of the pilot study include:

- Determine the efficacy of translocation;
- Assess translocation as a possible tool for tortoise recovery;
- Use any animals tested positive for upper respiratory tract disease to further our understanding of the disease; and
- Possibly use animals to study the efficacy of the head-starting program.

Translocation site(s) (i) should be fenced; (ii) have conflicting land uses eliminated; (iii) occur on public lands even if that means purchasing private lands; (iv) be isolated from and not contiguous to reserve areas; and (v) receive only healthy tortoises that test negative for upper respiratory tract disease.

Mohave Ground Squirrel: (AD-20) Programmatic surveys in potential habitat areas would be conducted to develop a better MGS range map. Areas to be surveyed would include Brisbane Valley and the Ord-Rodman DWMA (especially its southern portion). If "source areas" for MGS were to be identified in the future, site-specific mineral withdrawals of these areas would be considered.

Other Species: (AD-21) Grazing exclosures would be established to monitor habitat of the yellow-eared pocket mouse, Ninemile Canyon phacelia and Charlotte's phacelia in the eastern Sierra canyons.

(AD-22) Burrowing owl surveys would be required of all project sites.

(AD-23) To protect the gray vireo, the San Diego horned lizard and the short-joint beavertail cactus, flood control improvements would be restricted in washes that drain the San Gabriel and San Bernardino Mountains. In Los Angeles County, these include Grandview Canyon, Boneyard Canyon, Banneret Canyon, La Montaine Creek, Puzzle Canyon, Jesus

Canyon, and Mescal Creek. In San Bernardino County, they include Sheep Creek, one unnamed tributary west of Sheep Creek, Horse Canyon, Manzanita Wash, Oro Grande Wash and twelve unnamed tributaries between the Los Angeles County line and Interstate 15, and Telephone Canyon and an additional eleven unnamed tributaries east of Interstate 15 to the Mojave River. A one hundred foot buffer would be established.

(AD-24) All lands within the Carbonate Endemic Plants ACEC would be withdrawn from mineral entry, including acquired lands. All public lands would be changed from multiple use class M to class L.

(AD-25) To protect Charlotte's phacelia and Ninemile Canyon phacelia, cattle grazing on the slopes of the eastern Sierra Nevada Mountains would be restricted in known habitat to the July 1 to April 1 time periods.

(AD-26) The multiple use class of lands south of the Cady Mountains would be changed from class M to class L.

2.5.5 Public Land Livestock Grazing Program

The livestock grazing program proposed by Alternative A would be implemented, except as expressly modified below.

- (AD-27) Fund Avery-Ivanpah study in three DWMA allotments (Harper, Ord, and Cronese) to determine the appropriateness of the 230 lbs / acre threshold; until that determination is scientifically made, use a threshold of 350 lbs / acre.
- (AD-28) Rather than March 15, remove cattle by February 15 of each year (as per other prescriptions) to benefit neonatal foraging.
- (AD-29) Prevent any further damage to identified riparian areas on all cattle allotments managed by the BLM.
- (AD-30) Take an aggressive look at the best placements of waters to facilitate other measures (i.e., establishing the Exclusion Zones, etc.) and minimize impacts to all covered species.
- (AD-31) Minimize OHV impacts on cattle in the Ord Mountain Allotment.
- (AD-32) Throughout the MGS conservation area, maintain 350 lbs/acre for sheep grazing until scientific studies demonstrate a non-competitive threshold. No sheep grazing would be allowed in this area after May 15.

2.5.6 Public Land Motorized Vehicle Access Network

The motorized vehicle access network proposed for Alternative A would be implemented under Alternative D.

(AD-33) Additional motorized vehicle access restrictions would be imposed in several of the motorized access zones within the DWMAs. Within biologically sensitive MAZ's, only street-legal vehicles (i.e. licensed by the California Department of Motor Vehicles in accordance with the State Vehicular Code as legal for operation on California's public roads and highways) would be permitted. These include street-legal four-wheel drive vehicles and dual-sport motorcycles. Vehicles that are not street-legal but are only eligible for "green sticker" licensing (that is, approved for use off of highways) would be prohibited. These include many types of dune buggies, sand rails, all terrain vehicles, quads and dirt bikes. The restricted MAZ's would be listed in Table 2-29.

Table 2-29
Motorized Access Zones
Limited to Street-Legal Vehicles Only

SUBREGION OR SPECIAL MANAGEMENT AREA	MOTORIZED ACCESS ZONE	REASONS FOR VEHICLE RESTRICTIONS
El Mirage	1,2	Total Corrected Sign for desert tortoise significantly above average; would help to address long-standing private property conflict issues
Kramer	1	Total Corrected Sign for desert tortoise significantly above average; would assist in addressing urban interface issues (i.e. Silver Lakes)
Kramer	2,3,4	Total Corrected Sign for desert tortoise significantly above average
Fremont	1,2,5	Total Corrected Sign for desert tortoise significantly above average
Superior	1	Total Corrected Sign for desert tortoise significantly above average; closure would help address significant law enforcement issues
Superior	3	Total Corrected Sign for desert tortoise significantly above average
Superior	4	Total Corrected Sign for desert tortoise significantly above average; offers protection to Paradise Valley which was withdrawn from the military as a possible expansion area
Superior	5	Total Corrected Sign for desert tortoise significantly above average; offers further protection for the Lane Mountain milkvetch
Newberry Rodman	3	Total Corrected Sign for desert tortoise significantly above average; conflicts with permitted ranching operation
Coyote	1	Total Corrected Sign for desert tortoise significantly above average (Offers protection to Paradise Valley)
Western Rand ACEC	---	Important tortoise habitat, adjacent to Desert Tortoise Research Natural Area

(AD-34) The CDCA Plan access corridor connecting the Stoddard Valley Open Area and the Johnson Valley Open Area would be deleted.

(AD-35) During periods of prolonged drought (lasting three or more years), the BLM would consider emergency route closures (generally referred to as "quarantine areas") in higher density areas, or identified motorized access zones. Such quarantines would be lifted

immediately following break of the drought, which would be identified by the Implementation Team in coordination with BLM, USFWS, and CDFG.

2.6 ALTERNATIVE E: ONE DWMA – ENHANCED RECREATION OPPORTUNITIES

2.6.1 Overview

Alternative E's conservation strategy, like Alternative D's, grew out of discussions among the participating agencies and members of the public during EIR/S scoping and the development of Alternative A. Many suggestions were offered that called for placing a very high priority on multiple use and motorized vehicle access to the desert, even if this might affect some of the programs that could be implemented to conserve species and ecosystems. These included scoping meeting requests that the EIR/S explore whether a single DWMA, protecting only the remaining areas of relatively higher tortoise populations, might be effective in conserving the desert tortoise. Alternative E presents a conservation strategy that incorporates many of these suggestions (see foldout Map 2-19; BLM multiple use classes are depicted on Map 2-20 (on attached CD Rom).

Alternative E is intended to implement a tortoise management strategy that emphasizes a very aggressive ecosystem conservation program within the single DWMA, comparable to that proposed by Alternative D. Outside of this area, a program would be implemented that emphasizes multiple use, with special emphasis given to enhancing recreation opportunities.

All aspects of this alternative's conservation strategy would be as described for Alternative A, except as specifically described below. These include Alternative A's motorized vehicle access network, education, feral dog management plan and disease management trust fund.

2.6.2 Habitat Conservation Area

(AE-1) A single DWMA would be established, encompassing 1,118 square miles and including portions of Alternative A's Superior-Cronese and Fremont-Kramer DWMA. This DWMA would exclude the Pinto Mountains, the Ord and Rodman Mountains, lands north and west of Kramer Junction, and lands south of Shadow Mountain Road. Within this DWMA, the tortoise conservation measures proposed by Alternative D would apply, except where specifically noted below. Neither biological transition areas nor special review areas would be designated.

(AE-2) All BLM multiple use class M lands within the DWMA would be changed to class L. Lands within the DWMA removed from the LTA disposal zone would be changed from multiple use class U to L. All other multiple use class changes for ACECs and conservation areas outside the DWMA's would be as described in Alternative A.

Boundaries of conservation areas for the Mohave ground squirrel and other species would be established as proposed for Alternative A, except for the removal of the Spangler Hills Open Area expansion from the MGS Conservation Area.

2.6.3 Compensation Framework

(AE-3) Single-family residential structures within the HCA but outside of the tortoise DWMA would be exempt from the mitigation fee. The fee would apply to single-family residential structures within the DWMA.

2.6.4 Recreation Program

Alternative E proposes a number of measures that would enhance recreation opportunities within the western Mojave Desert. These are described below:

- (AE-4) Expand the Spangler Hills Open Area to include lands to the southwest between Highway 395 and the Trona Road. Change the BLM multiple use class to Class I within this area. The competitive “C” routes would be reopened.
- (AE-5) Expand the Johnson Valley Open Area westward to include the Cinnamon Hills. Change the BLM multiple use class to Class I within this area.
- (AE-6) Establish a Fremont Recreation Area on lands north and west of Fremont Peak, surrounding Cuddeback Dry Lake. Change the BLM multiple use class to Class M within this area. Allow competitive off highway vehicle speed events within this area on designated motorized vehicle routes. Prepare a management plan for this area that emphasizes vehicle access, camping, and competitive event support. A denser network of off highway vehicle routes than that proposed by Alternative A could be established in this area close to Cuddeback Dry Lake.
- (AE-7) Establish a corridor specifically for enduro events that runs from the El Mirage Open Area, to and past the Fremont Recreation Area, and ends at the Spangler Hills Open Area.
- (AE-8) Competitive motorized recreation events would be allowed between Shadow Mountain Road and the El Mirage Open Area.

(AE-9) “Yellow flag” restrictions for competitive events would apply only within the single DWMA.

2.6.5 Species Conservation Measures

Desert Tortoise: (AE-11) All public lands within the single tortoise DWMA would be reclassified as Category I habitat. All public lands outside of the DWMA would be reclassified as Category III habitat.

(AE-12) Within the DWMA, the following activities would be prohibited:

- All competitive and organized off highway vehicle events (including dual sport) within the DWMA, except for enduros along the proposed enduro corridor.
- Commercial filming
- Shooting and hunting

(AE-13) Outside of the DWMA, the commercial filming program described by Alternative A would be implemented.

(AE-14) The stopping, parking and camping changes proposed by Alternative A would apply only within the single tortoise DWMA.

(AE-15) Acquisition priorities would be highest for lands within the DWMA. However, there would be no net loss of acreage of private lands within the planning area.

(AE-16) Fencing priorities would be the same as for Alternative A, except that special attention would be given to ensure that these fences do not restrict off highway vehicle recreation opportunities. Fence the periphery of the DWMA, as needed.

(AE-17) The fire management program described for Alternative D would be applied within the DWMA.

(AE-18) Implement the headstarting program described by Alternative A, subject to the following modifications. Locate all facilities within the DWMA in places where tortoises have apparently been extirpated. Collect gravid females from adjacent areas, not within the DWMA.

(AE-19) If authorized construction project displaces tortoises within two miles of the DWMA, consider translocating them into the nearest portion of the DWMA.

(AE-20) Except as described in the Tortoise Disposition Protocol, do not mass-translocate tortoises into the DWMA. Mass translocation may serve as an adaptive management tool if clear scientific-based protocols are developed and endorsed by appropriate entities (such as the MOG).

(AE-21) A minimum of 2 new law enforcement and 2 new maintenance workers would be assigned to the DWMA, dedicated full-time to natural resources enforcement and implementation work

2.6.6 Public Land Livestock Grazing Program

(AE-22) The program would be the same as proposed for Alternative A, except there

would be no seasonal restriction (i.e., May 15) or utilization threshold (i.e., 230 lbs/acre) on cattle or sheep allotments. The Harper Lake Allotment and the Cronese Lakes Allotment coincide with the single DWMA. All portions of allotments within the DWMA would no longer be available for grazing.

(AE-23) Sheep grazing would not be eliminated from public lands between Shadow Mountain Road and the northern, fenced boundary of the El Mirage Open Area.

2.7 ALTERNATIVE F: NO DWMA – AGGRESSIVE DISEASE AND RAVEN MANAGEMENT

2.7.1 Overview

Alternative F's conservation strategy differs from that of the previously discussed alternatives, in that it proposes a tortoise conservation strategy that relies on an aggressive program of tortoise disease management and raven control, supported by limited fencing, rather than the establishment of DWMA's to protect tortoise habitat. Thus the highest funding priority would be given to controlling disease and ravens, and no DWMA's would be designated (see foldout Map 2-21).

All aspects of this alternative's conservation strategy would be as described for Alternative A, except as specifically described below. These include Alternative A's motorized vehicle access network, livestock grazing program and education outreach.

2.7.2 Habitat Conservation Area

(AF-1) A 1.3 million acre habitat conservation area would be established that would consist only of the MGS Conservation Area and the 14 conservation areas proposed for other species by Alternative A. No DWMA's would be established, nor would DWMA ACECs be designated. Although no DWMA's would be delineated, BLM's Category I, II and III tortoise habitat designations and USFWS critical habitat would remain in effect.

(AF-2) Tortoise Special Review Areas would not be designated; however, the Little San Bernardino Mountains Gilia SRA would be designated. Biological Transition Areas would not be established.

(AF-3) BLM multiple use class M lands would change to class L in the northern portion of the MGS Conservation Area, at the Pisgah Crater Conservation Area, in the Carbonate Endemic Plants Conservation Area and in the Rand ACEC expansion area. Lands would be removed from the disposal zone of the LTA and changed from Unclassified to M as described for Alternative A).

2.7.3 Compensation Framework

(AF-4) The compensation framework would be as described for Alternative A, although the area within which the 5:1 compensation ratio would apply would change. Under this alternative, the 5:1 ratio would be in effect within the HCA, and on all desert tortoise critical habitat located outside the HCA.

(AF-5) The 1 percent allowable ground disturbance threshold would not apply, either within or outside the HCA. There would be no habitat credit component program.

2.7.4 Species Conservation Measures

Tortoise Take-Avoidance Measures: (AF-6) Restoration and reclamation programs could continue, although there would be no habitat credit program.

(AF-7) Motorized vehicle speed events would be allowed on a case-by-case basis. An environmental assessment would be prepared for each event. On BLM public lands designated as “limited areas”, motorized vehicle camping, stopping and parking on public lands would be allowed within 100 feet of designated open routes on BLM multiple use class L lands, and within 300 feet elsewhere.

(AF-8) Land acquisition would be guided by current BLM and Department of Defense acquisition priorities set by the BLM – EAFB land tenure adjustment strategy. This “LTA” strategy identified lands for disposal (Disposal Zone) while maintaining other lands (Retention and Consolidation Zones), the latter being located primarily in an L-shaped pattern running from north of Adelanto, to the Fremont Peak region, and then east through Superior Valley.

(AF-9) Mineral extraction and material sales would be allowed in all areas. BLM Plans of Operation would be required on multiple use class L and existing ACEC lands. Reclamation would be required, although restoration would not. Mines less than ten acres located on BLM lands would continue to be covered by the existing small mining biological opinion. SMARA regulations would be implemented by local jurisdictions and the BLM.

(AF-10) In tortoise Category I and II habitat, dogs off leash under the control of their owners would be allowed except where prohibited.

(AF-11) Caltrans highway proposals would be considered on a case-by-case basis.

(AF-12) Law enforcement and BLM ranger patrols would continue at current levels. There would be no new law enforcement personnel.

(AF-13) New utility construction and maintenance measures for tortoises would be addressed on a case-by-case basis. Maintenance measures would continue to follow existing procedures.

(AF-14) Streamlined Level 1 BMPs would apply within Category I and Category II tortoise habitat. Level 2 BMPs would apply elsewhere.

Tortoise Fencing Program: (AF-15) Require immediate fencing along the following roads, in decreasing order of priority: all of Highway 395 between Adelanto and Red Mountain; all of Highway 58 between Highway 14 and Barstow; all of Highway 247 between Barstow and Lucerne Valley; all of Interstate 40 between Barstow and Ludlow; and all secondary roads adjacent to tortoise habitat: Shadow Mountain Road, Fort Irwin Road, Irwin Road, recently paved portions of Twenty Mule Team Road, and Garlock Road.

Tortoise Survey and Disposition Protocols: (AF-16) Presence-absence survey would be required in all areas, and clearance surveys would be required where tortoise sign is found. “No Survey” areas would not be designated.

Tortoise Headstarting and Translocation: (AF-17) There would be no headstarting program, nor would there be the establishment of formal translocation areas. The Implementation Team would assist project proponents, as needed, to rescue tortoises from harm’s way on BLM-authorized projects.

Tortoise Disease Management and Raven Control: (AF-18) The disease and raven programs proposed by Alternative A would be implemented under this alternative. Funding these programs would receive the highest priority. All other tortoise management programs, including habitat enhancement, reclamation, land acquisition, headstarting, weed management and other actions, would be funded only to the degree that moneys were available after full funding of the disease and raven control programs. If necessary, institute emergency culvert closure.

Other Species: (AF-19) LeConte’s thrasher conservation would rely on lands protected by the MGS and other species conservation areas. No compensation or avoidance requirements would be imposed for the take of burrowing owl, alkali wetland plants, Little San Bernardino Mountains gilia and crucifixion thorn.

2.7.5 Public Land Livestock Grazing Program

(AF-20) Livestock grazing would be managed pursuant to the existing USFWS biological opinions and current BLM CDCA Plan management. Sheep would continue to be precluded from grazing in tortoise Category I and II habitat.

2.8 ALTERNATIVE G: NO ACTION

2.8.1 Overview

Alternative G assumes the continued implementation, over the next 30 years, of existing approaches to the conservation of sensitive plants and animals as expressed in current provisions of agency and jurisdiction land use plans, ordinances, statutes and policies. Current procedures for complying with the California and federal endangered species acts would remain in effect, including case-by-case permitting under FESA and CESA. These programs are discussed in detail in Chapter 3, Section 3.1 (Planning and Regulatory Framework), and in the *Current*

Management Situation of Special Status Species in the West Mojave Planning Area (a copy of which is included on the attached CD-Rom).

2.8.2 Habitat Conservation Area

No new conservation areas would be designated for the tortoise, nor would new conservation areas be established for other sensitive species. The DTNA would remain as the only area expressly managed for conservation of the tortoise. BLM management on public lands would be directed by management goals of Category I, II, and III, Multiple Use Guidelines given in the CDCA Plan, USFWS-designated critical habitat, and other applicable regulations (i.e., FLMPA, FESA, etc.). Many of these same regulations would also apply to management of private lands, and CESA would apply.

No changes would be made to the Land Tenure Adjustment program.

Species within cities and counties would continue to be managed under general plans and other applicable regulations (i.e., SMARA, Streambed Alteration Agreements, etc.). There would be no special review areas or biological transition areas. The Mojave Basin Adjudication would remain in effect.

2.8.3 Compensation Framework

The tortoise compensation framework would still follow the MOG formula. Although this formula is ostensibly applicable to public lands only, it has been (and would continue to be) applied to private lands as well, and is driven by the proximity of private lands to Category I, II, and III. Therefore, compensation ratios would remain at between 1:1 (on and adjacent to Category III Habitat) and up to 6:1 (on Category I Habitat). CDFG would continue to require trapping for Mohave ground squirrel, and CDFG's existing fee program for MGS would continue. The compensation framework, new ground disturbance limits and habitat credit component proposed by Alternative A would not apply.

2.8.4 Incidental Take Permits

Incidental take authorization (federal Section 10(a) and State 2081 permits) would continue to be sought on private lands where tortoise sign is found during presence-absence surveys. Projects with a federal nexus would continue to be authorized under Section 7 of FESA, and result in formal (i.e., issuance of biological opinions) and informal consultations.

2.8.5 Species Conservation Measures

- **Desert Tortoise:** There would be no specific, new conservation measures or areas applied to tortoise protection. The DTNA would remain as the single place where management for tortoise conservation would be applied.

• **Mohave Ground Squirrel:** No new measures would be identified relative to MGS conservation. Management would continue to be applied on private lands, but would not significantly affect management on public lands, except as provided for under CDCA guidelines and an MOU established between the BLM and CDFG.

Other Species: Carbonate Habitat Management Strategy would apply after a separate biological opinion. Take of burrowing owls would be determined on a case-by-case basis. No killing of owls would be allowed, as at present. Species found primarily on private lands (alkali mariposa lily, gray vireo, Little San Bernardino Mountains gilia, Parish's alkali grass, Parish's popcorn flower, San Diego horned lizard, and short-joint beavertail cactus) would receive case-by-case review under CEQA. Species dependent on groundwater levels in the Mojave River would continue to be governed by local ordinances, wetland laws and application of the Mojave Basin Adjudication.

2.8.6 Public Land Livestock Grazing Program

If Alternative G (No Action) is adopted, the National Fallback Standards and Guidelines will be adopted for the Western Mojave Desert portion of the BLM's California Desert District.

2.8.6.1 Objective A - Implement Standards

Manage grazing activities under the National Fallback Standards:

- *Soils.* Upland soils exhibit infiltration and permeability rates that are appropriate to the soil type, climate, and landform.
- *Riparian/Wetland.* Riparian-wetland areas are in properly functioning condition.
- *Stream Function.* Stream channel morphology (including but not limited to gradient, width/depth ratio, channel roughness and sinuosity) and functions are appropriate for the climate and landform.
- *Native Species.* Healthy, productive, and diverse populations of native species exist and are maintained.

2.8.6.2 Objective B – Conform Grazing Activities

Manage grazing activities under the following fallback guidelines:

- Management practices maintain or promote adequate amounts of ground cover to support infiltration, maintain soil moisture, and stabilize soils.
- Management practices maintain or promote soil conditions that support permeability rate that are appropriate to climate and soils.

- Management practices maintain or promote sufficient residual vegetation to maintain, improve, or restore riparian-wetland functions of energy dissipation, sediment capture, groundwater recharge and stream bank stability.
- Management practices maintain or promote stream channel morphology (e.g., gradient, width/depth ratio, channel roughness and sinuosity) and functions that are appropriate to climate and landform.
- Management practices maintain or promote the appropriate kinds and amounts of soil organisms, plants and animals to support the hydrologic cycle, nutrient cycle, and energy flow.
- Management practices maintain or promote the physical and biological conditions necessary to sustain native populations and communities.
- Desired species are being allowed to complete seed dissemination in one out of every three years (Management actions will promote the opportunity for seedling establishment when climatic conditions and space allow.)
- Conservation of Federal threatened or endangered, Proposed, Category 1 and 2 candidate, and other special status species is promoted by restoration and maintenance of their habitats.
- Native species are emphasized in the support of ecological function.
- Non-native plant species are used only in those situations in which native species are not readily available in sufficient quantities or are incapable of maintaining or achieving properly functioning conditions and biological health.
- Periods of rest from disturbance or livestock use during times of critical plant growth or regrowth are provided when needed to achieve healthy, properly functioning conditions (The timing and duration of use periods will be determined by the authorized officer).
- Continuous, season-long livestock use is allowed to occur only when it has been demonstrated to be consistent with achieving healthy, properly functioning ecosystems.
- Facilities are located away from riparian-wetland areas wherever they conflict with achieving or maintaining riparian-wetland function.
- The development of springs and seeps or other projects affecting water and associated resources shall be designed to protect the ecological functions and processes of those sites.
- 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.

2.8.7 Public Land Motorized Vehicle Access Network

Off road vehicle designations in the West Mojave planning area would remain unchanged from those already in effect. Motorized vehicle networks developed during the preparation of ACEC management plans since 1980 would provide the network that would apply within those ACECs. These include the following ACECs: Afton Canyon, Barstow Woolly Sunflower, Bedrock Spring, Big Morongo Canyon, Black Mountain, Calico Mountain Early Man Site, Christmas Canyon, Cronese Basin, Desert Tortoise Research Natural Area, Fossil Falls, Great Falls Basin, Harper Dry Lake, Jawbone/ Butterbredt, Juniper Flats, Last Chance Canyon, Mojave Fishhook Cactus, Rainbow Basin Natural Area, Red Mountain Spring (formerly Squaw Spring), Rodman Mountains Cultural Area, Rose Spring, Sand Canyon, Short Canyon, Soggy Dry Lake, Steam Well, Trona Pinnacles, Upper Johnson Valley, Western Rand Mountains, and Whitewater Canyon.

In all other areas, the 1985-87 off road vehicle designations would remain in place.

2.8.8 Education Program

Current programs implemented by the BLM, cities and counties would continue, including public volunteer efforts, outreach programs, media contacts, visitor field contacts and patrols by law enforcement personnel.

2.9 ALTERNATIVES EVALUATED BUT ELIMINATED FROM DETAILED CONSIDERATION

An environmental impact statement is required to rigorously explore and objectively evaluate all reasonable alternatives. The range of reasonable alternatives is limited by legal requirements and the requirements to fulfill the purpose and need described in Chapter One. The following alternatives were evaluated and eliminated from detailed consideration. These alternatives were eliminated because they did not meet the purpose and need for the West Mojave Plan or the CDCA Plan, did not meet certain legal requirements of FLPMA, or were variations of alternatives already being studied in detail through this environmental impact statement process.

Route Designation Mileage Ceiling Alternative: During the task group process, it was suggested that the mileage of a final motorized vehicle access network be capped at 18 miles per township in desert tortoise Category I habitat, and 24 miles per township in desert tortoise Category II habitat. This alternative was not considered in detail due to the arbitrary nature of these figures, neither of which had any basis in either the Desert Tortoise Recovery Plan or the scientific literature. Instead, the route network design was grounded in factors having a demonstrated connection to habitat needs, such as avoiding washes and areas of relatively high tortoise density, elevation and slope considerations, sensitivity of other species, elimination of

redundant routes and type of vehicle use, as well as recreational, commercial and landowner access needs.

Interim Management Alternative: As a result of a January 2001 consent decree commitment on a settlement agreement arising out of litigation between BLM and the Center for Biological Diversity and others, the BLM was required to “implement an emergency route closure” for the Red Mountain, Fremont, Kramer, Superior and Newberry-Rodman subregions. This measure was to remain in effect until the issuance of the West Mojave Plan Record of Decision. BLM implemented this measure by adopting route closures, based upon the preliminary and relatively incomplete information available at that time.

The closures were identified before the field survey work described above was completed, at a time when the route designation planning process was still at a relatively early stage. Prior to March 2002, the results of this field survey were not available to help identify the location of routes of travel on the ground, the nature of those routes (graded, 4WD, single track, level of use), and vehicle destination points (campgrounds, staging areas, popular recreation sites, and other features). The results of the field survey indicate that the design of the resulting access network did not provide for all motorized vehicle access needs, nor for the most effective protection for species of concern.

Core Area Alternative: An approach suggested for reserve design was to identify DWMA boundaries, and then designate the most biologically sensitive or important portions of those DWMA as “core areas,” which would receive relatively higher priority for funding and implementation. This alternative was eliminated because it was concluded that all portions of the DWMA are equally critical for tortoise recovery, and that identifying higher priority “core areas” necessarily demoted the remainder of the DWMA to a low priority zone that, given limited funding, might see little in the way of implementation in the future. This could heighten the risk that habitat between the “core areas” would degrade, thereby fragmenting the DWMA.

Barstow to Vegas Race Course Alternative: A proposal was suggested to re-route the West Mojave segment of the Barstow to Vegas Race Course to avoid sensitive resources. The start cone was to be relocated from the Alvord Road area to the Johnson Valley Open area, and the re-routed race course was to proceed northwest to the Pisgah Crater area, cross I-40, wind through the Cady Mountains area, cross I-15, and join the existing Barstow to Vegas Race Course near the Soda Mountains. This alternative was eliminated because in December 2002, the BLM’s Record of Decision for its Northern and Eastern Mojave Plan eliminated the eastern three-quarters of the Barstow to Vegas Race Course. Lacking a route to connect to east of the Soda Mountains, a re-routed, but stand-alone, western segment would be an abbreviated route that would end with its eastern terminus well short of its intended destination, the State of Nevada. Accordingly, it was eliminated from detailed consideration.

Listed Species Only Alternative: The CDFG suggested consideration of an alternative addressing only those species designated as rare, threatened or endangered under state and federal laws. This alternative would not meet BLM and local jurisdiction objectives to conserve species that may be listed in the future. Moreover, because the West Mojave Plan is a federal land use plan amendment, as well as a habitat conservation plan, a listed species only alternative

would not meet federal policies requiring the conservation of non-listed but sensitive species on public lands.

Listed and Candidate Species Alternative: The CDFG suggested consideration of an alternative addressing only those species now designated as rare, threatened or endangered or as candidates for listing under state and federal laws. This alternative, like the listed species only alternative, would not meet BLM and local jurisdiction objectives and federal mandates to conserve species that may be listed in the future.

Existing Reserves Alternative: The CDFG suggested consideration of an alternative addressing only conservation within existing reserves. This alternative is similar to the No Action alternative, which is already addressed in detail. It would not meet the objectives of providing an integrated conservation program for the desert tortoise or Mohave ground squirrel and for many other species.

2.10 COMPARISON OF ALTERNATIVES

BLM multiple use class acreages are presented in Table 2-30. The acres of conservation areas that would be established by each alternative are identified in Table 2-31. A summary of actions proposed for each of the seven alternatives can be found in Table 2-32. Finally, for each species addressed by the plan, Table 2-33 presents a comparison of the acreage of habitat set aside for conservation and the acreage available for incidental take.

Table 2-30
Table Showing Multiple Use Classes in Each Alternative
Acres of BLM land

Alternative	Class C	Class L	Class M	Class I
A Preferred	457,721	1,494,725	715,964	379,906
B BLM Only	457,721	1,494,725	712,190	379,906
C Recovery Plan	457,721	1,494,725	717,540	379,906
D Enhanced Ecosystem Protection	457,721	1,884,740	329,720	373,548
E Enhanced Recreation	457,721	1,598,150	583,803	407,905
F Disease and Predation	457,721	1,494,725	714,229	373,407
G No Action	457,721	1,501,224	877,042	378,467

Numbers are approximate

**Table 2-31
Acreage of New Conservation Areas in Each Alternative**

	A PREFERRED	B BLM ONLY*	C RECOVERY PLAN	D ENHANCED ECOSYSTEM	E ENHANCED RECREATION	F DISEASE AND RAVEN	G NO ACTION
Tortoise DWMAs	1,477,630	1,023,329	1,514,847	1,505,494	715,424	0	0
MGS Conservation Area	1,701,947	1,280,106	1,701,947	1,701,947	1,701,947	1,701,947	0
Special Review Area	135,037	0	63,340	135,037	135,037	63,340	0
Biological Transition Area	123,665	0	0	97,867	0	0	0
Alkali Mariposa Lily	3,500	0	3,500	3,500	3,500	3,500	0
Barstow Woolly Sunflower	36,211	17,682	36,211	36,211	36,211	36,211	314
Bendire's Thrasher*	28,046	28,046	28,046	28,046	28,046	28,046	0
Big Rock Creek	10,785	10,785	10,785	10,785	10,785	10,785	0
Carbonate Endemic Plants	5,169	4,393	5,169	5,169	5,169	5,169	0
Coolgardie Mesa	13,354	10,107	13,354	13,354	13,354	13,354	0
Kelso Creek Monkeyflower*	1,870	1,870	1,870	1,870	1,870	1,870	0
Middle Knob	20,495	17,671	20,495	20,495	20,495	20,495	0
Mojave Monkeyflower	57,087	36,630	57,087	57,087	57,087	57,087	0
Mojave Fringe- toed Lizard	42,865	8,485	42,865	42,865	42,865	42,865	
North Edwards	14,343	0	14,343	14,343	14,343	14,343	0
Parish's Phacelia	898	512	898	898	898	898	0
Pisgah Crater	18,552	14,224	18,552	18,552	18,552	18,552	± 18,000
West Paradise	1,243	257	1,243	1,243	1,243	1,243	0

* Acreages are for BLM managed lands only

** The boundaries of the SEAs are under review by Los Angeles County and may expand.

Many conservation areas overlap; thus, acreages are not totaled.. Includes existing ACEC's and Wilderness within the HCA.

**Table 2-32
Summary of EIS Alternatives**

	<u>ALTERNATIVE A</u> INTERAGENCY CONSERVATION PLAN	<u>ALTERNATIVE B</u> BLM ONLY	<u>ALTERNATIVE C</u> TORTOISE RECOVERY PLAN	<u>ALTERNATIVE D</u> ENHANCED ECOSYSTEM PROTECTION	<u>ALTERNATIVE E</u> ONE DWMA ENHANCED RECREATION OPPORTUNITIES	<u>ALTERNATIVE F</u> NO DWMA AGGRESSIVE DISEASE & RAVEN MANAGEMENT	<u>ALTERNATIVE G</u> NO ACTION
OVERVIEW							
Overview	Conservation strategy seeks to balance conservation of sensitive plants and animals, and multiple use of the western Mojave Desert, providing motorized vehicle access where appropriate, while meeting FESA and CESA permit issuance criteria.	Same as Alternative A, implemented on BLM lands only. Case by case CESA and ESA compliance on private lands, as at present.	Desert Tortoise Recovery Plan actions serve as conservation strategy for tortoise. Other Species: Alternative A conservation strategy.	High priority on conservation of sensitive plants and animals, even if this requires limits on motorized vehicle access to and multiple use of the western Mojave Desert.	Single 1,000 mi ² DWMA, composed of high-density areas. Alternative D program within DWMA, except as noted below. Elsewhere, multiple use with special emphasis on enhancing recreation. Other Species: Alternative A conservation strategy.	Intensive raven and tortoise disease management program, supported by limited fencing, rather than habitat protection and acquisition. Other programs - low priority for funding or eliminated. Other Species: Alternative A conservation strategy.	Current management continues. The Wildlife Element of the CDCA Plan, as amended, lists applicable public laws, acts, and executive orders that provide direction to the BLM in managing wildlife resources.
HCP?	Yes	No		Yes			No
Biological Goal	The biological goals identified for Alternative A would apply to all alternatives.						
CONSERVATION AREAS							
BLM Multiple Use Class Changes	See Table 2-31.						
Conservation Areas	See Table 2-32						
Biological Transition Areas (BTA)	Yes	No		Yes		Tortoise BTA - No MGS BTAs - Yes.	No
Special Review Areas	3 SRAs - 2 tortoise, 1 Little San Bernardino Mountain gilia.	No SRAs		3 SRAs - 2 tortoise, 1 Little San Bernardino Mountain gilia.		1 SRA - Little San Bernardino Mountains gilia.	No SRA.
Tortoise DWMA Status	Area of Critical Environmental Concern					None	
MGS CA Status	Wildlife Habitat Management Area			ACEC	Wildlife Habitat Management Area		None
Other New Special	Potential tortoise translocation area(s) in	Two new Key Raptor Areas (Middle Knob	Ord Rodman ecological reserve and research	Emergency management zones in	Fremont Recreation Area.	None	None.

	<u>ALTERNATIVE A</u> INTERAGENCY CONSERVATION PLAN	<u>ALTERNATIVE B</u> BLM ONLY	<u>ALTERNATIVE C</u> TORTOISE RECOVERY PLAN	<u>ALTERNATIVE D</u> ENHANCED ECOSYSTEM PROTECTION	<u>ALTERNATIVE E</u> ONE DWMA ENHANCED RECREATION OPPORTUNITIES	<u>ALTERNATIVE F</u> NO DWMA AGGRESSIVE DISEASE & RAVEN MANAGEMENT	<u>ALTERNATIVE G</u> NO ACTION
Designations	Brisbane and Copper Mountain Mesa. Two new Key Raptor Areas (Middle Knob and Argus Mountains).	and Argus Mountains).	natural area. Cattle grazing experimental management zone in Ord-Rodman DWMA. Carbonate endemic plants RNA.	Brisbane Valley and Copper Mountain Mesa to study effects of sheep/OHV use and urbanization, respectively, on tortoises.	Enduro Corridor from El Mirage Open Area to Spangler Hills Open Area		
COMPENSATION AND ALLOWABLE GROUND DISTURBANCE							
Compensation Framework	Three-tiered mitigation fee areas, derived from multipliers of 5:1, 1:1 and 0.5:1 times average HCA land value. Replaces most current mitigation, enhancement and endowment fees, many survey costs, time delays.	5:1 compensation within tortoise DWMA's; elsewhere, existing enhancement and endowment fees, survey costs, time delays.	Same as Alternative A.	Same as Alternative A, except - additive fees for multiple species, not to exceed a specified ratio (e.g. 7:1). Directed mitigation for plants.	Same as Alternative A; smaller HCA.	Same as Alternative A; smaller HCA.	Current Management: Desert tortoise management oversight group's (MOG) existing tortoise formula; CDFG enhancement and endowment fees, survey costs, time delays.
Allowable Ground Disturbance	One percent threshold, applicable within HCA, tracked by jurisdiction.	One percent threshold for BLM lands within HCA.	Not Applicable	One percent, tracked by conservation area and by jurisdiction.	Same as Alternative A.	Not applicable.	No limits
Restoration of existing ground disturbance	Habitat credit component.	Same as Alternative A, except applicable to BLM lands only.	Restore surface disturbance within DWMA's to pre disturbance conditions	Program to reclaim habitats in HCA to be developed by Implementing Team.	Same as Alternative A, applied to smaller HCA.	Current Management. (Tamarisk removal and habitat restoration at Afton Canyon, Salt Creek, Harper Lake, intensive rehabilitation in recently burned areas.)	Tamarisk removal and habitat restoration at Afton Canyon, Salt Creek, Harper Lake, intensive rehabilitation in recently burned areas.
MOTORIZED VEHICLE ACCESS AND RECREATION							
Motorized Vehicle Access Network: Components	Redesign network for tortoise critical habitat, Middle Knob, Juniper Flats. Adopt existing designated network elsewhere (1985-87, ACEC, Rand Mountains, Ord Mountain). El Paso Collaborative Access Planning Area -- adopt 1985-87 and initiate follow-on community-based off road vehicle designation program.			Same as Alternative A except: - Only "street legal" vehicles allowed in biologically sensitive DWMA areas,	Same as Alternative A, except more intensive recreational uses of network allowed.	Same as Alternative A.	Adopt existing motorized vehicle route networks. No redesign.
Motorized Vehicles: Competitive	No vehicle speed events allowed in DWMA's or MGS Conservation Area. Dual sport allowed seasonally in DWMA's, subject to limitations; year		All competitive and organized events (including dual sport)	All competitive and organized events (including dual sport)	Outside DWMA, same as Alt A, except: Reopen competitive C	Vehicle speed events allowed case by case; EA prepared for each	Vehicle speed events allowed case by case; EA prepared for each

	<u>ALTERNATIVE A</u> INTERAGENCY CONSERVATION PLAN	<u>ALTERNATIVE B</u> BLM ONLY	<u>ALTERNATIVE C</u> TORTOISE RECOVERY PLAN	<u>ALTERNATIVE D</u> ENHANCED ECOSYSTEM PROTECTION	<u>ALTERNATIVE E</u> ONE DWMA ENHANCED RECREATION OPPORTUNITIES	<u>ALTERNATIVE F</u> NO DWMA AGGRESSIVE DISEASE & RAVEN MANAGEMENT	<u>ALTERNATIVE G</u> NO ACTION
Events	round elsewhere. Johnson Valley to Parker Race allowed, Barstow to Vegas racecourse eliminated.		prohibited within DWMA's.	prohibited within DWMA's. Stoddard to Johnson, Barstow to Vegas eliminated.	routes by Spangler Open Area, allow competitive events between Shadow Mtn Road and El Mirage open area. In small DWMA, competitive events prohibited.	event	event
Motorized Vehicles: Public Land Stopping and Parking	DWMA's - allowed 50 feet from centerline of the designated route, 300 feet elsewhere.		Within DWMA's, allowed in designated areas, within 300 feet of centerline of elsewhere.	Within DWMA's, allowed 15 feet from center line of the designated route.	In small DWMA, allowed 50 feet from center line. Elsewhere, within 100 feet in MUC L, 300 feet elsewhere	Within 100 feet of open routes in BLM class L, 300 feet elsewhere.	
Public Land Motorized Vehicle Camping	Within DWMA's, allowed in previously existing disturbed camping areas adjacent to open routes, within 300 feet of centerline elsewhere.		Within DWMA's, allowed in designated areas, within 300 feet of centerline elsewhere.	Designated areas only. Consolidate multiple camping sites into one official BLM campground.	Within small DWMA, same as alternative A. Elsewhere, allowed except where prohibited.	Allowed within 100 feet of open routes in BLM class L, 300 feet elsewhere.	
Other Recreation Measures	None		DWMA's may provide forms of recreation compatible with tortoise recovery.	Establish EMZ in Brisbane Valley to study effects of OHV on tortoise	(1) Expand Spangler Hills, Johnson Valley open areas (2) Fremont Recreation Area	None	
Minimum impact recreation (e.g., hiking, equestrian uses, bird watching, photography) allowed in all areas.							
SPECIES CONSERVATION MEASURES: GENERALLY APPLICABLE							
Fire	Current Management		Fire suppression that minimizes surface disturbance (reflects current management).	Current management except, avoid use of heavy equipment and excessive ground disturbance in HCA	Current Management		
Highways - Maintenance	In DWMA's, seasonal restrictions, roadbed and berm requirements, no use of invasive weeds for landscaping in DWMA's.	Same as Alt A, but limited to BLM lands.	Same as Alt A. Monitors assigned to all maintenance crews.	Same as Alternative A.			Current Management
Hunting and Shooting	As regulated by current legislation.		DWMA's - No Shooting except hunting Sept - Feb	DWMA public lands: shooting other than hunting not allowed.	Same as Alternative A.		As regulated by current legislation.

	<u>ALTERNATIVE A</u> INTERAGENCY CONSERVATION PLAN	<u>ALTERNATIVE B</u> BLM ONLY	<u>ALTERNATIVE C</u> TORTOISE RECOVERY PLAN	<u>ALTERNATIVE D</u> ENHANCED ECOSYSTEM PROTECTION	<u>ALTERNATIVE E</u> ONE DWMA ENHANCED RECREATION OPPORTUNITIES	<u>ALTERNATIVE F</u> NO DWMA AGGRESSIVE DISEASE & RAVEN MANAGEMENT	<u>ALTERNATIVE G</u> NO ACTION
Land Acquisition: General	Acquire private lands in HCA and manage for species recovery; set acquisition priorities. BLM's land tenure adjustment (LTA) program continues, modified by retention and acquisition of lands within HCA.		Acquire private lands in HCA; set acquisition priorities. Acquire all private lands in DWMA	Acquire private lands in HCA; set acquisition priorities; intent is to acquire as much private land as practicable. LTA program continues.	Acquire private lands in HCA; set acquisition priorities. DWMA given high priority for acquisition. LTA program continues.	LTA land acquisition program. Acquire private lands in multi-species CA.	LTA land acquisition program. No other overarching acquisition goal.
Land Acquisition	Maintain stability of local tax base.		Tax base changes acceptable.		Maintain stability of local tax base.		Current Management: Tax base changes acceptable.
Mining	Allowed; BLM Plans of Operations as currently, and in expanded ACECs (including all DWMA) and expanded Class L areas. Existing permitted mines continue according to Plans of Operation. Selected withdrawals from mineral entry.		Mining allowed case by case, provided not significantly impact tortoise habitat or populations; restoration.	See Alternative A. If source areas identified for MGS, consider mineral withdrawals. Restoration standard.	Same as Alt A, though DWMA ACEC is much smaller.	Allowed. BLM Plans of Operations on Class L and existing ACECs. Reclamation standard.	
Utility Corridor	Retain BLM's network of CDCA Plan utility corridors.						
CONSERVATION MEASURES SPECIFIC TO DESERT TORTOISE							
<i>Tortoise Take-Avoidance Measures</i>							
Commercial Activities	Current Management		Modify ongoing and planned activities.	Current management.			
Highways in DWMA	No new paved roads within tortoise DWMA other than Caltrans pre-approved projects (see above).		Restrict establishment of new roads in DWMA.	No new paved roads within DWMA other than Caltrans pre-approved projects.		Highway proposals considered case-by-case.	
<i>Tortoise Survey and Disposition Protocols</i>							
Tortoise Pre-Construction Surveys	Within DWMA, presence-absence and clearance surveys.. - In survey areas, clearance surveys; no Presence-absence surveys. In No Survey areas, no surveys.	Presence-absence surveys required in all areas, clearance surveys where tortoise sign is found.		Same as Alternative A.	Same as Alternative A, except Survey Area includes all lands outside Non-Survey Area and the single DWMA.	Presence-absence surveys required in all areas, clearance surveys where tortoise sign is found.	
Best Management Practices for Tortoise Habitat	Level 1 BMPs in DWMA. Level 2 outside of DWMA, but within tortoise survey areas.	Level 1 BMPs in DWMA, on BLM lands only.	No BMPs. Modify ongoing and planned activities.	Level 1 BMPs in DWMA and Survey Area. Mandatory monitoring or fencing.	Level 1 BMPs in DWMA. Level 2 outside of DWMA, but in survey areas.	Terms and Conditions in biological opinions. Stipulations specified in right-of-way grants, e.g., to minimize impacts. Case by Case for private projects.	

	<u>ALTERNATIVE A</u> INTERAGENCY CONSERVATION PLAN	<u>ALTERNATIVE B</u> BLM ONLY	<u>ALTERNATIVE C</u> TORTOISE RECOVERY PLAN	<u>ALTERNATIVE D</u> ENHANCED ECOSYSTEM PROTECTION	<u>ALTERNATIVE E</u> ONE DWMA ENHANCED RECREATION OPPORTUNITIES	<u>ALTERNATIVE F</u> NO DWMA AGGRESSIVE DISEASE & RAVEN MANAGEMENT	<u>ALTERNATIVE G</u> NO ACTION
Tortoise Handling Guidelines	Standard handling and disposition guidelines for all lands.	Standard handling and disposition guidelines for BLM land only. Case-by-case mitigation elsewhere.	Drop-off site for captive tortoises. Use for research and education.	Same as Alternative A.			Existing guidelines.
Tortoise Proactive Management							
Disease Program	Disease research and strategies considered at level of the MOG. Disease management program suggested, but low priority.		Based upon research findings, if needed: fences between Superior Cronese and Fremont Kramer DWMA; Study epidemiology of URTD and other diseases	High priority disease management program; balance priority with habitat conservation.	Same as Alternative A, except special attention to ensure that fences do not restrict OHV opportunities	Same as Alternative D, except disease management program receives very highest priority; little habitat conservation.	Disease research and strategies considered at level of the MOG.
Fencing - Highways	Yes						
Fencing: Urban Interface	Yes				No	Yes	No
Headstarting	Pilot facility -- Fremont-Kramer DWMA.		No program.	Establish at least five sites within three years of plan adoption.	Pilot facility -- Superior Cronese DWMA.	No program.	
Law Enforcement	8 new law enforcement rangers and 8 new maintenance workers assigned to DWMA's, dedicated full-time to natural resources and implementation.		Patrols by law enforcement	Same as Alternative A.	Same as Alt A, except adjust numbers for smaller DWMA.	No adjustment in size of ranger force.	
Ravens	Raven management program. Landfill limits.	Raven management program, public lands only.	Reduce Ravens. Land fill limits	Same as Alternative A.		Very high priority Raven management program; landfill limits	No program.

**Table 2-33
Acreage of Conservation and Incidental Take of Covered Species in Each Alternative.**

	A PREFERRED		B BLM ONLY*		C RECOVERY PLAN		D ENHANCED ECOSYSTEM		E ENHANCED RECREATION		F DISEASE AND RAVEN		G NO ACTION***	
	Cons	Take	Cons	Take	Cons	Take	Cons	Take	Cons	Take	Cons	Take	Cons	Take
Desert tortoise	1,477,630	See text for ITA	1,023,329	454,301 in DWMA. See text for ITA	1,514,847	See text for ITA	1,505,494	4,393 See text for ITA	715,424	4,393 in DWMA. See text for ITA	See text – different approach		DTNA, Cat 1 habitat	Unk.
Mohave ground squirrel	1,701,947	See text for ITA	1,280,106	See text for ITA	1,701,947	See text for ITA	1,701,947	See text for ITA	1,701,947	See text for ITA	1,701,947	See text for ITA	0	Unk.
Alkali Mariposa Lily	Permanent = 3,500+ Interim = 23,810 Isolated sites	40,861	0	40,861	Permanent = 3,500+ Interim = 23,810 Isolated sites	40,861	Permanent = 3,500+ Interim = 23,810 Isolated sites	40,861	Permanent = 3,500+ Interim = 23,810 Isolated sites	40,861	Permanent = 3,500+ Interim = 23,810 Isolated sites	40,861	0**	68,171
Barstow Woolly Sunflower	50,548+	50	17,682+	32,872	50,548+	50	50,548+	50	50,548+	50	50,548+	50	0	Unk., estimated at 32,872+
Bats	All significant roosts	< 25 bats at any one site	All significant roosts	No t limited	All significant roosts	< 25 bats at any one site	All significant roosts	< 25 bats at any one site	All significant roosts	< 25 bats at any one site	All significant roosts	< 25 bats at any one site	Roosts gated on case-by-case basis	Unk.
Bendire's Thrasher*	132,497	3,973	132,497	3,973	132,497	3,973	132,497	3,973	132,497	3,973	132,497	3,973	106,710	29,760
Bighorn sheep	All lambing areas	No individuals; foraging and dispersal habitat	All lambing areas	No individuals; foraging and dispersal habitat	All lambing areas	No individuals; foraging and dispersal habitat	All lambing areas plus one dispersal corridor	No individuals; foraging habitat	All lambing areas	No individuals; foraging and dispersal habitat	All lambing areas	No individuals; foraging and dispersal habitat.	Unk. Case-by-case	No individuals; foraging and dispersal habitat; possible lambing areas
Brown-crested flycatcher	All sites (conditional)	0	All sites (conditional)	0	All sites (conditional)	0	All sites (conditional)	0	All sites (conditional)	0	All sites (conditional)	0	Big Morongo ACEC	Unk.
Burrowing owl	Unk.	No mortality. Limited.	Occurrences on BLM lands	No mortality. Limited.	Unk.	No mortality. Limited.	Unk.	No mortality. Limited.	Unk.	No mortality. Limited.	Unk.	No mortality. Limited.	0**	Unlimited
Carbonate Endemic Plants	5,169	Minimal	4,393	776	5,169	Minimal	5,169	Minimal	5,169	Minimal	5,169	Minimal	0	Unk.
Charlotte's phacelia	All known sites	50	30 of 37 sites	7 sites	All known sites	50	All known sites	50	All known sites	50	All known sites	50	30 of 37 sites	7 sites
Crucifixion thorn	All known sites	50	All known sites	50	All known sites	50	All known sites	50	All known sites	50	All known sites	50	0	Unk.
Desert cymopterus	Most occupied habitat	50	Most occupied habitat	50	Most occupied habitat	50	Most occupied habitat	50	Most occupied habitat	50	Most occupied habitat	50	0	Unk. Estimated at 14,343

	A PREFERRED		B BLM ONLY*		C RECOVERY PLAN		D ENHANCED ECOSYSTEM		E ENHANCED RECREATION		F DISEASE AND RAVEN		G NO ACTION***	
	Prevents and remedies electrocution threat	Unknown but minimized	Prevents and remedies electrocution threat on BLM lands	Potential electrocutions on private lands	Prevents and remedies electrocution threat	Minimized	Electrocution threat minimized for new power lines on BLM lands	Unk.						
Ferruginous hawk	Prevents and remedies electrocution threat	Unknown but minimized	Prevents and remedies electrocution threat on BLM lands	Potential electrocutions on private lands	Prevents and remedies electrocution threat	Minimized	Electrocution threat minimized for new power lines on BLM lands	Unk.						
Flax-like monardella	All (20,495)	0	17,671	Unk.	All (20,495)	Unk.	All (20,495)	Unk.	All (20,495)	Unk.	All (20,495)	Unk.	Unk.	Unk. Minimal
Golden eagle	20,495 at Middle Knob. Prevents and remedies electrocution threat. Minimizes mining impacts.	0	17,671 at Middle Knob. Prevents and remedies electrocution threat on BLM lands	0	20,495 at Middle Knob. Prevents and remedies electrocution threat. Minimizes mining impacts.	0	20,495 at Middle Knob. Prevents and remedies electrocution threat. Minimizes mining impacts.	0	20,495 at Middle Knob. Prevents and remedies electrocution threat. Minimizes mining impacts.	0	20,495 at Middle Knob. Prevents and remedies electrocution threat. Minimizes mining impacts.	0	20,495 at Middle Knob. Electrocution threat minimized for new power lines on BLM lands	0
Gray vireo	15,954+	Unk.	4,393+	Unk.	15,954+	Unk.	15,954+	Unk.	15,954+	Unk.	15,954+	Unk.	0**	Unk.
Inyo California towhee	98% of area (public lands)	2% of area (private lands)	98% of area (public lands)	2% of area (private lands)	98% of area (public lands)	2% of area (private lands)	98% of area (public lands)	2% of area (private lands)	98% of area (public lands)	2% of area (private lands)	98% of area (public lands)	2% of area (private lands)	98% of area (public lands)	2% of area (private lands)
Kelso Creek Monkeyflower*	1,870	50	1,870	Unk. Minimal	1,870	Unk. Minimal	1,870	Unk. Minimal	1,870	Unk. Minimal	1,870	Unk. Minimal	0**	Unk. Minimal
Kern buckwheat	All except <0.1	<0.1	Most occupied habitat	Estimated 5 acres	All except <0.1	<0.1	Unk.	Estimated 10 acres						
Lane Mountain milkvetch	14,597	0	10,164	4,433	14,597	0	14,597	0	14,597	0	14,597	0	Unk.	4,433+
LeConte's thrasher	1,782,892	Unk.	1,392,984	Unk.	1,811,468	Unk.	1,782,892	Unk.	1,521,707	Unk.	48,804+	Unk.	48,804+	Unk.
Little San Bernardino Mountains gilia	All known drainages	50	Sites within JTNP	All other known drainages	All known drainages	50	Sites within JTNP	All other known drainages						
Mojave fringe-toed lizard	42,865+	4 sites, see text	37,270	5,595+	42,865+	4 sites, see text	0	Unk.						
Mojave monkeyflower	57,087	50	36,630	20,457	57,087	50	57,087	50	57,087	50	57,087	50	0	Unk.
Mojave River vole	All sites (conditional)	0	0	Unk.	All sites (conditional)	0	0**	Unk.						
Mojave tarplant	All occupied habitat	50 (new locations)	All occupied habitat	Unk.	All occupied habitat	50 (new locations)	All occupied habitat	Unk.						
Panamint alligator lizard	All suitable habitat	0	All suitable habitat	0	All suitable habitat	0	All suitable habitat	0	All suitable habitat	0	All suitable habitat	0	Most occupied habitat	Minimal
Parish's alkali grass	All of single known site	0	0	Unk.	0	All of single known site	0	Unk.						
Parish's phacelia	898	50	512	376	898	50	898	50	898	50	898	50	0	Unk.

	A PREFERRED		B BLM ONLY*		C RECOVERY PLAN		D ENHANCED ECOSYSTEM		E ENHANCED RECREATION		F DISEASE AND RAVEN		G NO ACTION***	
Parish's popcorn flower	All of single known site	0	0	Unk.	All of single known site	0	Unk.	Unk.						
Prairie falcon	20,495 at Middle Knob. Minimizes mining impacts.	0	17,671 at Middle Knob. Minimizes mining impacts.	0	20,495 at Middle Knob. Minimizes mining impacts.	0	20,495 at Middle Knob. Minimizes mining impacts.	0	20,495 at Middle Knob. Minimizes mining impacts.	0	20,495 at Middle Knob. Minimizes mining impacts.	0	20,495 at Middle Knob. Minimizes mining impacts.	Unk.
Red Rock poppy	All occupied habitat	50	All occupied habitat	Minimal	All occupied habitat	50	Most habitat	Unk.						
Red Rock tarplant	All occupied habitat	50	All occupied habitat	Minimal	All occupied habitat	50	Most habitat	Unk.						
Reveal's buckwheat	All occupied habitat	0	All occupied habitat	o	All occupied habitat	o	All occupied habitat	o	All occupied habitat	o	All occupied habitat	o	All occupied habitat, but no added management.	Minimal
Salt Springs checkerbloom	All of single known site	0	0	Unk.	All of single known site	0	0	Unk.						
San Diego horned lizard	15,954+	Unk.	4,393+	Unk.	15,954+	Unk.	15,954+	Unk.	15,954+	Unk.	15,954+	Unk.	0**	Unk.
Shockley's rock-cress	5,169	0	4,393	776	5,169	0	5,169	0	5,169	0	5,169	0	4,393 but no added management	776
Short-joint beavertail cactus	10,785	50	0	All	10,785	50	10,785	50	10,785	50	10,785	50	Existing SEAs and 1,590 scattered BLM parcels	0**
Southwestern pond turtle	All known sites (conditional at some)	Unk.	Selected sites	Unk.	All known sites (conditional at some)	Unk.	All known sites (conditional at some)	Unk.	All known sites (conditional at some)	Unk.	All known sites (conditional at some)	Unk.	Selected sites	Unk.
Southwestern willow flycatcher	All sites (conditional)	0	All sites (conditional)	0	All sites (conditional)	0	All sites (conditional)	0	All sites (conditional)	0	All sites (conditional)	0	Big Morongo ACEC	Unk.
Summer tanager	Mojave River sites (conditional)	Unk.	Selected sites	Unk.	Mojave River sites (conditional)	Unk.	Mojave River sites (conditional)	Unk.	Mojave River sites (conditional)	Unk.	Mojave River sites (conditional)	Unk.	Selected sites – see text	Unk.
Triple-ribbed milkvetch	All known sites	0	Sites on public land	Unk.	All known sites	0	Sites on public land	Unk.						
Vermilion flycatcher	All sites (conditional)	0	All sites (conditional)	0	All sites (conditional)	0	All sites (conditional)	0	All sites (conditional)	0	All sites (conditional)	0	Selected sites – see text	Unk.
Western snowy plover	All known sites	0	All known sites	0	All known sites	0	All known sites	0	All known sites	0	All known sites	0	Most known sites	Unk.
White-margined beardtongue	All known sites	50	Most known sites	Unk.	All known sites	50	0	Minimal						

	A PREFERRED		B BLM ONLY*		C RECOVERY PLAN		D ENHANCED ECOSYSTEM		E ENHANCED RECREATION		F DISEASE AND RAVEN		G NO ACTION***	
	Unk	Unk	Selected ACECs	Unk	Unk	Unk	Unk	Unk	Unk	Unk	Unk	Unk	Selected ACECs	Unk
Yellow-eared pocket mouse	Unk	Unk	Selected ACECs	Unk	Unk	Unk	Unk	Unk	Unk	Unk	Unk	Unk	Selected ACECs	Unk
Yellow warbler	All sites (conditional)	0	All sites (conditional)	0	All sites (conditional)	0	All sites (conditional)	0	All sites (conditional)	0	All sites (conditional)	0	Selected sites – see text	Unk.
Western yellow-billed cuckoo	All sites (conditional)	0	All sites (conditional)	0	All sites (conditional)	0	All sites (conditional)	0	All sites (conditional)	0	All sites (conditional)	0	Unk.	Unk.
Yellow- breasted chat	Mojave River sites (conditional) 10,785 (Big Rock Creek)	0	Mojave River sites (conditional)	0	Mojave River sites (conditional) 10,785 (Big Rock Creek))	0	Mojave River sites (conditional) 10,785 (Big Rock Creek)	0	Mojave River sites (conditional) 10,785 (Big Rock Creek)	0	Mojave River sites (conditional) 10,785 (Big Rock Creek)	0	Selected sites – see text	Unk.

See also Table 2-11. Unk. = Unknown. * Acreages are for BLM managed lands only

** Los Angeles County may expand its SEA boundaries, providing some conservation for this species.

*** See text for potential conservation of the No Action Alternative. Continued review of projects under CEQA, by BLM in Category 1 habitat, and by FWS in occupied and critical habitat will result in some conservation by provision of compensation lands or set-asides.