4.0 ENVIRONMENTAL CONSEQUENCES

Organization of Analysis

The Analysis of Environmental Consequences is organized, first, by proposal, second by alternative, and third, by category of change or resource element which may be impacted. The proposals are presented in the following order:

1. Adopt standards for public land health and grazing management guidelines in the Planning Area;
2. Identify management actions to recover threatened and endangered (T&E) species:
    a. desert tortoise;
    b. Amargosa vole, three listed riparian obligate birds; and
    c. three listed plants.
3. Identify management actions to promote the conservation of several BLM-designated sensitive bat species
4. Make Multiple-use Class (MUC) decisions for lands released from wilderness consideration and consider Greenwater Canyon Cultural ACEC for deletion based on changes made by the California Desert Protection Act (CDPA);
5. Adopt a off-highway vehicle (OHV) strategy for motorized competitive speed events outside of open areas that includes addressing the Barstow-to-Vegas Race Course;
6. Consider MUC changes to facilitate disposal of existing landfills on public lands in the Planning Area; and
7. Identify potentially eligible rivers on public lands for suitability for inclusion in the National Wild and Scenic Rivers System. This subject is discussed along with watershed, riparian and T&E issues and may be found in the section on the Amargosa vole.

The major categories of change or resource elements to undergo a proposal-by-proposal analysis are listed and analyzed in the order presented below:

Impacts to Vegetation
Impacts to Wildlife
Impacts to Soils, Water and Air
Impacts to Wild & Scenic Rivers
Impacts to Wilderness
Impacts to Cultural Resources
Impacts to Native American Values
Impacts to Wild Horses & Burros
Impacts to Cattle Grazing
Impacts to Recreation Resources and Activities
Impacts to Minerals and Mining
Impacts to Vehicle Access
Impacts to Land Uses
Impacts to Socioeconomic Values

A summary of impacts table is presented, at the end of Chapter 2, to identify which resource values and uses may be impacted and those values and uses that are anticipated to be negligibly impacted by the various alternatives. Critical elements of the environment are asterisked in the table. For values and uses negligibly affected, the existing CDCA Plan analysis is considered adequate. The subsequent analysis in this chapter focuses on values and uses that are potentially affected.

Five animal and three plant species in the Planning Area have been federally-listed as threatened or endangered, had critical habitat designated within the Planning Area since the CDCA Plan was developed, and/or had a recovery plan developed by USFWS. ACECs have been proposed to implement recovery strategies in the critical and other important habitat of these threatened or endangered biological resources (amendments #2 desert tortoise, #5 Amargosa vole, and #6 T&E plants). For the purposes of the following three analyses, impacts are judged to be significantly negative for threatened and endangered (T&E) species if they potentially compromise efforts to recover or maintain the species. Significantly positive impacts are those that promote or enhance the likelihood of recovery in substantial ways.

Impacts for each amendment/proposal are organized so that Alternative 1 “No Action” is discussed first. When there are multiple alternatives, alternative 2 and any other alternatives are arranged in descending order of relative conservation and increasing relative access and/or consumptive and renewable uses emphasis. The agency preferred alternative is identified as such and may be one of the previous alternatives or a combination of alternative actions. The preferred alternative may change as a result of other agency and public review.

Cumulative impacts are discussed briefly under alternatives within affected resource topics (how does this particular alternative contribute to cumulative effects); and they are discussed taken in combination with other past, present, and reasonably foreseeable actions in an analysis at the end of the chapter.

The land tenure (public land ownership pattern) changes proposed under specific alternatives in the NEMO planning effort are considered to have negligible impacts. Therefore land tenure issues within the Planning Area are addressed in their totality, including actions proposed in the NEMO planning effort and those resulting from other past, present and reasonably foreseeable future actions (see appendix N). Impacts are addressed under the cumulative analysis section.

4.1 STANDARDS AND GUIDELINES

Standards describe components of healthy ecosystems, and standards would not cause direct impacts in and of themselves. Standards provide a tool for assessing needs to effectively manage resources and uses. This information may indirectly result in impacts to resources and uses to respond to identified needs. The anticipated impacts discussed for National fallback standards (Alternative 1 No Action) are limited to those related to livestock grazing within allotments. Impacts for regional standards apply to all resources and uses on all public lands; however, impacts from regional guidelines are still limited to livestock grazing since only grazing guidelines have been proposed. Should the BLM develop guidelines for other activities, positive and negative indirect impacts to related resources and uses would be expected. The specific nature of the impacts would be evaluated and reviewed when these specific guidelines are proposed.

4.1.1 ALTERNATIVE 1 (NO ACTION) - Standards and Guidelines

Impacts to Vegetation

General Vegetation: Vegetation within grazing allotments has been affected by implementation of the four National fallback standards. Implementation of the standards has or may result in changes in seasons of use, non-use periods, rotational grazing, manipulation of herds, waters or other range improvements and fencing of sensitive areas where problems are identified. Small portions of Last Chance and South Oasis, two (11%) of the 18 allotments in the Planning Area do not meet the riparian or wetland national fallback standards. There are approximately 200 acres not meeting the standard, and of the 200 acres, 10 acres are in the South Oasis Allotment and 190 acres are in the Last Chance Allotment.

Under this alternative, long-term improvement is expected in the form of an extended period of growth for perennial forage species in response to continued achievement of the native species standard through the current implementation of grazing management practices. The period for plants to recover from cattle consumption is expected to increase. Biomass and vigor would increase for forage plants when the standards are achieved. This increase would result in a corresponding short-term decrease in biomass, seed production, and seedling establishment for those species not currently consumed by cattle. Plant volume for forage species is expected to increase in Creosote bush/white bursage, Creosote bush, and Mojave yucca series. The increase in volume would most likely increase canopy cover. There would be an increase in litter for the series receiving greater rainfall. Over the long-term all perennial plants adjacent to range improvements would increase in volume and vigor.

Substantial growth of plant series or communities is anticipated for those communities that have not reached their potential. Some increase in vegetative diversity for all communities is expected. However, significant increases in diversity are expected in Creosote bush-white bursage and Mojave yucca series. Where communities have the potential, tree and shrub structure is expected to increase and development of trees and

shrubs for appropriate age-class distribution is expected, as well. In the long-term, plant series will reflect achievement of later seral stages. This shift in plant communities would reflect a greater diversity of plants and animals.

Recruitment of perennial species is expected when weather conditions permit. Fire frequency is not expected to change except for prescribed burns utilized to increase perennial species or to improve habitat for special status species.
Short-term impacts would result from construction activities (i.e., small fences, troughs, pipes, storage tanks, corrals, and wells) for spring development or protection of riparian vegetation that increase soil disturbance and noxious weeds at or near the site.

Special Status Plants: Populations of special status plants will benefit similarly to other plants as described for general vegetation. Improvements in conditions that increase plant community diversity will also generally be beneficial to special status plants. The grazing guidelines specifically require the conservation of special status plants. If impacts on a specific special status plants species are identified, special management actions (e.g., grazing exclosure) may be required.

Biological Soil Crusts: It is thought that the low to mid-elevation arid ecosystems in the west developed with low levels of surface disturbance. Crust response to disturbance is highly variable. Biological soil crusts consist of cyanobacteria, green algae, lichens, mosses, microfungi, and other bacteria. Cyanobacterial and microfungal filaments weave throughout the top few millimeters of soil, gluing loose soil particles together and forming a matrix which stabilizes and protects soil surfaces from erosive forces (Cameron 1966: Friedmann and Galun 1974; Friedmann and Ocampo-Paus 1976; Belnap and Gardner 1993). Biological soil crusts reduce wind and water erosion, fix atmospheric nitrogen, and contribute to the soil organic matter, and provide germination sites for vascular plants (Eldridge and Greene 1994). The less it rains the slower the recovery of biological soil crusts. In hot deserts like the Mojave, it can take decades before biotic soils begin to recover. Biological crusts on sandy soils are less susceptible to disturbance when moist or wet. Clay soils are less susceptible to disturbance when crusts are dry.

Crusts may be disturbed by hooves of grazing animals. The crust response to these disturbances is variable depending on soil moisture and depth of hoof action. These allotments have been grazed for over one hundred years, and it is likely that continued light grazing would not make any appreciable additional changes in the biological crust species diversity. Site specific impacts to biological soil crusts may occur. When impacted sites are identified appropriate management action will be taken to protect impacted sites.

Riparian/Wetland: Managing livestock grazing to prevent overuse and to maintain or enhance the condition of riparian-wetland areas is often very challenging. Livestock impacts riparian vegetation both through direct consumption of plant material and trampling. The latter affects vegetation by compacting soil, resulting in reduced infiltration, percolation, root growth, and plant production (Clary 1995; Bryant et al. 1972).

Riparian vegetation degraded by overgrazing generally recovers within a decade once grazing pressure is removed (e.g., Platts and Nelson 1985; Chaney et al. 1993; Nelson et al. 1994). As long as gullying has not lowered the water table, riparian and meadow plants will regrow in a few years if not consumed (Odion et al. 1990). Although complete rest from livestock grazing is one management option for improving riparian areas, other grazing strategies can also result in riparian area improvement (Clary and Webster 1989; Elmore and Kauffman 1994). These include the use of riparian pastures, spring grazing, and attention to stubble height guidelines (with respect to the latter, see also Hall and Bryant 1995).

Under the National fallback standards, riparian species at certain spring sources within the Last Chance and South Oasis Allotments are expected to improve toward meeting and/or maintaining proper functioning conditions. Inside of allotments throughout the Planning Area where standards are currently being met in riparian areas, there would continue to be a reduction in the occurrence of tamarisk in riparian/wetland areas. The structure of trees and shrubs in riparian zones would increase. The width of riparian zones following the area of moisture would increase and vegetative cover from herbaceous plants, shrubs, and trees would increase. The number of age-classes for plants will increase over the long-term. As plant conditions improve, the diversity of plants and animals would increase. There would be a reduction in non-riparian species in potential wet zones.

Short-term impacts would result from construction activities (i.e., small fences, troughs, pipes, storage tanks, corrals, and wells) for spring development or protection of riparian vegetation that increase soil disturbance and noxious weeds at or near the site.
Trends and conditions for riparian/wetland areas outside of allotments would continue to be addressed on a case-by-case basis. Many of the desert spring riparian areas within the NEMO Planning Area have been rated as non-functional or functioning-at-risk (Refer to Appendix J), primarily resulting from water diversion, weed establishment, vehicle use, mining, burro use or livestock grazing. Many riparian riverine segments have similarly been rated as functioning-at-risk due to upstream water use, groundwater overdraft and/or exotic plant (saltcedar or *Tamarix ramosissima*) establishment.

Noxious Weeds: Inside of allotments, there would be a substantial decrease in specific noxious weeds that respond to management techniques. Tamarisk would be reduced in riparian and wetland areas throughout the Planning Area. Reduction of noxious weeds by increased competition from native plants would move plant series to later seral stages. As native plant species increase, plant and animal species diversity would increase.

Short-term impacts would result from construction activities (i.e., small fences, troughs, pipes, storage tanks, corrals, and wells) for range improvements may increase noxious weeds at or near the site.

Trends and conditions for noxious weeds outside of allotments would continue to be managed consistent with the Vegetation Element of the CDCA Plan goals, MUC

guidelines, bureau-wide policies for the protection of riparian areas and control of exotic invasive species and other current policies.

Impacts to Wildlife

The National fallback standards and Guidelines for Grazing Management promote the ecological function and processes necessary to maintain and improve special status species habitats on public lands. Since species are considered in meeting rangeland health standards, livestock grazing practices are designed to promote the conservation and recovery of listed species.

Since native animals, especially insects have evolved with native plant communities, reductions in noxious weeds, such as tamarisk in riparian habitat, and prevention of the introduction and spread of new noxious weeds will aid in increasing or maintaining animal diversity and abundance.

Impacts to Soil, Water and Air Resources

Soil: Erosion rates will continue to decrease for soils in allotments that do not meet standards when corrective actions are taken. These changes occur due to modified grazing practices. Some areas will continue to have unavoidable impacts, such as major watering areas and other range improvements.

Water: Implementing the National fallback standards and guidelines would enhance and strengthen present direction over grazing activities occurring in the planning area. This change in direction would contribute to minor improvement of water quality from natural sources. Results from recent rangeland health assessments found that resource conditions meet the standards in most grazing allotments. Development of prescribed water (water troughs, pipe, and storage tanks) improvements would enhance current conditions by improving cattle distribution.

There would be improvement in hydrologic function resulting in improved water quality. As uplands and riparian improve, peak runoff and overland flow would be reduced and increased riparian vegetation would protect and stabilize adjacent soils. There would be an increase in water infiltration through most soils and a decrease in sedimentation.

Air: Fugitive dust emissions occur due to the soil disturbance as a result of the trampling action of the livestock and from wind erosion on disturbed surfaces when soil moisture levels are low. Small reductions in particulate (PM_{10}) emissions could result from better vegetative cover and reduced wind erosion within grazing allotments that are not meeting standards when corrective actions are taken. Emission rates from areas outside grazing allotments would continue at current rates consistent with current State Implementation Plans for areas of nonconformity. Hydrocarbon and combustion emissions from vehicle activity and grazing operations and hydrocarbon (VOC) emissions from ruminant animals would continue at the current low levels in grazing allotments. No significant off-site impacts are anticipated. The proposed plan doesn't exceed the deminimus emission

levels, is addressed in the State Implementation Plans and is exempt from conformity determination (40 CFR Part 93.153 (iii)) which exempts continuing and recurring activities where activities will be similar in scope and operation to activities currently being conducted. As a result no further conformity analysis or determination is necessary.

Impacts to Wilderness

Managing ecosystem health in accordance with National fallback standards, which pertain to soils, riparian and wetland areas, stream function, and native species, and managing grazing activities in accordance with the fallback guidelines will benefit wilderness resources to the degree that natural conditions are preserved. It is anticipated that managing ecosystem health and grazing activities accordingly will have no adverse impacts to wilderness. Site-specific projects to implement the fallback standards and guidelines will require separate environmental review, including a "minimum tool analysis" which specifies the manner in which projects are to be completed. Projects not conforming to provisions of the Wilderness Act of 1964, the California Desert Protection Act of 1994, and approved wilderness management plans will not be allowed.

Impacts to Cultural and Native American Values

In areas already meeting the four identified indicators under National fallback standards no direct impacts to cultural resources or Native American values would be expected. Maintenance of stream channels and healthy vegetation cover to minimize erosion, compaction, reduction of protective ground cover and other conditions as well as development of springs and seeps can adversely affect cultural resources indirectly. Locating grazing facilities away from riparian-wetland areas whenever they conflict with achieving or maintaining riparian-wetland function has the potential to affect associated cultural resources. Streams and other natural water sources tended to be foci of prehistoric habitation and therefore may contain higher densities of sites that are scientifically important and of concern to Native Americans. Specific actions that may be used to implement the standards, such as ripping, erosion control, removal of non-native plant species, etc. may impact cultural resources and/or Native American values.[1]

Ground disturbing activities would require site specific cultural analysis, which may include survey, recording of sites, identified, determinations of eligibility of sites that will be impacted. Native American values impacts will be analyzed. Mitigation measures will be identified and implemented, if necessary. Avoidance of all sites is preferred.[2]

[1] Inventory data for most of the NEMO area is minimal. The only significant sample inventory available is that done in the 1970s for the California Desert Plan, which constituted a 1% to 2% stratified random sample, an extremely low sample for use in making management decisions. An additional sample inventory was conducted recently for a large portion of the Planning Area in the vicinity of Fort Irwin as a part of the analysis for expansion alternatives. For some portions of the NEMO area archaeological site data is little more than anecdotal. This is true for information on Native American traditional use areas as well.

[2] All potentially impacting activities used to implement public land health standards would be subject to review under Section 106 of the National Historic Preservation Act and requirements to consult with Native Americans under EO for government-to-government relationships, existing protocol agreements with tribes, and other relevant legislation. This review would involve identification of cultural resources or Native American concerns, assessment of significance or

Decisions to mitigate impacts by data recovery instead of avoidance and consequent removal of cultural resources from their context constitutes a residual impact in that rarely is 100% of data collected. Mitigation by data recovery results in a steady loss of a finite resource from its original location, with consequent reduction in interpretive opportunities and the public's ability to view such resources in their natural context. Data recovery may negatively impact traditional Native American values that cannot be mitigated.

Impacts to Wild Horses and Burros

The standards for public land health identify biological and physical parameters as indicators assessing the health, productivity and diversity of habitats. Impacts to wild horses and burros would be common to all alternatives for standards.

Where rangelands are meeting standards, wild horse and burro numbers are in balance with a high level of sustained and reliable forage production. Where it is found that one or more of the standards have not been met due to wild horses and burro impacts, appropriate actions would need to be taken. These actions may include, but are not limited to, removal and placement of wild horses and burros into the National Wild Horse and Burro Adoption Program, fencing, and/or providing additional improvements such as water sources on public lands.

The guidelines for grazing management provide a basis for implementing specific management strategies and prescriptions to meet standards within grazing allotments. Several livestock allotments overlap Wild Horse and Burro HMAs. The guidelines create thresholds of cattle grazing use, which require livestock to be removed from an area when they are reached. Wild horses and burros cannot be similarly moved or restricted unless gathered, which is a time-consuming and complicated process. Despite identification of use problems, these animals may remain or move into an area, contribute to condition decline in these ranges, and ultimately lead to failure to attain standard(s). The CDCA Plan calculated the carrying capacity for the perennial allotments and appropriated Animal Unit Months per animal species (livestock, wildlife, wild horses and burros). It established Appropriate Management Levels for wild horses and burros, which if maintained within 20% of this number, should not exceed the thresholds on grazing or wildlife. If wild horse and burro impacts are found to be a causative factor in failing to meet one or more standards, wild horse and burro gathers are necessitated and the BLM may need to adjust the AML downward.

Impacts to wild horses and burros could result if it is determined that range improvements to promote sustainable livestock management are needed. Negative impacts could result if it is determined that the appropriate action is to construct fence(s) to allow for improved livestock management, which might impact the free-roaming nature of wild horses and burros. Positive impacts could occur if it is determined that the appropriate

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eligibility for listing in the National Register of Historic Places, impacts to Native American traditional values, and determination of the need for avoidance, mitigation, or other measures to protect or retrieve the associated values.

action is to develop water sources within the HMA, which benefit both livestock and wild horses and burros.

The indirect impacts of range improvement projects for livestock management would be assessed during required site-specific analysis. Mitigation for these impacts would be developed at that time, if necessary. For example, if a spring water source utilized by livestock and wild horse and burros is fenced for Proper Functioning Condition reasons, an alternative water supply may need to be provided elsewhere for livestock, wild horses and burros (i.e., piping water from source, creating artificial waters, etc.).

Impacts to Cattle Grazing (and Allotments)

Under this alternative, thirteen (72%) of the 18 grazing allotments (976,060 acres) in the Planning Area have been assessed for rangeland health conditions. (See Table 3-2) It is estimated that the National fallback standards have been met on 16 of the 18 allotments. The fundamentals of rangeland health have been secured for 925,355 acres (95%) of the Planning Area. The South Oasis Allotment did not meet the riparian/wetland standard due to tamarisk invasion, not from cattle impacts. The Last Chance Allotment did not meet the riparian/wetland standard due to cattle trampling vegetation at spring sources. The remaining five allotment will be assessed in the next 12 months and any resource conditions found to not meet the standards would be corrected.

No impacts to grazing management are expected when treating tamarisk infestation in springs for both allotments. There are limited numbers of springs and small populations of tamarisk in South Oasis Allotment that would be spot-treated. Last Chance Allotment is currently not used and short-term improvement of riparian/wetland conditions would continue until resumption of grazing use.

In this alternative, grazing use is expected to continue with a combined strategy of allotment management plans, grazing regulations, activity plans, and mitigation measures specified in the current biological opinions. A few minor range improvements would be necessary to maintain current rangeland health and resource objectives. There may be temporary reductions or shifts in grazing activities in small areas for a limited period to restore soil and vegetative conditions. These options often require the lessee to herd cattle, construct range improvements to control cattle movement, and convert to another class of livestock for better distribution. The lessee is responsible for control and management of livestock while restoration continues. If the remainder of the allotment is not available for grazing use during this period, the lessee would have to remove cattle until conditions are restored or range improvements are constructed.

Impacts to Recreation Resources and Activities

Managing ecosystem health in accordance with National fallback standards and managing grazing activities in accordance with the guidelines for grazing management are not anticipated to appreciably affect opportunities for recreation. Non-motorized activities (i.e., hiking, rockhounding, and horseback riding) at low levels of occurrence

generally result in minor localized impacts to soils, riparian/wetland areas, streams, and/or native species. Although little to no data has been collected regarding such use or associated impacts within the NEMO Planning Area, it is believed that non-motorized recreational activities occur at low levels with negligible impacts. During open hunting season for game species, the Planning Area likely experiences increased levels of recreational use, but not to the degree that requirements to achieve National fallback standards would limit opportunities for hunting or other forms of non-motorized recreation.

Most non-motorized recreational pursuits in the California Desert require the use of motorized vehicles to facilitate access. Under this alternative, impacts to recreation resources and activities could result from closures of access routes. Without vehicular access, the resource remains but the opportunity for use is reduced or eliminated. Significance of impact on the recreation activities in the Planning Area would depend entirely on the routes no longer available for use as a means of access to the public lands. Few, if any, vehicle routes are anticipated to be closed solely on the basis of the application of the fallback standards, thus little impact to recreation resources and activities are anticipated. However, the fallback standards may, on a case-by-case basis, affect management strategies, particularly related to routes in areas being assessed, since all routes fail to meet the standards for soils and hydrology. The standards may become considerations for more active reclamation and/or rehabilitation strategies on closed routes. There are no OHV open areas overlapping grazing allotments so effects to these areas should be negligible under this alternative.

Impacts to Minerals and Mining

There would be no significant impacts to existing or future mining operations or exploratory activity. Current reclamation requirements meet or exceed the standards. Mining is a temporary use and after successful reclamation public land health standards would be achieved.

Impacts to Vehicle Access

Under this alternative, route designation would occur, consistent with CDCA Plan guidance and 43 CFR 8340 et seq. Managing ecosystem health in accordance with National fallback standards will likely affect motorized-vehicle access to the same degree as managing a route network consistent with the route designation criteria in 43 CFR. In accordance with the criteria, routes and trails are to be located to minimize damage to soil, watershed, vegetation, or other resources of the public lands, and to minimize harassment of wildlife or significant disruption of wildlife habitats. These are the same resources addressed by standards and guidelines in managing ecosystem health and grazing activities, respectively. In applying the regulatory criteria, therefore, the parameters established to designate routes of travel could very well mimic the National fallback standards and guidelines for grazing management.

There is no change to the existing management. Opportunities for casual use motorized touring and OHV events could be negatively affected by route designation, but the impacts are not anticipated to be substantial. Due to the low relative density of routes in most of the Planning Area, few routes are likely to be identified for closure.

Impacts to Socioeconomic

Implementation of the Fallback standards has resulted in some minimal indirect socioeconomic impacts. Increased coordination for the short-term with the BLM would directly affect all lessees. However, lessees with cattle operations would be affected over the long-term with minor changes to current grazing activities to meet standards. Changes in management would require additional costs for labor associated with movement and increased supervision of cattle, and over the long-term, increased costs associated with maintenance of additional range improvements. Costs associated with constructing new or replacement range improvements would have to be borne solely by the lessee or through cooperative efforts, costs could be split with the BLM, County, and other contributors to substantially or totally defray all costs. A lessee would incur increased costs for feeding or pasture if cattle are removed from a portion or all of the allotment to achieve standards. However, as rangeland health and forage improves and resource objectives are achieved, greater benefits from more flexibility in grazing operations would be realized for the long-term.

Increased public use of unique or riparian/wetland resources that have greatly improved with achievement of the standards may result in additional revenue to the community from increased public use or visitation of these resources.

4.1.2 Alternative 2 (Preferred) - Standards and Guidelines

Impacts to Vegetation

General Vegetation: Impacts associated adoption of the regional standards are the same as Alternative 1 (No Action). In addition these same benefits to vegetation identified in grazing allotments through the rangeland assessment process can be expected on all public lands.

Special Status Species: The effects of Alternative 2 are similar to Alternative 1. However, since the guidelines are stronger and the standards are more definitive in Alternative 2, greater benefits for special status plants can be expected. In addition these same benefits to special status species identified in grazing allotments through the rangeland assessment process can be expected on all public lands.

Biological Soil Crusts: Impacts are the same as Alternative 1. In addition these same benefits to biological soil crusts identified in grazing allotments through the rangeland assessment process can be expected on all public lands.

Riparian/Wetland: Impacts associated adoption of the regional standards are the same as Alternative 1. In addition these same benefits to riparian/wetlands identified in grazing allotments through the rangeland assessment process can be expected on all public lands.

Noxious Weeds: Impacts associated adoption of the regional standards are similar to Alternative 1. However, since the guidelines are stronger and the standards are more definitive in Alternative 2, greater benefits for plant communities can be expected. In addition these same benefits to plant communities identified in grazing allotments through the rangeland assessment process can be expected on all public lands.

Impacts to Wildlife

The effects of Alternative 2 will be similar to those of Alternative 1. However, since the guidelines are stronger and the standards are more definitive in Alternative 2, greater benefits for wildlife communities can be expected. In addition these same benefits to wildlife identified in grazing allotments through the rangeland assessment process can be expected on all public lands.

Impacts to Soil, Water and Air Resources

Soil: Impacts are the same as Alternative 1. In addition these same benefits to soil identified in grazing allotments through the rangeland assessment process can be expected on all public lands.

Water: The effects of Alternative 2 will be similar to those of Alternative 1. However, since the guidelines are stronger and more definitive in Alternative 2, greater benefits for water quality can be expected, which would apply to all public lands in the Planning Area. These Best Management Practices reduce sedimentation and increase infiltration rates. Both of these are desirable and are positive steps toward solution of the impaired watershed classification on many of the watersheds represented by the NEMO Planning Area.

Air: The effects of Alternative 2 will be similar to those of Alternative 1. However, since the guidelines are stronger and more definitive in Alternative 2, greater benefits for air quality can be expected, particularly in areas not covered by State Implementation Plans, which would apply to all public lands in the Planning Area.

Impacts to Wilderness

Impacts are the same as Alternative 1. In addition these same benefits to wilderness identified in grazing allotments through the rangeland assessment process can be expected in all wilderness areas.

Impacts to Cultural and Native American Values

Impacts are the same as Alternative 1: Because this alternative covers all public lands and not just rangelands, all impacts, both beneficial and adverse, would be spread over a wider area.

Impacts to Wild Horses and Burros

Impacts are the same as Alternative 1. Because this alternative covers all public lands and not just rangelands, all impacts, both beneficial and adverse, would be spread over a wider area.

Impacts to Cattle Grazing (and Allotments)

Impacts to cattle grazing under this alternative are similar to Alternative 1. Standards will be applied throughout the Planning Area. Although attainment of Standards in grazing allotments would have a greater priority, improvement in resource conditions are expected to be shared with areas needing improvement on all public lands.

Impacts to Recreation Resources and Activities

Managing ecosystem health in accordance with Regional standards and managing grazing activities in accordance with the specified regional guidelines would result in the same effects as discussed under Alternative 1 relative to National fallback standards and guidelines for grazing management, except: over the long-term, adoption of this alternative may have greater impacts to OHV areas and recreational vehicle touring outside of existing grazing allotments. Some increased use on dry lakebeds, washes, and trail routes, anticipated in the future as a result of population growth in surrounding communities, could have an adverse effect on soil and air quality, native species, and to a lesser extent, riparian/wetland and stream function.

Mitigation measures which restrict vehicular access may result in adverse impacts to recreation depending on the specific activity pursued and/or the specific location at which such restrictions are imposed. It would have a correspondingly positive impact on non-motorized recreation activities through the enhancement of a more natural environment and trail system such as increased opportunities for wildlife viewing. Overall these impacts are not anticipated to be significant in scope or scale, based on implementation of regional standards for public land health. This is due to the low density of the existing route network in the Planning Area.

Impacts to Minerals and Mining

Impacts are the same as Alternative 1.

Impacts to Vehicle Access

Impacts are similar to Alternative 1: The density of routes and trails brought about through route designation may be lower in MUC "L" under this alternative based on standards for public land health. This will result in somewhat less access, and may have a positive impact on non-motorized recreation activities through the enhancement of naturalness and non-motorized trails. There is one OHV open area, Dumont Dunes, that would be subject to standards for public land health. No guidelines for OHV areas have been developed as of yet, but additional parameters on a site-specific basis may be considered.

Impacts to Socioeconomic

Impacts are similar to Alternative 1, except that some individuals or companies with leases, permits and plans for various land uses with the BLM other than grazing leases may be negatively financially affected on a short-term or long-term basis by implementation of management standards on public lands. For most permittees these standards are not a substantial deviation from existing policies, and impacts are anticipated to be minor. Standards do provide a better basis for enforcement of those policies with more explicit criteria for attainment of them.

Impacts to the general public and surrounding communities within the NEMO Economic Area are indirect and are generally minor, both locally and regionally. In the long-term public lands that meet standards are socioeconomic benefits both for local communities and for regional tourism throughout the entire Planning Area.

4.2 THREATENED AND ENDANGERED SPECIES CONSERVATION: DESERT TORTOISE CONSERVATION AND RECOVERY

This amendment was developed to strengthen the conservation strategy on BLM-managed public lands in California with regard to managing desert tortoise habitat. Alternatives were analyzed with the U.S. Fish and Wildlife Service's 1994 *Recovery Plan for Desert Tortoise (Mojave Population)* recommendations in mind, and included consideration for recovery strategies that are being pursued on adjacent jurisdictions.

In addition, the Desert Tortoise Recovery Plan made several specific management recommendations relative to the compatibility of other uses within the areas proposed for management and recovery of desert tortoise. Those recommendations that are consistent with current management are adopted and considered a part of all alternatives for the purposes of impacts analysis. For Recovery Plan recommendations that are inconsistent with current management direction, a reasonable range of alternatives is analyzed. (Refer to Chapter 7, Figure 6a-6e for a visual representation of identified geographical areas under each alternative)

4.2.1 ALTERNATIVE 1 (No Action) - Desert Tortoise

Impacts to Vegetation

General Vegetation: Existing impacts to vegetation are generally low in tortoise habitat within the NEMO Planning Area, based on rangeland assessments conducted over the past year and a half. Under this alternative the existing impacts to general vegetation and plant communities would not change. On cattle grazing allotments and wild horse and burro management areas, there would be no changes in management systems, stocking rates, season of use or elimination of grazing except as might occur in response to monitoring or rangeland evaluations or in application of requirements in the existing biological opinion on cattle grazing. Continued application of the fallback standards and guidelines on grazing allotments is expected to improve vegetation trend, particularly in areas currently not meeting standards. Continued application of measures in the desert tortoise rangewide policy, desert tortoise statewide policy, and various biological opinions could result in some increase in plant diversity, biomass, cover and seedling survival.

Special Status Plants: No known threatened, endangered or other special status plants have been recorded within critical desert tortoise habitat.

Biological Soil Crusts: It is thought that the low to mid-elevation arid ecosystems in the west developed with low levels of surface disturbance. Crust response to disturbance is highly variable. Cyanobacteria are the most resistant to disturbance, are highly mobile and can recolonize disturbed surfaces rapidly. Lichens vary in resistance based on type. Mosses have a high susceptibility to disturbance. Lichens and mosses are susceptible to

burial. Disturbance results in reduced lichen and moss cover by burial, and cyanobacteria may increase and replace the lichens and mosses decreasing the species diversity. Biological crusts on sandy soils are less susceptible to disturbance when moist or wet. Clay soils are less susceptible to disturbance when crusts are dry. Site specific impacts to biological soil crusts may occur. When impacted sites are identified appropriate management action will be taken to protect impacted sites.

Riparian/Wetland: There are no impacts to riparian or wetland areas associated with Alternative 1 for desert tortoise conservation and recovery.

Noxious Weeds: There are some positive impacts to the control of noxious weeds associated with Alternative 1 based on on-going efforts to control non-native invasive species on public lands. These efforts are not specifically associated with desert tortoise conservation and recovery, but do support Alternative 1 of standards and guidelines.

Impacts to Wildlife

General Wildlife: Within tortoise habitat of the NEMO Planning Area, impacts to wildlife populations are generally low. Impacts from Interstate Highways (I-15 and I-40) and other major highways (e.g., Highway 95) can be expected to continue. Within tortoise habitat areas, no local or regional strategies have been identified for wildlife other than desert tortoise. Although positive benefits may be derived from the BLM-wide bighorn sheep strategy and upland gamebird strategy and existing ACEC plans covering small portions of tortoise habitat, most wildlife management efforts consist of minimizing the effects of conflicting activities and mitigating projects. There is no existing monitoring of wildlife in tortoise habitat areas except for desert tortoise.

Special Status Animals: All critical and Category I desert tortoise habitat is MUC "L" except for the western portion of Shadow Valley (38,753 ac.), a portion of northern Ivanpah Valley (5,929 ac.), and a portion of Piute-Fenner Valley (3,960 ac.). These latter three areas are MUC "M". All Category I habitat units in the NEMO Planning Area have utility corridors designated in the CDCA Plan, and in the coming years construction of new and maintenance of existing transmission lines, pipelines, and fiber-optic cables will continue in these corridors. Tortoise populations are suppressed along and fragmented by Interstate highways and other paved roads that border or cross all Category I habitat units in the Planning Area. Other important factors affecting tortoise populations in the NEMO Planning Area include raven predation on hatchling and juvenile tortoises and diseases (e.g., upper respiratory tract disease and several shell diseases). For a discussion of other activities and natural processes currently affecting tortoise populations, see *Current Desert Tortoise Management Situation in BLM-Administered Lands in Portion of Northern and Eastern Mojave Planning Area* (Foreman 1998).

The effects of these and other activities (e.g., disease, raven predation, fire, and introduction of alien plants) result in natural processes that are not functioning properly and are addressed in BLM's Rangewide Tortoise Management Strategy and BLM's California Statewide Tortoise Management Policy. These documents guide BLM's

tortoise management based on tortoise habitat categories (see Chapter 3). The CDCA Plan also provides multiple use classes with guidelines and elements addressing specific uses. This land management backdrop provides overall protection for resources, including the desert tortoise, in the NEMO Planning Area.

Under this alternative, most Federal actions that may affect the desert tortoise or any other future listed species, would receive review by USFWS through the consultation process on a case-by-case basis. Specific projects receive review by USFWS under the consultation procedures defined in the Endangered Species Act. USFWS provides a biological opinion that includes measures jointly developed by USFWS and BLM to limit the effects on tortoise populations and tortoise habitat. Some projects or activities on public lands are already covered by programmatic biological opinions - cattle grazing, small mining operations, small disturbances, and dual-sport motorcycle events - and would not require additional consultation on a case-by-case basis. Local predator (e.g., ravens) control activities may occur on a case-by-case basis after appropriate environmental documentation.

Impacts to Soil, Water and Air Resources

Soil: Soils would not be affected by Alternative 1 for desert tortoise conservation and recovery except as identified in 4.1.1, implementation of fallback standards.

Water: Water quality and quantity would not be affected by Alternative 1 for desert tortoise conservation and recovery except as identified in 4.1.1, implementation of fallback standards.

Air: Air Quality would not be affected by Alternative 1 for desert tortoise conservation and recovery except as identified in 4.1.1, implementation of fallback standards.

The no action alternative does not exceed the deminimus emission levels, is addressed in the SIPs and is exempt from conformity determination {(40 CFR Part 93.153 (iii)} which exempts continuing and recurring activities where activities will be similar in scope and operation to activities currently being conducted. As a result no further conformity analysis or determination is necessary.

Impacts to Wilderness

None of the actions specific to recovery of the desert tortoise as proposed in the NEMO Plan under this alternative will adversely affect wilderness resources. Site-specific projects to facilitate recovery of the desert tortoise will require separate environmental review, including a “minimum tool analysis” which specifies the manner in which projects are to be completed. Projects not conforming with provisions of the Wilderness Act of 1964, the California Desert Protection Act of 1994, and approved wilderness management plans will not be allowed.

Impacts to Cultural and Native American Values

There would be no change from current management practices. Impacts to cultural resources could occur, particularly at known sites near water sources within areas that are subject to intensive use by wild horses, burros and cattle. Potential for impacts to cultural resources on lands zoned MUC "Moderate" will continue to be the same as under current management practices. Site-specific analysis would occur prior to ground disturbing activities, and any data recovery may result in additional impacts to cultural resources.

Impacts to Wild Horses and Burros

Utilize existing CDCA Plan management and the existing East Mojave HMA Plan to manage an "AML" of 44 burros within desert tortoise habitat, including those within critical and Category I desert tortoise habitat. The management of wild burros would continue to integrate fallback standards and guidelines for grazing management within the Planning Area, consistent with Federal regulations for rangeland reform.

A Clark Mountain HMAP will be developed incorporating: standards and guidelines, consistent with Federal regulations for rangeland reform; implementation of maximum utilization levels on key forage species prescribed in Appendix E for desert tortoise habitat; habitat monitoring guidelines; population census; removals; the development of natural and artificial waters to relieve pressures of some critical waters and aid in the distribution of burros; erect permanent trap sites to aid in population control; and other range improvements required specifically to promote desert tortoise conservation and recovery (See Appendix E).

Under the current situation live trapping methods which include helicopter assisted removals or water trapping will be used to continue to remove wild burros from the eastern portion of the Clark Mountain Herd Area until their populations are eliminated in the eastern portion of the HMA. Continued removals will occur within the HMA until the overall AML is achieved. These removed burros will no longer add to the genetic diversity of the species, especially in those ranges, which are completely removed. Burros gathered in the trapping process may experience some stress. The helicopter removal related stress factors are in the form of the distance animals travel, condition of animals, terrain, physical barriers, weather and if roped, the process of being led into the holding pen. The water trapping method is the least stressful to the burro; the animal may become agitated when it can't get out of the trap and when they are being loaded on to the trailer.

Once the burros are transported to the Ridgecrest Wild Horse and Burro Holding Facility, they are vaccinated, wormed, freeze branded, tested for Equine Infectious Anemia and given any medical treatment needed prior to being placed up for adoption which typically takes four to six weeks. Burros removed from their natural environment adjust well to domestication. Burros are adopted for use as pack animals, riding, pulling carts or wagons, guard animals for livestock, and as pets. At the present time, the BLM’s National Wild Horse and Burro Adoption Program is the only method available for

population control and disposition of excess wild horses and burros removed from the public lands.

Under current management there is a risk of inbreeding and reducing genetic diversity of the wild burro population when specific phenotypes or physical characteristics are selectively managed for, and when the adult population is less than 50 animals.[3] This impact can be mitigated by the periodic introduction of healthy animals from other herd areas with similar habitats to herds whose genetic diversity may be at risk. Tissue or blood samples can be analyzed to help determine if there is a need to introduce new animals.

Consultation with the U.S. Fish & Wildlife Service would occur, upon which additional terms for management prescriptions may be required which may impact wild burro herds and/or burro management. These prescriptions would be incorporated into the HMAP.

Managing wild burros under the fallback standards should achieve an ecological balance within the HMA. There may be impacts to wild horses and burros found to be causative in not achieving one or more of the standards. The nature of these impacts is beyond the scope of this plan and would be addressed in the Clark Mountain HMAP.

Impacts to Cattle Grazing (and Allotments)

Under this alternative grazing use would continue through direction provided by the grazing regulations, CDCA Plan, allotment management plans (AMPs), monitoring, determinations, and biological opinions for grazing activities in desert tortoise habitat. The maximum average level of grazing use is prescribed in the CDCA Plan and there have been very few requests for grazing use above that level through temporary non-renewable authorizations. Allotment classification for ephemeral use has been infrequent, even for the Piute Valley Allotment, which is strictly classified for such use.

Livestock producers have been voluntarily reducing stocking rates for much of the 1990's. The eastern Mojave Desert has been dry and forage conditions have been poor. The biological opinion for grazing activities in desert tortoise habitat has restricted grazing use to some degree in several allotments. For example, grazing use of ephemeral forage cannot occur until there is 350 pounds per acre of ephemeral forage. The BO also directs grazing periods for certain allotments and the turning off of water sources while not used by cattle. Based on the status of the desert tortoise, assessment of standards and other changes on the ground, many of the AMPs written in the 1980's are being revised.

The 1998 Plan Amendment for Grazing Allotments allowed grazing use on Granite Mountain and Lanfair Valley Allotments to be voluntarily canceled by the lessee based on third-party buy-out provisions and have been terminated. This cancellation process amends the CDCA Plan by removing the designation of the allotments, their forage

[34.] Ian Robert Franklin, "Evolutionary change in Small Populations" Conservation Biology 1980

allocations, and cancellation of authorizations for range improvements. It is unknown whether this option will be exercised on other allotments, but it remains a potential opportunity, which could lead, to substantial decreases in the East Mojave over the long-term.

Impacts to Utilities

The protection of the desert tortoise will not have a significant new impact on the existing corridors. There may be parameters on how utilities are developed within desert tortoise habitat based on the quality of the habitat and other factors that have been identified.

Impacts to Recreation Resources and Activities

Recreational uses that adversely affect listed and sensitive species or other significant wildlife resources face modifications. Most recreational activities occurring in critical habitat are either casual use activities, or take place in conjunction with existing programmatic consultations with wildlife agencies that set parameter on uses.

Generally, actions under this alternative do not appreciably affect opportunities for recreation within the NEMO Planning Area, especially those which do not directly involve the use of motorized vehicles. However, without vehicular access, the recreational resource remains but the opportunity for use is reduced or eliminated consequent to designating specific routes of travel as "limited" or "closed". To the degree that route designation process limits access or precludes motorized activities in certain areas within designated critical desert tortoise habitat, opportunities for recreation will be affected (See Chapter 7, Figures 4a-b-c for proposed route networks in critical habitat). On the other hand, management actions and route approvals may enhance natural areas for human enjoyment.

Currently, stopping, parking, and vehicle camping is allowed within 300 feet of centerline of routes of travel except in sensitive areas. Under this alternative stopping, parking and camping rules would be unchanged.

Impacts to Minerals and Mining

There would be no change in tortoise compensation payments, or in the existing management. The mitigation for minerals and mining impacts will continue consistent with Category I Tortoise Habitat guidelines. The mitigating measures for mineral related operations would be unchanged. For no action, mitigation is based on case-by-case assessments in the environmental documents prepared for specific actions, except for small mining activities covered under the programmatic consultation (under ten acres). Mitigation is available in the 3809 regulations for prevention of unnecessary and undue degradation and from measures resulting from consultation with the U.S. Fish and Wildlife Service. In general, these consist of compensation for lost habitat, fencing, seasonal use restrictions, tortoise training programs, field contact representatives,

designated biologists for tortoise surveys, qualified biologists for handling tortoises, and speed limits for vehicles.

Impacts to Vehicle Access

Under this alternative, route designation would occur, consistent with CDCA Plan guidance and 43 CFR 8340 et seq. Opportunities for casual use motorized touring and OHV events could be negatively affected by route designation, but the impacts are not anticipated to be substantial. Due to the density of routes in critical habitat, relatively few routes are identified for closure as compared with other areas of the CDCA that have undergone route designation. There are no MUC intensive (I) areas that would be affected.

4.2.2 ALTERNATIVE 2 - Desert Tortoise

Impacts to Vegetation

General Vegetation: Management under this alternative would have the greatest net positive affect on vegetation. Efforts to maintain and enhance habitat and rehabilitate disturbed areas, where feasible, would receive increased emphasis. These efforts would be consistent with regional standards, with BLM revegetation and rehabilitation standards, and occur in conjunction with fire rehabilitation, project-specific mitigation measures, and habitat monitoring activities.

Elimination of burros from the Clark Mountain HMA would result in increased above ground biomass, reproductive capability, and plant vigor. Increased numbers of immature plants would successfully be established, making more plant material available for litter. An upward trend in vegetation condition, representing a progression from one condition class to higher class (i.e., from mid-seral stage to late seral stage). Revegetation of trails and congregation areas would occur.

Similarly, where grazing is eliminated from the four proposed ACECs, plant composition would change. Biomass of cattle forage species (e.g., perennial grasses) would increase, possibly at the expense of non-forage species as the plant species community readjusts. Denuded and disturbed areas at and around troughs and corrals would restore naturally over time.

Measures in the desert tortoise strategy (Appendix A) together with the limit on new surface disturbance would reduce disturbances to the vegetation.

Special Status Plants: No known threatened, endangered or other special status plants have been recorded within critical desert tortoise habitat.

Biological Soil Crusts: Impacts to biological soil crust are the same as Alternative 1 except the cancellation of cattle grazing and the elimination of the Clark Mountain Herd

Management Area will further decrease the amount of disturbance to biological soil crusts.

Riparian/Wetlands: Impacts are similar to Alternative 1 except modest long-term benefits can be anticipated as a result of the closure of all washes.

Noxious Weeds: The Impacts are similar to Alternative 1. There may be some additional benefits from efforts to enhance habitat and rehabilitate surface disturbances including closed routes.

Impacts to Wildlife

General Wildlife: Benefits to wildlife populations would occur primarily in the ACECs where burro and cattle grazing would be removed. Benefits of these two actions would reduce competition for forage, trampling of animal burrows, reduction in disturbed areas on trails and at watering sites. Various measures in the Desert Tortoise Conservation Strategy (Appendix A) together with route designation and decreased parking and camping distances off routes would reduce habitat loss. To the extent that the raven management strategy is effective in reducing raven populations in desert communities, raven depredations on lizard and bird populations, if any, would be reduced. Fencing of Interstate and other major highways would reduce mortality of populations of lizards, snakes, and small rodents along those highways.

Special Status Animals: This alternative would have the greatest benefit to the federally and State threatened desert tortoise. The four ACECs would encompass about 354,300 acres. Measures in the tortoise strategy (Appendix A) would reduce habitat disturbance and direct mortality of tortoises. For example, route designation in the ACECs would reduce the area of disturbance and limit the spread of noxious weeds. Reducing the parking and camping distance from 300 to 50 feet would limit habitat disturbance and reduce the risk of running over tortoises. The closure of all washes within DWMAs would decrease the likelihood of take through direct or indirect means and loss of some of the most important habitat in times of stress.

Removal of burros from the Shadow Valley HMA and cattle grazing from the ACECs would have a beneficial impact on desert tortoise by promoting burro and cattle forage species, many of which are also tortoise forage. A greater amount and variety of forage would be available for desert tortoise, thus improving nutrition and lowering susceptibility to upper respiratory tract and shell diseases. Cover providing protection from the elements and from predators would increase, resulting in reduced mortality. Over the long term, increased juvenile tortoise recruitment rates would aid in the recovery of the tortoise.

Although raven predation is not known to be unusually high in the NEMO Planning Area, implementation of a raven management program would potentially reduce raven predation on hatchling and juvenile tortoises and would aid tortoise recruitment. Fencing

of Interstate and other major highways would reduce animal roadkills that provide food for ravens; elimination of this food source would aid in controlling raven populations.

Tortoises are killed as they attempt to cross major highways. Fencing of Interstate and other major highways will reduce tortoise mortality. Elimination of this mortality factor will allow restoration of depleted tortoise populations adjacent to these corridors. Increased emphasis on monitoring would allow more efficient responses to population declines and changes in age structure. No other special status animals would benefit appreciably.

Impacts to Soil, Water and Air Resources

Soil: This alternative would result in less surface disturbance which should result in reduced erosion rates for those areas within the 354,300 acres of the Desert Wildlife Management Areas. This would include a six-fold decrease in the areas susceptible to soil compaction and damage from stopping, parking and camping, based on the proposed change from 300 feet to 50 feet.[4] Areas outside the DWMAs would continue the current condition and trend.

Water: Impacts would be similar to Alternative 1. Water quality and quantity would not be affected by adoption of Alternative 2 for desert tortoise conservation and recovery, except as identified in 4.1.2, implementation of regional standards for public land health.

Air: Impacts would be similar to Alternative 1. Air quality would not be affected by adoption of Alternative 2 for desert tortoise conservation and recovery, except as identified in 4.1.2, implementation of regional standards for public land health.

Impacts to Wilderness

Impacts are the same as Alternative 1 except actions specific to recovery of the desert tortoise to eliminate cattle grazing and burro management in Shadow Valley ACEC under this alternative will result in beneficial impacts to wilderness values primarily north of the Boulder Corridor.

Impacts to Cultural and Native American Values

Negative impacts to known and undiscovered cultural resources, in particular those associated with existing water resources, would decrease with the removal and relocation of wild horse and burro populations. Permanent retirement of the cattle grazing allotments in the proposed DWMAs would have a similar result. The generally reduced levels of activity that would be expected to occur within the DWMAs would be beneficial to known and undiscovered cultural resources and Native American values. Limiting surface disturbance would reduce impacts from some existing activities to an unknown number of cultural resources. There will be a beneficial impact to cultural resources within those lands changed from MUC M to L because any mining-related operation

[4] See page 4-85 of the 1982 plan amendments to the CDCA Plan DEIS.

other than Casual Use would require an approved Plan of Operations prior to conducting any surface-disturbing activity in these areas.

Site-specific management practices to implement recovery, such as fencing along major traffic corridors and route rehabilitation may impact prehistoric or historic archaeological resources. Site-specific analysis would occur prior to ground disturbing activities. Data recovery may result in additional impacts to cultural resources, due to the loss of the artifacts from their original location.

Impacts to Wild Horses and Burros

This proposed action would eliminate the Clark Mountain designated herd management area. The AML and forage allocation for burros in Shadow Valley would be zero. Burros would be completely removed from the Shadow Valley ACEC for the conservation of the desert tortoise, and the eastern portion of Clark Mountains per the existing HMAP. All burro removal and adoption impacts would be the same as Alt 1.

Impacts to Cattle Grazing (and Allotments)

This alternative affects six grazing allotments within the four ACECs in the two DWMAs proposed for conservation of the desert tortoise. Under this alternative Jean Lake, Kessler Springs, and the Piute Valley (ephemeral) Allotments will be terminated because they completely fall within the Ivanpah Valley and Piute-Fenner Valley DWMAs. Substantial portions of the Clark Mountain, Valley View and Valley Wells Allotments that overlap the DWMAs will be terminated and the forage allocations in the allotments will be reduced. The other allotments are not affected by the actions of this alternative and would be treated the same as the No Action Alternative. The overall impacts of this alternative would be the complete elimination of grazing on three of the six allotments with acreage in DWMAs, and a 75 percent anticipated loss of use on the other three allotments (refer to Table 4-1).

Table 4-1 Impacts to Grazing Allotments from Alternative 2

Allotments	Names of DWMA Unit	Acres in DWMA	Direct Loss of AUMs	Anticipated Loss of Use	AUMs Available
Clark Mtn.	North Ivanpah Valley	27,280	419 [28%]	419 [28%]	884
Jean Lake	Ivanpah Valley	9,806	300 [100%]	300 [100%]	0
Kessler Spgs.	Ivanpah Valley	13,760	481 [100%]	481 [100%]	0
Piute Valley	Piute-Fenner Valley	20,219	NA	NA	0
Valley View	Ivanpah Valley	11,245	289 [34%]	289 [34%]	560
Valley Wells	Shadow Valley	107,072	1,917 [44%]	4,272 [100%][5]	0

[5] Because the DWMA covers the length and width of Shadow Valley, all but the most expensive options for fencing and water development are dramatically reduced and the entire Valley Wells allotment is considered no longer viable.

Impacts to Utilities

Impacts would be similar to Alternative 1 except for major linear utilities in the corridors, which may be subject to additional mitigation and analysis to limit surface disturbance under the programmatic biological opinion. There are unlikely to be substantial parameters based on the cumulative disturbance limitations for the reasonably foreseeable future.

Impacts to Recreation Resources and Activities

Under Alternative 2, new surface disturbances from all activities including authorized recreational activities will be limited. Generally, actions under this alternative do not appreciably affect opportunities for recreation within the NEMO Planning Area, especially those which do not directly involve the casual use of motorized vehicles. Application of the route designation criteria as proposed to conserve special status species and natural communities will result in minor impacts to vehicular access, and therefore, to recreation. Localized restrictions to vehicular access will occur, but the network of routes available for casual motorized use will continue to provide reasonable access throughout the Planning Area.

This means that some changes to the manner is which certain recreational activities are pursued will be required. For instance, vehicular access is currently allowed in all navigable washes. Upon application of the regulatory criteria, access in washes will no longer be permitted. This will probably have the greatest impact on hunters particularly during authorized game seasons. Those less able to walk will also be constrained by any limitation to access, but ample opportunity still exists for the recreational experience. Currently, stopping, parking, and vehicle camping is allowed within 300 feet of routes of travel. Limiting these activities to within 50 feet of a route centerline under Alternative 2 will affect opportunities for such activities. The rationale for changing the distance from 100 feet to 300 feet (CDCA Plan amendment, 1982) was to allow for Recreational Vehicle camping in a circle, not a line. This is not a major impact in the Planning Area given the low levels of group camping use.

For many areas, signs will be posted soliciting the cooperation of casual visitors. In some cases, fencing may be utilized to prevent unintentional impacts. In addition, interpretive signing and informational kiosks will promote visitor use of the various areas consistent with management objectives for on-site visitors.

Impacts to Minerals and Mining

Under this alternative, 48,642 acres of land would be reclassified from MUC M to L. This is approximately fourteen percent (14%) of the area involved. Any mining related activity proposed for these areas, other than casual use, would require an approved Plan of Operations prior to conducting surface disturbing activities. Proposed ACEC management prescriptions would also restrict surface disturbing activities during the tortoise active season by limiting operations or requiring tortoise-proof fencing. These

measures are similar to existing mitigation strategies on MUC L lands and all mining over five acres. These impacts would affect mining activities of five acres or less in the current MUC M area by increasing permitting time and costs (See Appendix K for a discussion of the administration of Notices and Plans of operation).

The proposed ACEC management plan would establish a one- percent (1%) ceiling for cumulative surface disturbance, except for those related to Interstate and major highway improvements. Reclaimed lands would be credited as undisturbed lands. Cumulative disturbance in each of the four proposed ACECs since approval of the CDCA plan in 1981 is estimated to be less than one percent (1%). This limit on surface disturbance would have no effect on mining operations if the cumulative surface disturbance remains below one percent (1%). If the one percent (1%) threshold is reached, the ACEC management plan would require an amendment, or consultation with USFWS would be required and a non-jeopardy decision rendered before any new disturbance could be approved. There are unlikely to be substantial parameters based on the one-percent cumulative disturbance limitations for the reasonably foreseeable future.

Within the proposed Piute-Fenner DWMA, there are approximately 2,700 acres of land with high potential for discovery and development of an open-pit heap leach gold mining operation that would be subject to the one- percent threshold. Within the Ivanpah Valley unit nearly 5,000 acres of land contain moderate potential for development of known sodium chloride resources beneath Ivanpah Dry Lake which would not be substantially restricted by the one percent (1%) ceiling.

The current programmatic biological opinion for small mining allows BLM to process mining actions less than ten acres without further USFWS consultation. This alternative would allow BLM to process mining actions without further consultation with USFWS for operations up to 100 acres in size and could expedite the approval process for these operations if an EIS is not determined to be necessary.

Impacts to Vehicle Access

Impacts to vehicle access are the same as Alternative 1 except for the designation of all washes as Closed and routes where specific criteria have been applied to meet desert tortoise DWMA goals and objectives (see appendix A). This would have low to moderate effect on technical four-wheel drive enthusiasts, hunters and those participating in mining exploratory activities, based on the low density of washes on the existing route network (1979 maps).

4.2.3 ALTERNATIVE 3 - Desert Tortoise

Impacts to Vegetation

General Vegetation: Beneficial impacts would be similar to Alternative 2 but somewhat less. The area covered under this alternative would be 29,110 acres less, and elimination of grazing would not occur except on one infrequently used ephemeral allotment.

However, new limitations on forage for spring cattle turn-out would result in increased above-ground biomass reproductive capability and plant vigor during this essential growing period. Burros would be removed from the Shadow Valley ACEC and critical habitat but not from the entire Clark Mountain HMA. The parking and camping restriction would be 100 feet compared to 50 feet in Alternative 2 resulting in increased potential for destruction of vegetation.

Special Status Plants: Impacts are the same as Alternative 2.

Biological Soil Crusts: Impacts are the same as Alternative 1 except the modification of the Clark Mountain HMA will further decrease the amount of disturbance to biological soil crusts. This will be somewhat offset by increased surface disturbance within the new boundaries of the modified HMA.

Riparian/Wetland: Impacts are the same as Alternative 1.

Noxious Weeds: Impacts are the same as Alternative 2.

Impacts to Wildlife

General Wildlife: Beneficial impacts would be similar to those described for Alternative 2 but over a smaller (by 29,110 acres) area and with fewer reductions in burro and cattle use (see the discussion on General Vegetation above.)

Special Status Animals: Beneficial impacts would be similar to those described for Alternative 2 but over a smaller area and with fewer reductions in burro and cattle use. (See the discussion on General Vegetation above.).

Impacts to Soil, Water and Air Resources

Soil: Impacts are similar to but less beneficial than alternative 2. This alternative would result in less surface disturbance which should result in reduced erosion rates for those areas within the 325,190 acres in three ACECs within two DWMAs. This would include a three-fold decrease in the area susceptible to soil compaction and damage from stopping, parking and camping based on the proposed change from 300 feet to 100 feet. Areas outside DWMAs would continue the current condition and trend.

Water: Impacts are the same as Alternative 2.

Air: Impacts are the same as Alternative 2.

Impacts to Wilderness

Impacts are similar to Alternative 2 except some grazing may still occur in wilderness areas but parameters on minimum forage requirements will still result in substantial benefits to the natural character of wilderness.

Impacts to Cultural and Native American Values

Impacts would be similar to Alternative 2 with the exception of the identified positive benefits to known and undiscovered cultural resources and Native American values would not occur within the Northern Ivanpah Valley area and would not include decreased impacts associated with the elimination of cattle grazing. Positive impacts from changing MUC "M" to "L" will be essentially the same as Alternative 2 with 5,929 acres less changed from M to L so fewer known and undiscovered cultural resources will benefit.

Impacts to Wild Horses and Burros

Impacts would be similar to Alternative 1, but the designation of the Clark Mountain HMA on the eastern portion of the Clark Mountain Herd Area outside of desert tortoise critical habitat would affect fewer animals and a viable HMA would remain in the Clark Mountain area. Impacts to wild burros in the western portion of the Herd Area (current Clark Mountain HMA) would be in the form of complete removal through live trapping methods. All burro removal and adoption impacts would be the same as Alternative 1.

Impacts to Cattle Grazing (and Allotments)

This alternative affects five grazing allotments within the three ACECs in the two DWMAs proposed for conservation of the desert tortoise. Under this alternative Piute Valley Allotment will be terminated because it is ephemeral. Substantial portions of the Valley View, Jean Lake, Kessler Springs and Valley Wells Allotments which overlap the DWMAs will have minimum forage allocations (230 pounds air dry weight per acre) for spring grazing to occur. The other allotments are not affected by the actions of this alternative and would be treated the same as the No Action Alternative. The overall impacts of this alternative could be to preclude grazing from portions of the four allotments in some years and the complete elimination of grazing on the Piute Valley (grazed two years of the last twenty) allotment with acreage in DWMAs. The Clark Mountain allotment would not be affected.

The overall impacts of this alternative would likely be substantial changes to grazing on three allotments with acreage in DWMAs (refer to Appendix E for proposed stipulations) and the elimination of the Piute Valley allotment.

Impacts to Utilities

The impacts are similar to Alternative 1. Utilities within the corridors are exempt from the acreage limitations for site-specific surface disturbance identified in the Desert Tortoise Conservation Strategy under this alternative. There are unlikely to substantial parameters based on the cumulative surface disturbance limitations for the reasonably foreseeable future.

Impacts to Recreation Resources and Activities

Impacts are similar to Alternative 2, but the reduction in stopping, parking and camping distance would be 100 feet rather than the 50 feet limitation in Alternative 2. This would lessen potential impacts on recreational visitors particularly those with large recreational vehicles.

Impacts to Minerals and Mining

Impacts are similar to Alternative 2, except that 42,713 acres would be reclassified from MUC M to L rather than 48,642 acres. Cumulative disturbance would be the same as Alternative 2 (1%) as would the impacts. Consultation limits within the Piute-Fenner, Ivanpah and Shadow Valley ACECs would be 100 acres, and as with Alternative 2 this would expedite the approval process for operations up to that size provided an EIS is not determined to be necessary.

This alternative would also convert 42,695 acres of BLM Category I Habitat to Category III Habitat outside DWMA boundaries, which would result in fewer restrictions and less compensation for activities. In addition, mining activities under 100-acres in desert tortoise habitat would not require further consultation with USFWS.

Impacts to Vehicle Access

Impacts would be similar to Alternative 2 except limitations on access to washes would be less than Alternative 2 since major washes could be designated Open or Limited and available for vehicular use consistent with the criteria (see Appendix A).

4.2.4 ALTERNATIVE 4 - Desert Tortoise

Impacts to Vegetation

General Vegetation: Beneficial impacts to maintain and enhance habitat and rehabilitate disturbed areas would be similar to Alternative 3 but over 114,060 acres less (i.e., deletion of Shadow Valley unit). As in Alternative 1, burros would not be removed from Shadow Valley or from the entire Clark Mountain HMA; impacts of burros on vegetation would remain. Impacts from cattle grazing would be the same as Alternative 1 except that grazing would be eliminated from one infrequently used ephemeral allotment.

Special Status Plants: Impacts are the same as Alternative 2.

Biological Soil Crusts: Impacts are the same as Alternative 1.

Riparian/Wetland: Impacts are the same as Alternative 1.

Noxious Weeds: Impacts are the same as Alternative 2.

Impacts to Wildlife

General Wildlife: impacts are similar to Alternative 3 but over a smaller area and with continued effects of burro trailing and grazing in Shadow Valley. (See the discussion on General Vegetation above.)

Special Status Animals: Beneficial impacts to the desert tortoise would be similar to those described for Alternative 3 but over a smaller area and continued effects of burro trailing and grazing in Shadow Valley. (See the discussion on General Vegetation above.)

Non-lethal control of ravens (mitigation, sanitation, etc.) will help in the control and proliferation of ravens, but there is still the potential that some ravens will continue to be selective on juvenile tortoises. Limiting the removal of such ravens through non-lethal means will be largely ineffective and may adversely affect the recovery of the species.

Impacts to Soil, Water and Air Resources

Soil: Impacts are similar to but less beneficial than alternative 2. This alternative would result in less surface disturbance which should result in reduced erosion rates for those areas within the 211,130 acres in two ACECs within two DWMAs. This would include no change from Alternative 1 in the area susceptible to soil compaction and damage from stopping, parking and camping. Areas outside DWMAs would continue the current condition and trend.

Water: Impacts are the same as those in Alternative 2.

Air: Impacts are the same as those in Alternative 2.

Impacts to Wilderness

Impacts are the same as Alternative 1.

Impacts to Cultural and Native American Values

Impacts are similar to Alternative 2 with exception that burro removal would not occur in Shadow Valley and therefore the negative impacts to cultural resources at and near existing water sources used by clustering burro populations would continue. Positive impacts from changing MUC M to L will be substantially less than Alternative 2, with sites on 3,960 acres rather than 48,642 acres benefiting.

Impacts to Wild Horses and Burros

Impacts would be the same as Alternative 1

Impacts to Cattle Grazing (and Allotments)

This alternative is the same as Alternative 1 (No Action) except**:** Cancellation of ephemeral portions of AUMs will result in small impacts to cattle operations in three allotments with the potential loss of income from extra cows in up to four years out of twenty. Remaining cattle will enjoy better forage conditions in those years. The sixth allotment, Piute Valley, which has been used in only two years of the last twenty, would be eliminated. The impacts of this elimination are negligible given its infrequent use.

Impacts to Utilities

Impacts are the same as Alternative 3.

Impacts to Recreation Resources and Activities

Impacts are the same as Alternative 2 with the exception that all of the area north of Interstate 15 would be excluded from the DWMA. Recreation activities, including rockhounding, vehicle touring, visitation of historic mining and traditional sites could continue in this area with no change from the current situation. The impacts of changes in the parking, stopping and camping limitations along routes of travel would be the same as Alternative 1.

Impacts to Minerals and Mining

Impacts are similar to Alternative 2 except that exploration and development for gold would be more likely in that area of the southwestern portion of the Shadow Valley unit that would remain outside the DWMA and remain multiple use class M. This area would also become Category III, rather than Category I habitat, with less stringent mitigation measures and lower compensation requirements.

Impacts to Vehicle Access

Impacts are the same as Alternative 2.

4.2.5 PREFERRED ALTERNATIVE - Desert Tortoise

Impacts to Vegetation

General Vegetation: Impacts to vegetation are similar to Alternative 2 except that about 312,485 acres would be affected, or 41,815 acres less than Alternative 2, and 12,705 acres less than Alternative 3, and 101,355 more acres than Alternative 4. The grazing management strategy is Alternative 3 and beneficial impacts from elimination of ephemeral grazing and restriction of grazing during the spring growing season are positive to general vegetation but not as beneficial as elimination of grazing under Alternative 2.

Special Status Plants: Impacts are the same as Alternative 2.

Biological Soil Crusts: Impacts to biological soil crusts are similar to Alternative 3 but over a slightly smaller area. (See the discussion on General Vegetation above.)

Riparian/Wetlands: Impacts are the same as Alternative 1.

Noxious Weeds: Impacts are the same as Alternative 2.

Impacts to Wildlife

General Wildlife: Impacts to general wildlife populations and habitats will be similar to Alternative 3 but over a slightly smaller area. (See the discussion on General Vegetation above.)

Special Status Animals: Impacts to desert tortoise are similar to Alternative 3 but over a slightly smaller area. The area excluded is in western Shadow Valley south of Turquoise Mountain. See the discussion on General Vegetation above.

Impacts to Soil, Water and Air Resources

Soil: This alternative would result in less surface disturbance which should result in reduced erosion rates for the 312,485 acres within DWMAs. Areas outside DWMAs would continue the current condition and trend.

Water: Impacts are the same as Alternative 2.

Air: Impacts are the same as Alternative 2.

Impacts to Wilderness

Impacts are similar to Alternative 3 except a small area of Hollow Hills Wilderness would not receive beneficial impacts from modified grazing practices within DWMAs.

Impacts to Cultural and Native American Values

Impacts are similar to Alternative 3 except: Potential for impacts to known and undiscovered cultural resources and Native American values in the Turquoise Mountain area west of Turquoise Mountain Road would be higher as these areas would not be included in the DWMAs.

Impacts to Wild Horses and Burros

Impacts to wild horses and burros are the same as Alternative 3.

Impacts to Cattle Grazing (and Allotments)

Impacts are the same as Alternative 3. Additional impacts to grazing may occur if allotments fail to meet standards within DWMAs and grazing is found to be contributory.

Impacts to Utilities

Impacts are the same as Alternative 3.

Impacts to Recreation Resources and Activities

Impacts are the same as Alternative 3 with the exception that the western portion of Shadow Valley, around and south of Turquoise Mountain, would be excluded from the Shadow Valley ACEC. Recreation activities could continue in this area with no change from the current situation. The MUC in this area would remain Moderate. The impacts of changes in the parking, stopping and camping limitations along routes of travel within the DWMAs would be the same as Alternative 3.

Impacts to Minerals and Mining

Impacts are similar to Alternative 3 except that 30,010 acres would be reclassified from MUC M to L rather than 42,713 acres and 12,705 additional acres of BLM Category I habitat would be converted to Category III habitat outside DWMA boundaries.

Impacts to Vehicle Access

Impacts are similar to Alternative 2 except that the western portion of Shadow Valley, around and south of Turquoise Mountain would remain MUC Moderate and routes would be designated under MUC M guidelines.

4.3 AMARGOSA VOLE CONSERVATION AND RECOVERY

This amendment was developed to provide a strategy to manage Amargosa vole habitat on BLM lands to achieve the recovery criteria defined in the *Draft Recovery Plan for the Amargosa Vole*. The alternatives primarily considered recommendations in the Draft Recovery Plan (see Appendix H for a list of the recommendations). These recommendations would be adopted for all proposed Amargosa vole ACEC areas, except where noted otherwise. (Refer to Chapter 7, Figure 9a through e for a visual representation of the identified areas.)

4.3.1 ALTERNATIVE 1 (No Action) - Amargosa Vole

Impacts to Vegetation

General Vegetation: Riparian and wetland plant communities benefit from existing measures to protect habitat for Amargosa vole in Grimshaw Marsh and Amargosa Canyon ACECs. There are ongoing efforts to remove exotic tamarisk from these wetland and riparian areas (see discussion for Riparian/Wetlands below).

Special Status Plants: Tecopa birdsbeak is a rare plant species is in the Grimshaw Natural Area ACEC and receives protection there. No other special status plants are known from the existing ACECs.

Biological Soil Crusts: It is thought that the low to mid-elevation arid ecosystems in the west developed with low levels of surface disturbance. Crust response to disturbance is highly variable. Cyanobacteria are the most resistant to disturbance, are highly mobile and can recolonize disturbed surfaces rapidly. Lichens vary in resistance based on type. Mosses have a high susceptibility to disturbance. Lichens and mosses are susceptible to burial. Disturbance results in reduced lichen and moss cover by burial, and Cyanobacteria may increase and replace the lichens and mosses decreasing the species diversity. Biological crusts on sandy soils are less susceptible to disturbance when moist or wet. Clay soils are less susceptible to disturbance when crusts are dry.

Removal of the feral cattle and restricting OHV access may reduce impacts to the biological soil crusts.

Riparian/Wetland: Riparian and wetland plant communities including cottonwood/ willow, emergent wetland, alkaline marsh, and mesquite bosque on affected public lands would continue to be managed under CDCA Plan guidance for MUC L. Current riparian restoration activities on public lands in China Ranch Wash, Amargosa Canyon ACEC and Grimshaw Lake ACEC areas would continue, but would not be expanded northward along the Amargosa River. These activities are primarily focused on the removal of exotic plants (*Tamarix* spp.) and the reestablishment of native vegetation. Exotic plants occurring on private lands within the Shoshone stretch of the river which are gradually displacing native vegetation would not be removed, and riparian restoration activities

would not occur except where initiated by private landowners. Exotics in this area would likely continue to serve as a seed source for further exotic plant establishment in downstream portions of the Amargosa River. This will take place despite current and planned efforts to control these plants in the two downstream ACECs, with the result that overall watershed restoration will be substantially slowed.

Additional consolidation of fragmented riparian and wetland habitat would not occur. Private lands along the Amargosa River near Shoshone that support extensive riparian, mesquite bosque and wetland habitat would not be identified for possible acquisition from willing landowners. This area is one of only a few above-ground flow stretches of the River, and is used by a wide variety of nesting neotropical birds, the Chicago Valley wild horse herd, Nevada speckled dace, Amargosa pupfish and Shoshone pupfish (historically).

Noxious Weeds: See the discussion above for Riparian/Wetlands.

Impacts to Wildlife

General Wildlife: Neotropical migrants as well as other wetland and riparian obligate bird species use the Amargosa River and associated wetlands at Grimshaw Marsh for breeding, wintering, and migration. These habitats on public lands would continue to receive improvement by the removal of exotic tamarisk and replanting of native trees. Improvements on adjacent private lands are unlikely, and wildlife values are likely to decline as tamarisk infestations spread due to lower forage, habitat such as nesting and diversity values for wildlife provided by tamarisk. Consolidation of additional habitat important to migratory birds would not occur.

Special Status Animals: The Amargosa vole and its habitat would continue to be managed consistent with MUC L guidelines in the CDCA Plan. In addition, Federal actions that may affect the Amargosa vole or its habitat, as well as other federally-listed species, would continue to receive review by USFWS under the consultation procedures of the Endangered Species Act. Mitigation measures limiting the effects of Federal projects would be jointly developed and implemented.

In addition to the protection afforded by the CDCA Plan and by regulatory mechanisms of the Endangered Species Act, there are two existing ACECs with plan prescriptions that guide BLM management in Amargosa Canyon and in Grimshaw Marsh. However, other public lands located north of the Grimshaw Lake ACEC and south of the town of Shoshone that support a small ribbon of riparian habitat believed suitable for the Amargosa vole would continue under current MUC L management but would not receive special management prescriptions through ACEC designation.

Additional substantive consolidation of currently fragmented vole habitat would not occur. Two parcels and one State lands section located in Amargosa Canyon that contain vole habitat and that were identified for acquisition in the Amargosa Natural Area ACEC could still potentially be acquired. Other private lands supporting extensive riparian and

wetland habitat used by Amargosa vole would not be identified for possible acquisition from willing landowners and subsequent management for the vole.

Indirect impacts from development on adjacent private lands include incidental take of Amargosa vole and loss or degradation of habitat and downstream riparian impacts associated with increased spillover activities on public lands including casual recreational use, proliferation of routes, and illegal dumping. These impacts may be mitigated by additional route designation on public lands, as needed.

The federally-listed least Bell's vireo that breeds in riparian habitat in the Amargosa Canyon would continue to receive review by USFWS under the consultation process. Prescriptions in the Amargosa Canyon Natural Area ACEC and MUC L guidelines in the CDCA Plan provide additional protection. Some consolidation of currently fragmented riparian habitat that would benefit this species would occur, but overall fragmentation of the riparian corridor would continue. Similar impacts could occur to the federally-listed southwestern willow flycatcher if it occurs here. State-listed yellow-billed cuckoos have been recorded, but a breeding population is not known to exist here. The current management of the area would not significantly affect this species.

Habitat for the California BLM sensitive Shoshone Cave whip-scorpion located just north of Shoshone would continue under prescriptions in the existing habitat management plan (HMP). The cave would be managed apart from the downstream Amargosa Canyon and Grimshaw Lake ACECs, and there would be little consideration for this species as part of an Amargosa River watershed strategy.

Habitat for two California BLM sensitive fish - Amargosa pupfish and Nevada speckled dace - outside of the two existing ACECs would be managed under MUC L guidelines and under BLM's Special Status Fishes Strategy. They would not be included in an Amargosa River watershed strategy.

Impacts to Soil, Water and Air Resources

Soil: Soil erosion rates will continue at current rates.

Water: Impacts from the no action alternative represent non-point-source impacts which are controlled by Best Management Practices (BMP). Portions of the MUC and ACEC guidance for the CDCA Plan and specific management actions in the Amargosa and/or Grimshaw Natural Area ACEC Plans represent BMP under the Clean Water Act. These practices include water quality monitoring, removal of exotic tamarisk and replacement with native species, prohibition of vehicle use, camping and geothermal leases to protect surface or groundwaters, applying for public water resources and providing hydrologist review of projects. These BMPs reduce sedimentation and increase infiltration rates. These are desirable and are positive steps toward solution of the impaired watershed classification which occurs in portions of this watershed. In addition, implementation of fallback standards as identified in 4.1.1 will provide some beneficial impacts to water quality.

Air: Air quality would not be affected by Alternative 1 for vole conservation and recovery except as identified in 4.1.1, implementation of fallback standards.

Impacts to Wild and Scenic Rivers

As a result of eligibility determinations on twenty public land miles of the Amargosa River that are being evaluated for suitability in the National Wild and Scenic Rivers System, biological, geologic, physiographic, recreational, scenic and wilderness values found along various stretches shall receive additional protection and management to preserve the rivers free-flowing character and unique features. These remarkable values are described in more detail in Appendix O. Existing strategies identified for the vole and its habitat, to manage exotic invasive species and implement standards including maintaining Proper Functioning Condition in riparian and wetland habitat will benefit these values.

Impacts to Cultural and Native American Values

Sensitive historic (principally the Tonapah and Tidewater Railroad, mines, adits and historic structures) and prehistoric (temporary camps and possible village sites) cultural resources in the identified habitat outside of the existing Amargosa Canyon and Grimshaw Lake Natural Area ACECs would continue to be the focus of general recreation activity, unguided site visitation, and impacts from vandalism. Overall impacts of Alternative 1 on known Native American values are modestly negative. Few projects that would trigger inventory or evaluation are likely to occur, and existing resources are not yet adequately documented. The ability to prevent inadvertent loss of cultural resources would remain limited in comparison to the cultural resources located within the two ACEC areas. Over time important known and undiscovered cultural resources (primarily associated with nearby springs, associated riparian areas) may be lost due to continuing uses and lack of inventory, evaluation, and data recovery.

Adoption of this alternative is unlikely to, but could result in an irreversible and irretrievable commitment of important cultural resources or Native American values outside of existing ACECs, particularly for notice-level mining actions. Site-specific analysis would occur prior to ground disturbing activities authorized by BLM.

Impacts to Wild Horses and Burros

There are no impacts to wild horses and burros under Alternative 1. There are no Herd Areas or Herd Management Areas that overlap existing ACECs and critical habitat for Amargosa vole.

Impacts to Cattle Grazing (and Allotments)

There would be no impacts from Alternatives 1 (No Action) since no cattle grazing allotments are located in the area.

Impacts to Recreation Resources and Activities

Alternative 1 consists primarily of activities already identified in the CDCA Plan for the conservation and recovery of threatened and endangered species and in follow-up management plans developed for ACECs. Currently, motor vehicles are prohibited within the two existing ACECs (Grimshaw Lake and Amargosa Canyon), with the exception of parking areas located at major trailheads. Application of the route designation criteria to conserve special status species and natural communities results in minor impacts to vehicular access and, therefore, to motorized recreation.

If the "No Action" alternative is selected special management actions will be applied to achieve the recovery criteria defined in the U.S. Fish and Wildlife Service Recovery Plan for the Amargosa Vole. These special actions apply to all five of the alternatives discussed in this section regarding the Amargosa Vole but cover different geographical areas. All recreational activities and improvements must be consistent with recovery criteria. Regardless of the alternative, these special actions will result in minor positive impacts for low-impact recreation activities. Actions in the existing ACEC plans to interpret the Amargosa along the T&T grade will enhance the recreational experience. This trail provides a unique and scenic destination that attracts hikers from around the world. Actions to secure and protect wetland habitats from geothermal development will help ensure current water flows at local hot springs, which are a popular recreational destination. Actions to improve and maintain access roads, trailheads and parking areas will benefit visitor travel in the area. Overall, the special management actions will provide a minor positive benefit to recreation resources in the affected environment. No irreversible and irretrievable commitment of recreation resources will occur.

Impacts to Minerals and Mining

Impacts to mineral development would be minor. Critical habitat status for the Amargosa vole would hinder potential development of geothermal waters on public lands and expansion of existing geothermal development on nearby private lands. These impacts are the same for all alternatives.

Impacts to Vehicle Access

Some indirect impacts may occur from development on adjacent private lands, including proliferation of routes.

Impacts to Land Uses

Minimal impacts would occur to other land uses outside of critical habitat for the vole. Within critical habitat future development may be impacted, although permits are infrequent in this area. These uses may include substantial parameters including additional costs for processing permits and/or denial of some permits that may cause affect to the species.

4.3.2 ALTERNATIVE 2 - Amargosa Vole

Impacts to Vegetation

General Vegetation: Management of public lands within the watershed of the Central and Lower Amargosa River would be addressed in one coordinated Amargosa River ACEC Management Plan. One goal of this plan would be the maintenance of proper functioning condition of the River within California, including adequate vegetative cover to protect stream banks, plant communities diverse in age class and species composition and other key components. Coordination with upstream landowners and involved agencies within Nevada would also be sought. See the discussion on Riparian/Wetlands below for additional information. See also, general vegetation discussion under 4.4.2 for Carson Slough.

Special Status Plants: A population of Tecopa birdsbeak a few miles south of Shoshone would be included in the expanded ACEC. It would be an additional focus for protection measures in subsequent ACEC planning. No other special status plants are known to be within the expanded ACEC.

Biological Soil Crusts: Impacts are the same as Alternative 1.

Riparian/Wetland: Riparian and wetland plant communities including cottonwood/ willow, emergent wetland, alkaline marsh, and mesquite bosque on affected public lands would continue to be managed under CDCA Plan guidance for MUC L. In addition prescriptions would be developed for a single, coordinated, watershed-based ACEC. Current riparian restoration activities to benefit water, soil, vegetation and wildlife values on public lands in the China Ranch Wash, Amargosa Canyon ACEC and Grimshaw Lake ACEC areas would continue and be expanded northward along the Amargosa River.

Enhancement of riparian and wetland values would occur as tamarisk removal efforts were extended over a wider portion of the watershed (see the discussion in 4.3.1 for Riparian/Wetlands).

Noxious Weeds: Similarly, exotic plants (*Tamarix* spp.) occurring on private lands within the Shoshone stretch of the river and which are gradually displacing native vegetation would be removed and riparian restoration activities would occur, following Federal acquisition of the property. The exotic plant seed source problem in this area, which results in the deposition of seeds and vegetative material into downstream portions of the Amargosa River including the most scenic canyon area south of Tecopa, could then be reduced or eliminated.

Impacts to Wildlife

General Wildlife: Wildlife within the proposed ACEC would benefit from riparian habitat consolidation, wider application of actions identified as part of the Amargosa vole recovery strategy, and watershed management measures identified for the ACEC plan.

Specific management actions would be directed towards the continued viability of the numerous endemic species, including spring-dependent macro-invertebrates and special status animals. More particularly, the public lands located north of Grimshaw Lake ACEC and south of the town of Shoshone that support a small ribbon of riparian habitat, important as a nesting area for several neotropical migratory bird species, would be given special management through an ACEC plan. The newly expanded ACEC areas would receive additional monitoring and management emphasis as prescribed in the ACEC plan.

Special Status Animals: This alternative would have the greatest benefit to the federally threatened Amargosa vole. Public lands on approximately 10,450 additional acres (19,760 total acres) including all of designated Amargosa vole critical habitat and additional available vole habitat in the Amargosa riparian corridor would have management prescriptions to promote Amargosa vole recovery. Special status species prescriptions would focus on vole population inventory and monitoring and on habitat maintenance and improvement. Habitat improvement measures would emphasize riparian habitat restoration, control of exotics, and land acquisition.

Vole management would be enhanced by consolidation into one integrated ACEC plan. In particular, riparian lands north of Grimshaw Lake ACEC and south of Shoshone believed suitable for the Amargosa vole, and several other recently acquired riparian and wetland area parcels important for the vole located north and east of Grimshaw Lake would be integrated into this planning effort.

The acquisition and consolidated management of riparian and watershed resources and increased management emphasis in the enlarged ACEC would benefit other threatened and endangered species, such as least Bell's vireo and possibly southwestern willow flycatcher, and BLM sensitive species, such as Amargosa pupfish and Nevada speckled dace, along the Amargosa River. Expanded riparian restoration activities would benefit least Bell's vireo especially. Inclusion of Shoshone Cave area in the ACEC and preparation of a coordinated watershed strategy would aid in protection of Shoshone Cave whip-scorpion habitat. In addition to special species recovery, management actions would be aimed at improved coordination of watershed planning and increased partnerships with neighboring landowners and other agencies.

On affected public lands outside of the expanded ACEC, the Amargosa vole and other special status species and their habitat would continue to be managed consistent with MUC L guidelines in the CDCA Plan.

Impacts to Soil, Water and Air Resources

Soil: Impacts are the same as Alternative 1.

Water: The Amargosa watershed would derive increased benefits from a coordinated watershed protection strategy and increased monitoring focus. Other beneficial impacts would be the same as Alternative 1.

Air: Impacts would be similar to Alternative 1 except beneficial impacts would cover a larger ACEC area.

Impacts to Wild and Scenic Rivers

Impacts are similar to Alternative 1 except additional strategies identified to enhance vole habitat and watershed coordination will further benefit Wild and Scenic River values.

Impacts to Cultural and Native American Values

Identification of additional measures to protect cultural resources would occur in the context of the supplemental ACEC management planning for the Amargosa vole. At a minimum, important cultural resources would benefit by improved inventory and documentation in the context of subsequent implementation of appropriate actions for protection of Amargosa vole habitat. Cultural resources within the expanded ACEC would become part of a permanent complex of important cultural resources that would be available for study, interpretation, and public enjoyment into the foreseeable future. The proposed ACEC includes scientifically significant prehistoric and historic cultural resources and Native American values. Designation of these areas within the discontinuous Amargosa River ACEC will afford greater protection to these resources.

Site-specific manipulation of vegetation habitat, including tamarisk removal, recreational development such as trail building and ancillary activities may impact cultural resources and Native American values. These impacts may be mitigated with site-specific surveys, by avoidance or data collection. This impact is similar in scope to Alternative 1 (No Action), but may affect cultural resources on approximately 10,450 more acres. Identification of additional measures to protect Native American values would occur in the context of the supplemental ACEC management planning for the Amargosa vole. Expanded ACEC management planning would result in additional coordination with the potentially affected tribal groups, and would better assure adequate access to and protection of tribal values, including village sites, known and suspected collection areas and known traditional use areas for Native Americans. The identified 160 acres of exchange lands in the Tecopa area includes an important pre-historic campsite. Site specific surveys on the public lands would be required prior to final decision on disposal. Appropriate mitigation for the loss of significant cultural resources will be required.

Impacts to Wild Horses and Burros

Impacts are the same as Alternative 1 (No Action). The inclusion of the Carson Slough area in the ACEC would result in maintenance of the wild horse herd at its current lower numbers. The AML would be changed from 28 to 12 horses to reflect the current population levels, and 28 to 0 burros to eliminate the few remaining burros (see 4.4.2 for a discussion of wild horse and burro impacts).

Impacts to Cattle Grazing (and Allotments)

Impacts are the same as Alternative 1 (No Action).

Impacts to Recreation Resources and Activities

Overall, this alternative will have a moderate positive benefit to recreation resources and activities. The recreation experience here is directly tied to the condition of the environment. Where the actions in this alternative improve the natural resources, they also improve the setting for nature-based recreation experiences. ACEC Management planning will integrate vole protection strategies, vegetation management strategies, and recreational management strategies for the area. Recreational management strategies can be anticipated to include additional trails, trail improvements, interpretive opportunities and additional activities that will enhance visitor experiences and increase partnership with local communities. Visitors will also benefit from the combining of existing separate management units into one, easy to identify destination. By reducing the number and type of management areas we will reduce the potential for confusion and allow for increased focus on the recreational experience.

Impacts to Minerals and Mining

Impacts are the same as Alternative 1 except this Alternative would limit the potential expansion of existing sand and gravel mining operations located east of Highway 127 and north of Furnace Creek Road. The existing pit is located within the boundary of the proposed ACEC under this alternative and new limitations could interfere with its expansion.

The Southern Clay Products' hectorite mine is located more than 1000 feet from the Amargosa River and direct conflicts with the riparian area would be minimal. However, if the pit encounters groundwater and the pit requires dewatering, special mitigation measures would be necessary to prevent lowering of the water table within the riparian area or discharging sediment laden water which might impact water quality.

Approximately 10,450 acres of public lands would be added to the existing ACEC. However, these lands are currently classified as MUC L that requires an approved Plan of Operations prior to conducting surface disturbing operations. Additional management actions to protect riparian habitat or prevent take on Amargosa vole could further increase costs or limit future mineral operations, curtail activities in the riparian zone, and/or provide higher reclamation standards for disturbed areas. The new ACEC designation is not expected to be substantially more restrictive than new mitigation that might be required for protection of critical habitat or any habitat where vole may be affected.

Impacts to Vehicle Access

Impacts are the same as Alternative 1 (No Action) except: new route designation is unlikely to be a substantial change from the existing situation in the Amargosa. Some routes may be closed to protect listed plants in the Carson Slough area, based on results of analysis and site-specific plant surveys. Additional public input and review will occur in conjunction with the ACEC management planning effort.

Impacts to Land Uses

Impacts to development include parameters on future rights-of-way or land-use permits, particularly where riparian impacts could occur, to be developed and analyzed in conjunction with ACEC management planning. These changes will result in increased costs and may preclude some activities within the ACEC. However, the impacts are not considered significant, given the small number and size of current land-use permits and rights-of-way in the area. The Tecopa Hot Springs land-use authorization is not anticipated to be affected. Impacts are similar in scope as those for Alternative 1 (No Action) but would affect future permits proposed over approximately 10,450 more acres.

In addition, under this alternative, new locatable mining activities would require a plan of operations in conjunction with environmental assessment and biological consultation. ACEC management planning may identify additional parameters for some or all surface disturbing activities within the ACEC.

Adoption of this alternative would not result in an irreversible and irretrievable commitment of development opportunities or other land uses.

4.3.3 Alternative 3 (Preferred) - Amargosa Vole

Impacts to Vegetation

General Vegetation: Impacts to plant communities would be similar to those described in Alternative 2 but over an area 2,400 acres smaller.

Special Status Plants: Impacts are the same as Alternative 2.

Biological Soil Crusts: Impacts are the same as Alternative 1.

Riparian/Wetland: Impacts to plant communities would be similar to those described in Alternative 2 but over an area 2,400 acres smaller.

Noxious Weeds: Removals of noxious weeds would be similar to those described in Alternative 2 but over an area 2,400 acres smaller. Noxious weed control would be less beneficial but still positive overall.

Impacts to Wildlife

General Wildlife: Impacts to wildlife populations in general would be similar to those described in Alternative 2 but over an area 2,400 acres smaller.

Special Status Animals: Impacts to Amargosa vole would be similar to those described in Alternative 2 but over an area 2,400 acres smaller. All critical habitat plus other vole habitat would be within the new Amargosa River ACEC. ACEC management direction would also be similar to Alternative 2. Management of habitat for the Shoshone Cave-whip scorpion would continue under the existing Shoshone Cave Whip-scorpion Habitat Management Plan.

Impacts to Soil, Water and Air Resources

Soil: Impacts would be similar to Alternative 2 but would cover a smaller area.

Water: Impacts would be the same as Alternative 2.

Air: Impacts would be the same as Alternative 1.

Impacts to Wild and Scenic Rivers

Impacts would be similar to Alternative 2 but would cover a smaller area.

Impacts to Cultural and Native American Values

There would be similar effects to cultural and Native American values under this alternative as for Alternative 2. However the number of cultural resources and known Native American collection areas that would be afforded protection under this alternative would be slightly decreased compared to Alternative 2, and moderately increased compared to Alternative 4. The potential for inadvertent affect to cultural resources from vegetation or recreation management activities would be moderately greater than Alternative 1 (No Action) and slightly less than Alternative 2. The identified 140 acres of exchange lands in the Tecopa area will require site specific surveys on the public lands prior to disposal. Appropriate mitigation for the loss of significant cultural resources will be required.

Impacts to Wild Horses and Burros

Impacts are the same as Alternative 2.

Impacts to Cattle Grazing (and Allotments)

Impacts are the same as Alternative 1 (No Action).

Impacts to Recreation Resources and Activities

Impacts are the same as Alternative 2; the difference in size will not have an effect on impacts to recreation resources and activities.

Impacts to Minerals and Mining

Impacts are the same as Alternative 2 except the proposed ACEC expansion would exclude an existing sand and gravel operation east of Highway 127 and north of Furnace Creek Road and therefore future County road improvements would be facilitated.

Impacts to Vehicle Access

Impacts are the same as Alternative 2.

Impacts to Land Uses

Impacts to Land use are similar in scope as Alternative 2, except approximately 2,400 acres less than Alternative 2 would be potentially affected by parameters on new development.

4.3.4 Alternative 4 - Amargosa Vole

Impacts to Vegetation

General Vegetation: Impacts to plant communities would be similar to those described in Alternative 3 covering an area 4,790 acres smaller (7,190 acres less than Alt 2).

Special Status Plants: Impacts are the same as Alternative 1.

Biological Soil Crusts: Impacts are the same as Alternative 1.

Riparian/Wetland: Impacts to plant communities would be similar to those described in Alternative 3 covering an area 4,790 acres smaller.

Noxious Weeds: Removals of noxious weeds would be similar to those described in Alternative 2 covering an area 7,190 acres less. Noxious weed control would be substantially less beneficial but still positive.

Impacts to Wildlife

General Wildlife: Impacts to wildlife populations in general would be similar to those described in Alternative 3 but over an area 4,790 acres smaller. Important areas for neotropical migratory birds that are outside of the new Amargosa vole ACEC would not receive special ACEC management.

Special Status Animals: Impacts to Amargosa vole would be similar to those described in Alternative 3 but over an area 4,790 acres smaller. All critical habitat would be within the new Amargosa vole ACEC. Special management actions in the new ACEC would promote vole recovery within its designated critical habitat. The potential for species recovery may be limited by having only a localized strategy for a mobile species known to range far from its critical habitat area. Some of the public lands that are within the riparian corridor and believed suitable for Amargosa vole would be excluded from the ACEC.

Impacts to Soil, Water and Air Resources

Soil: Impacts would be the same as Alternative 1.

Water: Impacts would be the same as Alternative 1.

Air: Impacts would be the same as Alternative 1.

Impacts to Wild and Scenic Rivers

Impacts are the same as Alternative 1.

Impacts to Cultural and Native American Values

There would be similar effects to cultural resources and Native American values in the newly designated ACEC as for Alternatives 2 or 3. However the number of cultural resources and known Native American collection areas that would be afforded protection under this alternative would be substantially decreased from Alternative 2 and moderately decreased from Alternative 3. Potential for inadvertent affect to cultural resources from vegetation or recreation management activities would be similar to Alternative 1 (No Action). The identified 100 acres of exchange lands in the Tecopa area will require site specific surveys on the public lands prior to disposal. Appropriate mitigation for the loss of any significant cultural resources will be required, if found.

Impacts to Wild Horses and Burros

Impacts are the same as Alternative 1 (No Action).

Impacts to Cattle Grazing (and Allotments)

Impacts are the same as Alternative 1 (No Action).

Impacts to Recreation Resources and Activities

The impacts of Alternative 4 are similar to Alternative 1 (No Action). Recreation uses may be impacted within the ACEC, just as they may in current critical habitat.

Recreation will not receive any focus in the ACEC management planning, so it will be less enhanced in this ACEC than other alternatives.

Impacts to Minerals and Mining

Impacts are the same as Alternative 1 (No Action). Additional limitations on mining and other surface disturbing activities may be identified in subsequent ACEC Management Planning.

Impacts to Vehicle Access

Impacts to vehicle use are the same as Alternative 2.

Impacts to Land Uses

Impacts are similar in scope and acreage affected as Alternative 1 (No Action).

4.4 THREATENED AND ENDANGERED SPECIES CONSERVATION: T&E Plants Lower Carson Slough Conservation Area Options

This amendment was developed to provide a strategy to manage habitat on BLM lands for three federally-listed plants - Amargosa niterwort, Ash Meadows gumplant, and spring-loving centaury. No recovery plans have yet been developed for these plants. Therefore, alternatives consider ACECs, if any, and special management actions using recommendations identified during designation of critical habitat for the niterwort and gumplant (refer to Chapter 7, Figure 10 for a visual representation of the identified areas).

4.4.1 ALTERNATIVE 1 (No Action) - T&E Plants

Impacts to Vegetation

General Vegetation: Within the Carson Slough area, there are numerous plant communities of interest, including riparian, alkali marsh, and mesquite bosque. Impacts to vegetation should be modest on public lands located north of Ash Meadows Road that would continue to be managed under CDCA Plan guidance for MUC L. Impacts to vegetation may be somewhat greater on public lands located south of Ash Meadows Road that would continue to be managed under CDCA Plan guidance for MUC M, due to moderate potential for mining activities under notice. Public lands on both sides of Ash Meadows Road would continue to receive special management attention (primarily through the environmental review process for conflicting activities) as a Salt and Brackish Water Marsh Unusual Plant Assemblage (UPA).

Special Status Plants: Any proposed project or activity that might affect one or more of the three species (Amargosa niterwort, ash meadows gumplant and spring-loving centaury) would receive review by USFWS under the consultation procedures of the Endangered Species Act. Mitigation measures jointly developed by BLM and USFWS would ensure that the plant populations are not jeopardized. For most endangered plants, avoidance of impacts is the preferred mitigation.

According to guidance in the UPA Monitoring Plan, monitoring of wetlands in the UPA and monitoring of related threatened and endangered plants would continue as staff time and funding are available. Under this alternative, no specific management for recovery of Amargosa niterwort, ash meadows gumplant and spring-loving centaury would be identified at this time. Consequently, additional protective actions would not be implemented, and ACEC designation would not occur. Existing gaps in information on listed plant distribution and population size and threats would remain for the foreseeable future.

Biological Soil Crusts: It is thought that the low to mid-elevation arid ecosystems in the west developed with low levels of surface disturbance. Crust response to disturbance is highly variable. Cyanobacteria are the most resistant to disturbance, are highly mobile

and can recolonize disturbed surfaces rapidly. Lichens vary in resistance based on type. Mosses have a high susceptibility to disturbance. Lichens and mosses are susceptible to burial. Disturbance results in reduced lichen and moss cover by burial, and Cyanobacteria may increase and replace the lichens and mosses decreasing the species diversity. Biological crusts on sandy soils are less susceptible to disturbance when moist or wet. Clay soils are less susceptible to disturbance when crusts are dry.

Establishing ACEC's and restricting surface disturbing activities will reduce the impacts to biological soil crusts.

Riparian/Wetland: The Salt and Brackish Water Marsh Unusual Plant Assemblage overlaps portions of the entire area and there are some existing impacts primarily south of Ash Meadows Road from activities related to OHV use off of routes. Some of this activity is believed to be related to mining exploration. The playa is delicate and does not repair readily.

Noxious Weeds: There are some positive impacts to the control of noxious weeds associated with Alternative 1 based on on-going efforts to control non-native invasive species on public lands. These efforts are not specifically associated with T&E Plant conservation and recovery, but do support Alternative 1 of standards and guidelines.

Impacts to Wildlife

General Wildlife: Wetland and riparian habitats are uncommon in the desert and are critical to wildlife, especially neotropical migrant birds in spring and fall. This is one of the few such areas in the CDCA administered by the BLM that is not managed under specific prescriptions in an ACEC management plan. Little is known of the use of this area by neotropical migrant birds, waterfowl, shorebirds, bats, or other wildlife species, and therefore it is difficult to quantify impacts. Sense use of the area is generally low impacts to wildlife are generally low. The greatest threats to wildlife may be threats to water quality and quantity which pose direct threats to key components of their habitat.

Special Status Animals: Other than neotropical migrant birds, no special status animals have been recorded in this area. Several species of bats designated as BLM sensitive probably forage in the wetlands. Tamarisk and other exotic invasives may pose threats to their foraging habitat. Other impacts are similar to those for general wildlife.

Impacts to Soil, Water and Air Resources

Soil: Soil erosion rates will continue at current rates.

Water: Impacts from the no action alternative represent non-point-source impacts which are controlled by Best Management Practices (BMP). Portions of the MUC guidance for the CDCA Plan and specific management actions in the Carson Slough area and the UPA represent BMP under the Clean Water Act. These practices include removal of exotic tamarisk and replacement with native species, route closures and restrictions on vehicle

use, monitoring of surface waters, and providing hydrologist review of projects. These BMPs reduce sedimentation and increase infiltration rates. These are desirable and are positive steps toward solution of the impaired watershed classification which occurs in portions of this watershed. In addition, implementation of fallback standards as identified in 4.1.1 will provide some beneficial impacts to water quality and quantity.

Air: Air quality would not be affected by Alternative 1 for T&E plant conservation and recovery except as identified in 4.1.1, implementation of fallback standards.

Impacts to Wild Horses and Burros

The current management prescriptions would not impact the wild horse herd in this area. Monitoring and survey activities would be undertaken to further evaluate strategies to protect listed plants from trampling and measures may be identified that limit wild horse access to some areas through fencing or other means. The Appropriate Management Level for wild horses and burros would remain at 28 animals for each.

Impacts to Recreation Resources and Activities

Alternative 1 consists primarily of activities already identified in the CDCA Plan for the conservation and recovery of threatened and endangered species and in follow-up implementation activities for UPAs and riparian areas. Application of existing CDCA Plan route designation to conserve special status species and natural communities results in minor impacts to vehicular access, and therefore, to recreation.

If the "No Action" alternative is selected special management actions will be applied to achieve the recovery criteria defined in the U.S. Fish and Wildlife Service Recovery Plan for the three plant species. These special actions apply to all alternatives discussed in this section regarding the listed plants but cover different geographical areas. All recreational activities and improvements must be consistent with recovery criteria. Regardless of the alternative, these special actions will result in minor positive impacts for low-impact recreation activities. No irreversible and irretrievable commitment of recreation resources will occur.

Impacts to Minerals and Mining

All proposed activities, including mining, within critical habitat for T&E plant species would continue to require consultation with USFWS. Surface disturbance from mining would continue to be administered according to MUC requirements for MUC L north of Ash Meadows Road and MUC M south of Ash Meadows Road. An active zeolite mine five miles east of Death Valley Junction would not be affected except for T&E plant survey and appropriate mitigation if an expansion of the mine is proposed.

Impacts to Vehicle Access

There would be minimal additional impacts anticipated to vehicle access. Much of the playa is already closed to vehicular use. Supplemental route designation may be pursued

north of Ash Meadows Road as time and resources permit to protect sensitive soils, riparian areas, and T&E plants. Generally existing routes would continue to be available for use south of Ash Meadows Road in the affected area, unless specific T&E plants are at risk. Two routes were closed in the area more than a decade ago to protect plant populations and the area is being managed under special plant and riparian protection policies.

4.4.2 ALTERNATIVE 2 (Preferred) - T&E Plants

Impacts to Vegetation

General Vegetation: Riparian, alkali marsh, and mesquite bosque communities on 4,340 acres of public lands would be designated as the Lower Carson Slough ACEC. This includes vegetation and land within and around much of the Salt and Brackish Water Marsh Unusual Plant Assemblage (UPA). Management actions to monitor, protect and study these communities would ensure their conservation and function. Management of plant communities would consider conflicts and resource needs in relation to the Amargosa River watershed. Additional coordination with upstream landowners in the Upper Carson Slough and along the upper Amargosa River would be sought, with the goal of long-term protection of the riparian and other vegetation values present on both sides of the State border. This effort would also promote watershed and ecosystem planning along the entire drainage system and a coordinated management strategy in this ACEC with other downstream ACECs in the central and lower reaches of the Amargosa River including the preservation and enhancement of existing water flows throughout the watershed.

Special Status Plants: Amargosa niterwort, Ash Meadows gumplant, and spring-loving centaury on 4,340 acres of public lands on both sides of Ash Meadows Road including and between both designated critical habitat units would be designated the Lower Carson Slough ACEC. The associated ACEC management planning would integrate UPA guidance from the CDCA Plan, recommendations set forth in the final rules for listing and critical habitat designations. (See Appendix G)

Plant population inventory and monitoring would likely increase during and following ACEC plan preparation consistent with ACEC planning objectives. Additional plant protection actions would be implemented according to proposed ACEC plan scheduling. Additional management emphasis would be added to address the relationship of listed plants to the entire Amargosa River watershed and to promote coordination with upstream landowners in the Upper Carson Slough and along the Amargosa River.

Biological Soil Crusts: Impacts are the same as Alternative 1.

Riparian/Wetland: Designation of the Lower Carson Slough ACEC on 4,340 acres of public lands that includes highly sensitive Salt and Brackish Water Marsh UPA would result in substantial beneficial impacts to wetland and riparian habitat. See the discussion on General Vegetation above.

Noxious Weeds: There are some positive impacts to the control of noxious weeds associated with Alternative 2 based on on-going efforts to control non-native invasive species on public lands. These efforts may increase somewhat with the designation of the ACEC but are not specifically associated with T&E Plant conservation and recovery. They do support Alternative 2 of standards and guidelines.

Impacts to Wildlife

General Wildlife: Wildlife species dependent upon wetland and riparian habitat (e.g., neotropical migrant birds, riparian songbirds, waterfowl, shorebirds, bats, small mammals) would benefit from the improved management of these communities. Management on a watershed basis would aid in maintaining the functioning condition of the Amargosa River and associated wetland areas.

Special Status Animals: See the discussion on General Wildlife above.

Impacts to Soil, Water and Air Resources

Soil: Impacts would be similar to Alternative 1 and potential for soil erosion would be decreased by parameters on activities and uses within the ACECs including growth of horse and burro populations and surface disturbance limitations.

Water: Impacts would be similar to Alternative 1 but added focus on exotic and invasive species removal, monitoring of surface and groundwater, and assessing proper functioning condition of the wetland and riparian habitat through the implementation of regional standards and guidelines will provide additional benefits to water resources.

Air: Air quality would not be affected by Alternative 2 for T&E plant conservation and recovery except as identified in 4.1.2, implementation of regional standards.

Impacts to Wild Horses and Burros

This alternative would adjust the AML for the Chicago Valley HMA from 28 to 12 wild horses and 28 to 0 burros. There would be no direct impacts to wild horses. There is only one herd in the HMA and their numbers are below the proposed AML. It would not be feasible where the animals are located now to manage a herd larger than 12 due to the proximity of two frequently crossed major highways, 190 and 127. In addition, the adjacent HMAs in Nevada have been zeroed out due to public lands transferred to the U.S. Fish and Wildlife Service. The probability of wild horses moving into Nevada thus necessitating removal would increase as their populations increase. There are currently removals of the younger siblings, which are placed in the BLM Wild Horse and Burro Adoption Program so that inbreeding will not occur, and periodic introduction of new mares to increase the genetic health of the herd.

The AML adjustment for burros would eliminate burros from the Chicago Valley HMA. Actual loss of burros is anticipated to be approximately four animals based on latest

census figures. The CDCA Plan recognized habitat for burros that now would be unavailable for any potential re-introduction of burros without a plan amendment. Individual burros in the area would be removed by live trapping methods. Impacts to wild burros are similar to the actions described in section 4.2 for alternatives related to desert tortoise conservation and recovery.

Impacts to Recreation Resources and Activities

Impacts are similar to Alternative 1. Application of route designation criteria to conserve special status species and natural communities during the ACEC planning process may result in additional minor impacts to vehicular access, and therefore, to recreation. This alternative would have a positive impact on recreation activities through the enhancement of a more natural environment and enhanced riparian system. No irreversible and irretrievable commitment of recreation resources is anticipated.

Under the CDCA Plan, there will be opportunities for interested and potentially impacted groups and individuals to participate in development of ACEC activity plans. The activity plan will include a description of types of future uses, activities, or management practices considered compatible with the purposes of the ACEC, as well as a description of any existing incompatible uses, activities, or practices within the area.

Impacts to Minerals and Mining

Impacts are the same as Alternative 1 except 1290 acres of public lands south of Ash Meadows Road would be managed according to MUC guidelines for class L. This would require an approved Plan of Operations before conducting any surface disturbing activity and would increase permitting time and costs for operations of less than five acres. Expansion of the zeolite mine east of Death Valley Junction would require a Plan of Operations and appropriate bonding.

Impacts to Vehicle Access

Route designation will occur concurrent with ACEC management planning. Some additional routes may be closed to protect listed plants and sensitive soil complexes based on results of analysis and survey. Additional public input and review will occur in conjunction with site-specific planning.

4.4.3 ALTERNATIVE 3 - T&E Plants

Impacts to Vegetation

General Vegetation: Impacts would be similar to those in Alternative 2 but on 1,540 acres of critical habitat for the niterwort and gumplant, or 2,800 acres less than Alternative 2. The Lower Carson Slough linkage, a 1.2-mile stretch of riparian habitat between the two critical habitat units and part of the Salt and Brackish Water Marsh UPA would continue to be managed consistent with MUC L guidelines.

Special Status Plants: Impacts would be similar to those in Alternative 2 but on 2,800 acres less, to include critical habitat for the niterwort and gumplant, and beneficial impacts would be similar for special status plants in areas covered. The Carson Slough linkage, not included in the ACEC in this alternative, is suspected to contain additional locations for these two species as well as the spring-loving centaury. ACEC management plans to be developed would focus on listed plant conservation, monitoring and recovery with less emphasis on watershed management.

Biological Soil Crusts: Impacts are the same as Alternative 1.

Riparian/Wetland: Impacts would be beneficial but less so than Alternative 2 as the Lower Carson Slough riparian area would not benefit from watershed focused prescriptions and management developed in an ACEC plan and a smaller area of riparian and wetland habitat would be covered.

Noxious Weeds: Impacts are the same as Alternative 2

Impacts to Wildlife

General Wildlife: Impacts would be beneficial particularly for neotropical migrant birds, riparian songbirds, waterfowl, shorebirds, bats, small mammals, but less so than Alternative 2 as the Lower Carson Slough riparian habitat would not benefit from watershed prescriptions and a smaller area of riparian and wetland habitat would be covered in the ACEC plan.

Special Status Animals: See the discussion for General Wildlife above.

Impacts to Soil, Water and Air Resources

Soil: Beneficial impacts are the same as Alternative 2 but would affect 2,800 acres less.

Water: Beneficial impacts are the same as Alternative 2 but would affect 2,800 acres less.

Air: Impacts are the same as Alternative 2.

Impacts to Wild Horses and Burros

Impacts are the same as Alternative 2.

Impacts to Recreation Resources and Activities

Impacts are the same as Alternative 2.

Impacts to Minerals and Mining

Impacts are similar to Alternative 2 but approximately half as much acreage would be affected by requirements for plans of operation for small mining operations (under five acres).

Impacts to Vehicle Access

Impacts are the same as Alternative 2.

4.5 BAT CONSERVATION IN THE SILURIAN HILLS

This amendment was developed to provide a strategy to manage representative habitat on public lands for sensitive bat species in the Silurian Hills. (Refer to Chapter 7, Figure 11 for a visual representation of the identified areas.)

4.5.1 ALTERNATIVE 1 (No Action) - Bat Conservation

Impacts to Wildlife

General Wildlife: Wildlife resources on affected public lands would continue to be managed under MUC M guidelines. These guidelines are based on a balance between higher intensity use and protection of public land resources. District, State and BLM-wide directives that address closure of mine shafts and adits would remain in effect. Sensitive biological resources would continue to potentially receive impacts from notice-level mining actions within 15 days after filing, giving less time for field exam and development of site-specific mitigation measures.

Special Status Animals: Protection of BLM sensitive and other bat species known to reside in wintering or nursery roosts within inactive mines would occur on a case-by-case basis as mining notices and other proposals are received. Present difficulties in responding in a short time with effective mitigation measures that minimize impacts to bats and other mine-dwelling wildlife would continue. Route designations would occur under MUC M guidelines. The use of route designation to effect route closures or seasonal restrictions for the benefit of bats and other mine dwelling wildlife would be limited by the current wildlife inventory base.

Impacts to Cultural and Native American Values

Current management practices will continue. Sensitive cultural resources would continue to potentially receive impacts from notice-level mining actions within 15 days after filing, giving less time for field exam and development of site-specific mitigation measures. No site-specific impacts to cultural resources have been identified. For other surface disturbing proposals, site-specific analysis and mitigation would occur prior to ground disturbing activities.

Impacts to Recreation Resources and Activities

Alternative 1 consists primarily of activities already identified in the CDCA Plan for the conservation and recovery of special status species and in follow-up implementation activities for sensitive wildlife, including specifically for bats. Application of existing CDCA Plan route designation to conserve special status species and natural communities results in minor impacts to vehicular access, and therefore, to recreation. Primary recreation activities that may be affected include caving, rockhounding, vehicle touring, rock climbing and shooting. In many instances, gates are put across adits to allow bats

and other wildlife to enter and leave, but restrict access to the general public and their recreational experience. No irreversible and irretrievable commitment of recreation resources will occur.

Impacts to Minerals and Mining

Currently mining may occur on public lands in the affected area under MUC Moderate guidelines. These guidelines provide for smaller exploratory mining for locatables to occur with a minimum of environmental review, and proposals five acres and larger to be evaluated through environmental analysis, many within 30 days. No new impacts will be incurred through this alternative.

Impacts to Vehicle Access

Alternative 1 consists primarily of activities already identified in the CDCA Plan for the conservation and recovery of special status species and in follow-up implementation activities for sensitive wildlife, including bats. In applying the regulatory criteria which minimize harassment of wildlife or significant disruption of wildlife habitats, it is reasonable to conclude that the same criteria proposed for development through the NEMO Plan to conserve special status bats and their natural communities would be applied during the route designation process with or without this planning effort.

4.5.2 ALTERNATIVE 2 - Bat Conservation

Impacts to Wildlife

General Wildlife: Wildlife species that inhabit caves and abandoned mines would benefit from mitigation measures, route designations, and other measures developed in the habitat management plan to conserve special habitat features. Among these species are ringtail, spotted skunk, Say's phoebe, barn owl, chuckwalla, and some invertebrates.

Special Status Animals: A habitat management plan (HMP) would be developed that implements management direction provided in BLM bat management policies. The HMP would identify standard mitigation measures for proposed mining and other surface disturbing activities and changes in route use (e.g., seasonal closures) to benefit bats and mine-dwelling wildlife. Bat habitat would benefit from a more deliberate and focused strategy for protecting caves and abandoned mines from unmitigated effects of activities.

The review period for site analysis and application of mitigation measures for bats would be increased from 15 days to 30 days resulting in more time to determine the measures that are applicable and appropriate.

Impacts to Cultural and Native American Values

MUC change to L will enhance potential for identifying cultural resources associated with historic mining thereby providing additional opportunity for avoidance or

mitigation. Appropriate rehabilitation of historic period shafts and adits for bat habitat will enhance protection of any remnant cultural resources (historic period mining features). Site-specific analysis and appropriate mitigation would occur prior to ground disturbing activities. In addition, the HMP may identify biological mitigation measures for proposed mining and other activities that could mitigate cultural impacts.

Impacts to Recreation Resources and Activities

Under Alternative 2, it is reasonable to expect that the HMP will identify some route restrictions. This may result in some caves requiring a longer walk to access or with seasonal restrictions on motor vehicle access, but the sought-after recreation activities will still be available. Additional site-specific restrictions on access to inactive mines could limit recreational opportunities for rockhounders and history buffs.

Impacts to Minerals and Mining

Reclassification of 7,400 acres of public lands from Moderate to Limited would require an approved Plan of Operations prior to conducting any surface disturbing activities. Mining activity is expected to continue in the area. This would result in increase permitting times and costs for operations of five acres or less. Specific mitigation measures to be developed as part of the HMP would likely result in additional impacts, such as seasonal restrictions and installation of bat gates during mine closure. These impacts would be further evaluated during HMP planning.

Impacts to Vehicle Access

This alternative would result in minor to moderate negative impact to vehicle access based on analysis and route closures and seasonal limitations identified during HMP

planning. Additional public input and review would occur during site-specific planning.

4.5.3 ALTERNATIVE 3 (Preferred) - Bat Conservation

Impacts to Wildlife

General Wildlife: See the following discussion for Special Status Animals.

Special Status Animals: Impacts of this alternative are the same as Alternative 1 except: MUC M would be changed to L and provide for more time to conduct site-specific analysis and develop mitigation measures, and route designations would occur under MUC L guidelines and consider the needs of bats.

Impacts to Cultural and Native American Values

MUC change to L will enhance potential for identifying cultural resources associated with historic mining thereby providing additional opportunity for avoidance or

mitigation. Appropriate rehabilitation of historic period shafts and adits for bat habitat will enhance protection of any remnant cultural resources (historic period mining features). Site-specific analysis and appropriate mitigation would occur prior to ground disturbing activities.

Impacts to Recreation Resources and Activities

Impacts are the same as Alternative 2.

Impacts to Minerals and Mining

Reclassification of 7,400 acres of public lands from Moderate to Limited would require an approved Plan of Operations prior to conducting any surface disturbing activities. Mining activity is expected to continue in the area. This would result in increase permitting times and costs for operations of five acres or less.

Impacts to Vehicle Access

Impacts would be similar to Alternative 2 but may be less since route designation will not be looked at through an HMP.

4.6 RELEASED LANDS: MUC OF RELEASED WSA's

4.6.1 ALTERNATIVE 1 (No Action) - Released Lands

The CDCA Plan values and rationale for the original designation of MUC within released lands have been described in Appendix A of the Final Environmental Impact Statement and Proposed Plan (September, 1980), according to Planning Area (see Land Use Plan Map 1 insert with the CDCA Plan for Planning Area boundaries and designations). This alternative would result in a mixed mosaic with approximately 315,950 acres managed under MUC L guidance and 152,350 acres managed under MUC M guidance. (Refer to Chapter 7, Figure 5a for a visual representation of the identified areas.)

Impacts to Vegetation

There would be no direct impacts to vegetation from MUC management as described above. Impacts described from MUC management are indirect. No released lands addressed in this amendment were originally assigned MUC Intensive; the differences in alternatives are between different mixes of MUC Limited and Moderate. The major effect on vegetation is based on the handling of small mining notices. Within MUC M, exploratory (as opposed to development) notices under 5 acres are not a federal action, whereas within MUC L a plan of operations is required, which includes mitigation to protect natural resources, such as individual plants, sensitive plant communities (e.g., riparian and wash areas) and prevent the spread of exotic invasive weeds. Under the no action alternative, potential for negative impacts to occur would continue at the same level which means some vegetation may continue to receive impacts without the opportunity for mitigation of effects, and potential for beneficial impacts from avoidance and other mitigation would continue for activities five acres and larger.

There are also indirect beneficial impacts to resources from route designation under MUC L parameters, but these would be analyzed on a site-specific basis and can not be readily quantified with some exceptions. In particular, with respect to washes, resource values associated with washes would receive greater protection under MUC L parameters for route designation than under MUC M. From the standpoint of vegetation values, the No Action Alternative cumulatively would be less favorable than other Alternatives, which would provide for more released polygons to have routes designated under MUC L guidelines.

Impacts to Wildlife

There would be no direct impacts to wildlife. For indirect impacts see vegetation discussion above.

Impacts to Soil, Water, and Air

There would be no direct impacts to soil, water, and air. For indirect impacts see vegetation discussion above.

Impacts to Cultural Resources and Native American Values

There would be no direct impacts to cultural resources and Native American values. For indirect impacts see vegetation discussion above.

Impacts to Utilities

No new impacts to utility corridors would be expected from continued use of the existing MUC designation. There are no differences based on MUC designation in management of utilities within corridors.

Impacts to Minerals and Mining

Under the no action alternative, potential for negative impacts to occur would continue at the same level, and potential for mitigation would continue at the same level. From the standpoint of exploration and mining, the No Action Alternative cumulatively would be more favorable than Alternative 2 or 3 which would provide for fewer released polygons to return to MUC M. The advantage would be the greater applicability of Notice level activity, including in areas with higher mineral potential. On a polygon-specific basis, the other alternatives may be preferable, depending on the MUC proposed (see Table 2-9 and 2-10).

Impacts to Vehicle Access

The major effect on access that may occur as a result of Alternative 1, is the increased area of MUC M relative to MUC L. Within MUC M, existing routes are designated open unless specifically closed, whereas within MUC L an approved route network is identified. As with potential impacts to resource values, any impacts to access would be anticipated to occur at the site-specific level rather than at the landscape level. The actual impacts would generally be limited to areas with multiple access options or resource conflicts. In some portions of the Planning Area, access options are restricted by topography and the limited number of existing routes. Where flexibility does exist, MUC M could provide additional access. Within MUC M areas motorized access in washes may also be greater. Generally, the NEMO Planning Area does not have a substantial wash network, but there are released lands where washes do provide access, particularly in the lower elevations that connect to the larger riparian features. On a site-specific basis, therefore, route designation can be expected to result in fewer open routes on released lands identified as MUC L under this alternative

4.6.2 ALTERNATIVE 2 - Released Lands

Released lands will be designated consistent with the original CDCA Plan findings except in 17 locations where the MUC of the surrounding lands have been redesignated different than the original MUC (Alternative 1). A total of 401,400 acres of public lands released from wilderness review by Congress would be managed as Multiple-Use Class

Limited and 66,900 acres of public lands as MUC Moderate. See Table 2-10 in Chapter 2 for a list of the 41 released areas.

Impacts to Vegetation

Impacts would be similar to Alternative 1 (No Action) except that the cumulative addition of 85,450 acres in MUC L would result in potential indirect beneficial impacts to vegetation on those lands, as discussed under No Action. On a parcel-by-parcel basis, this alternative would be potentially have fewer impacts to vegetation in 5 areas, and partially so in another 2 areas. It would have potentially higher impacts to vegetation in 8 areas, and partially so in another 2 areas.

Impacts to Wildlife

There would be no direct impacts to wildlife. For indirect impacts see vegetation discussion above.

Impacts to Soil, Water, and Air

There would be no direct impacts to soil, water, and air resources. For indirect impacts see vegetation discussion above.

Impacts to Cultural Resources and Native American Values

There would be no direct impacts to cultural resources and Native American values. For indirect impacts see vegetation discussion above.

Impacts to Utilities

Impacts would be the same as Alternative 1 (No Action).

Impacts to Minerals and Mining

Impacts would be the same as Alternative 1 (No Action) except that the addition of 85,450 acres in MUC L would result in potential impacts to small exploratory mining activities on those lands, as discussed for other MUC L lands under No Action. On a parcel by parcel basis, this alternative would be potentially more mineral exploration friendly in 8 areas, and partially so in another 2 areas. It would be less mineral exploration friendly in 5 areas, and partially so in another 2 areas. Operations five acres and larger would be unaffected.

Impacts to Vehicle Access

Impacts would be the same as Alternative 1 (No Action) except that the addition of 85,450 acres in MUC L could result in potential additional limitations to access during route designation on those lands, as discussed under No Action. On a parcel-by-parcel

basis, this alternative would be potentially more access friendly in 8 areas, and partially so in another 2 areas. It would be less access friendly in 5 areas, and partially so in another 2 areas.

4.6.3 PREFERRED ALTERNATIVE - Released Lands

Released lands will be designated consistent with the original CDCA Plan findings except in 11 locations where the MUC of the surrounding lands have been redesignated and/or new data substantiate need. A total of 392,920 acres of public lands released from wilderness review by Congress would be managed as Multiple-Use Class Limited and 75,380 acres of public lands as MUC Moderate. See Table 2-10 in Chapter 2 for a list of the 41 released areas and the 11 that would be affected.

Impacts to Vegetation

Impacts would be similar to Alternative 1 (No Action) except that the cumulative addition of 76,970 acres in MUC L would result in potential beneficial impacts on those lands, as discussed under No Action. On a parcel by parcel basis, this alternative would be potentially more resource friendly in 5 areas than no action, and partially so in another 4 areas. It would be partially less resource friendly in 2 areas.

Impacts to Wildlife

There would be no direct impacts to wildlife. For indirect impacts see vegetation discussion above.

Impacts to Soil, Water, and Air

There would be no direct impacts to soil, water, and air resources. For indirect impacts see vegetation discussion above.

Impacts to Cultural Resources and Native American Values

Impacts are the same as Alternative 2.

Impacts to Utilities

Impacts would be the same as Alternative 1 (No Action).

Impacts to Minerals and Mining

Impacts would be the same as Alternative 1 (No Action), except that the addition of 76,970 acres in MUC L would result in potential impacts to small exploratory mining activities on those lands, as discussed under No Action. This alternative would be slightly more beneficial to mining than alternative 2 on a per-acre basis. On a parcel-by parcel-basis, this alternative would be partially more mineral exploration friendly in 2 areas than no

action. It would be less mineral exploration friendly than no action in 5 areas, and partially less so in another 4 areas.

Impacts to Vehicle Access

Impacts would be the same as Alternative 1 (No Action). The addition of 76,970 acres in MUC L could result in potential additional limitations to access during route designation on those lands, as discussed under No Action. On a parcel-by-parcel basis, this alternative would be partially more access friendly in 2 areas. It would be less access friendly in 5 areas, and partially less so in another 4 areas.

4.7 GREENWATER CANYON ACEC DELETION PROPOSAL

4.7.1 ALTERNATIVE 1 (No Action) - Greenwater

Impacts to Cultural and Native American Values

Any currently undiscovered cultural resources would be afforded the highest level of protection. The area would continue to be managed under the existing ACEC Management Plan. Regular monitoring of resources would continue to occur by professional archaeologists and other resource specialists with archaeological training (e.g., Law Enforcement Rangers). Other protective measures would be provided if activities are proposed in the affected area. (Refer to Chapter 7, Figure 12 for a visual representation of the identified area.)

Impacts to Recreation Resources and Activities

This alternative will have no effect on motorized touring, since the area contains very few routes of travel. The area would continue to be managed as an ACEC and the ACEC Management Plan will provide the basic management direction. This plan includes a prohibition on camping within the ACEC so it does affect potential for overnight use of the area. Some potential for this type of recreation exists since it is located immediately adjacent to and north of Death Valley National Park.

Impacts to Minerals and Mining

Mineral activities in the area currently require plans of operation and special mitigation strategies to prevent impact to any important cultural or other natural resources.

4.7.2 ALTERNATIVE 2 (Preferred) - Greenwater

Impacts to Cultural and Native American Values

No known sites would be impacted. As yet undiscovered cultural resources within the remaining portion of the existing ACEC that would be deleted by this alternative would be managed under MUC L. Site-specific analysis would occur prior to ground disturbing activities to avoid or mitigate potential impacts.

Impacts to Recreation Resources and Activities

Deleting Greenwater Canyon as an ACEC would result in somewhat increased recreational opportunity. The area will be managed under MUC Limited guidelines. There would be increased camping opportunities since under this alternative stopping, parking and camping would be allowed within 300 feet of routes (CDCA Plan Amendment, 1982).

Impacts to Minerals and Mining

Impacts are the same as Alternative 1. Lands requiring special mitigation strategies in the BLM ACEC Plan to prevent impact to any important cultural or other natural resources that would have affected mining are now located within Death Valley National Park boundaries.

4.8 ORGANIZED COMPETITIVE VEHICLE EVENTS

4.8.1 ALTERNATIVE 1 (No Action)

Alternative 1 (No Action) assumes that point-to-point competitive racing would continue on the designated race course in accordance with the provisions set forth in the California Desert Conservation Area Plan. The Barstow-to-Vegas Race Course would remain as delineated on the California Desert Plan Land Use Map and the text under the Competitive Events Section of the Recreation Element of the Plan would remain.[6] (Refer to Chapter 7, Figure 14 for a visual representation of the identified alternatives.)

The 1989 monitoring report for the Barstow-to-Vegas focused on course width restrictions, spectator controls, special flagging and disqualification procedures. Post race monitoring indicated a significant amount of non-compliance relating to these requirements which impacted numerous resources. The 1989 event was the most carefully planned in the history of the Barstow-to-Vegas by District 37. Of the 97 special stipulations for the 1989 permit, 23 (25%) were violated.

Impacts to Vegetation

General Vegetation: Impacts to vegetation communities would differ depending on course width, vegetation communities crossed, and frequency and timing of use. Direct impacts would consist primarily of loss of individual plants through crushing. Indirect impacts would include disturbance of soil structure supporting vegetation, promotion of weedy species through surface disturbance, loss of soil after loss of soil-holding cryptogamic crusts, loss of seeds in the soil, and reduction of soil moisture through compaction. Non-native invasive plants common to the region also pose an increased potential for larger fires. Large and repeated fires in an area can result in vegetative type conversion, with shrublands eventually becoming grasslands that can foster a fairly regular fire regime. Impacts are greatest at start and pit areas where vehicle use is intensive. Spectators are often widely dispersed along the course, and driving four-wheel and two-wheel vehicles off of the authorized route network can result in extensive disturbance of vegetation. Riders often visit the race area and practice on the course in the weeks before a race; rider control is very limited at this time.

Through repeated use, competitive event courses substantially widen as a result of racers straying from the course (1989 Barstow to Vegas Post Race Report 1/25/90 and EA CA-060-EA-90-01, Appendix II: Summary Monitoring Report Covering Races Held from 1983 through 1988). This widening of the course could have a substantial effect on vegetative composition along the route. Although most of these impacts (e.g., soil profile disruption and compaction, germination and cover site modification, and forb and shrub

[6] This alignment is no longer feasible due to the listing of the desert tortoise and establishment of the Mojave National Preserve. These changes in circumstances have made it impossible for the BLM to issue a permit for the race reasonably following the course shown on the California Desert Plan Land-Use Map as amended in 1982. See Findings of Fact and Conclusions of Law June 8, 1990 (U.S. District Court) (SA CV 90-267-JSL)

loss) would be limited to the event corridor itself, the potential for spread of invasive non-native plants and vegetative type-conversion would extend beyond the race corridor.

Data collected in areas outside desert tortoise habitat where the permitted course width was 100 feet showed that straying and course widening occurred. The course width in the area to the west of a pit area was measured at 260 feet and near Solomons Knob several transects noted race vehicle tracks over 90 feet outside the permitted course width.

The route in sections 6, 7 and 18 in T. 15 N., R. 10 E. is marked on an existing road that is 7-9 feet wide. Much of this road, especially south of the Wander Mine has numerous large corrugations, which appear to have caused departure of vehicles from the roadbed. In section 6, the zone of principal impact was locally widened to 40 feet. There is evidence of substantial motorcycle and 3-wheel ATV play off the road in all directions around the road junction at the Wander Mine, causing substantial shrub damage and road braiding.

As a result of shortcutting and overrunning in washes, the 1989 event caused extensive damage to vegetation and breakdown of wash banks. There is extensive tracking by motorcycles, 3- and 4-wheel ATVs, and 4-wheel vehicles outside the shallow borrow pit in which Pit 2 is located, especially on the east side. The tracks occur in the well-vegetated wash adjacent to the two small rock outcrops on the east side of the road, on the steep 6-10 feet high wash banks, and on the terrace above the wash. Slots to 8 inches wide and 10 inches deep were cut by motorcycles climbing the wash bank. Individual motorcycle tracks average 8.8 inches wide and 1.5 inches deep, which is equivalent to 1 acre of surface disturbance per 11.3 miles of travel, and about 24 short tons of soil displacement per mile (soil density assumed to be 1.6 gm/cc).

Impacts of dust accumulation on plants are another concern. Higher than normal levels of dust on leaf surfaces may reduce cooling efficiency of the plants and cause added stress. Levels of dust on leaf surfaces, growing points, and overall effects on plant production have not been studied.

Special status plants: Mitigation measures commonly applied would avoid races on routes traversing known habitat of special status plants. However, inventories of special status plants are incomplete.

Biological Soil Crusts: Crusts may be disturbed by tires (of both racers and spectators) that exert compressional and shear forces. The crust response to these disturbances is variable depending on soil moisture and depth of disturbance. Moist crusts are better able to withstand disturbances than dry soils. Many of the biological crust species are not mobile and cannot survive burial; burial can result in the loss of mosses, lichens, green algae and small cyanobacteria. The overall result of burial is a greatly simplified soil crust community. Within existing routes soil crusts are essentially absent; the greatest impacts would occur where vehicles leave the traveled route.

Even a single pass of the stray vehicles destroyed the lichen crust that is a principal surface stabilizer between shrubs in this area. Many deeply rutted parts of the route will capture runoff from crossing drainage channels. Where the route is in an active wash, the deep corrugations will trap runoff and prevent the wash from functioning as a runoff distributor.

Riparian/Wetland: Mitigation measures commonly applied would avoid races on routes traversing riparian or wetland areas where feasible. Where avoidance is not feasible MUC guidance and mitigation would be utilized consistent with fallback standards.

Noxious Weeds: The impacts are the same as impacts for Alternative 1 of standards and guidelines.

Impacts to Wildlife

General Wildlife: Wildlife habitat values would be reduced where vegetation is disturbed (see General Vegetation discussion above). Loss of forage, changes in forage species composition, and loss of cover from predators and weather would result from disturbance of vegetation. In addition, animals can be run over above ground or below ground (burrow crushing). Soil compaction disrupts burrow suitability. Common, widely adaptive wildlife species could benefit from this habitat change, while rare, narrowly adapted species usually suffer. In general, it can be expected that biodiversity would be reduced along race routes where vegetation and soil disturbances and changes occur.

Wildlife activities would be disrupted in the short term. Disruptions would take place not only the race event but during pre-riding of the course as participants practice. The disrupting effects on animals would be largely a function of the season. The spring and summer are most critical when animals are breeding, nesting, and rearing young. Displacement during these seasons can result in reproductive failure for that year. Changes in behavior patterns could occur at any season; such changes could include departure from or avoidance of the area or attraction of scavengers.

Wildlife may be injured or killed by participant motorcycles or support vehicles during the race. Individual animals may be killed on roads leading to the start, finish, pits, and spectator areas by increased traffic associated with the event. Large species, such as coyotes and kit foxes, could be temporarily displaced during the event into adjacent areas. Less mobile species, such as rodents or species inactive at this time of the year (many reptiles), would be vulnerable to crushing or entombment due to burrow collapse. The effect of increased noise levels on small species has not been widely studied. There is controversy on the potential impacts of noise on wildlife.

Habitat degradation along off road portions of the course would reduce forage for herbivorous species, and could reduce populations of species with relatively small home ranges such as kangaroo rats (*Dipodomys spp.).*

Any food items and trash left along the course by spectators may also provide for temporary use of the area by opportunistic predators such as ravens and coyotes. Increased predation rates on wildlife prey populations may also result.

Strategies to minimize the potential for impacts to wildlife and vegetation include rider education, course marking, special habitat avoidance, habitat reclamation, seasonal restrictions, and event design changes.

Special Status Animals: Where events pass through habitat of a listed animal, there is the potential for a taking through harm or harassment. The desert tortoise has the most extensive range of any listed species in the desert, and its habitat is difficult to avoid in race course selection. The B-to-V passes through extensive portions of Category I desert tortoise habitat (also critical habitat); some other areas of tortoise habitat serve as linkages between major tortoise populations.

Habitat loss for special status animals, especially desert tortoise, are a result of factors described in the discussion of General Vegetation above. The wider a competitive event race course becomes, the greater the potential impacts and likelihood of significant population effects. Heavily used route corridors provide for invasion of weedy species, which in turn may result in type-converted areas that provide reduced cover for hatchling and juvenile tortoises, making them susceptible to predation and death from exposure. The results are areas of reduced tortoise density.

Strategies to minimize the potential for take (especially for desert tortoise) include rider and spectator education, course marking, habitat damage reclamation, seasonal restrictions and “clearing” or physically removing tortoises from the race course immediately before and during the event by trained biological monitors. Sometimes spectators are restricted, but compliance has been low because of the difficulty in controlling people over a large area. Many of the mitigation measures have been ineffective based on limited BLM law enforcement resources available to prevent pre-riding in and around the course.

Desert tortoises may be subject to both direct and indirect impacts associated with race activities. In the context of this analysis, a direct impact is defined as the killing, injuring or handling of tortoises and/or the disturbance or crushing of tortoise burrows by actions of participants in the event (racers, pit crews, spectators, etc.). Individual tortoises could be injured or killed by motorcycles during the race, or by support and spectator vehicles. Tortoises may also be crushed by collapse of burrows. Any tortoises coincidentally active at the time of the event could be subject to vandalism or collection. Potential for tortoise activity during this time of year is low, but could occur if temperatures are unseasonably worm or if rainfall occurs immediately prior to the race. Generally, the likelihood of direct kills or injuries to tortoises by being hit by a race vehicle or spectator vehicle is relatively low. Direct impacts on the tortoise from the crushing of burrows is more likely. Barricade flagging of identified tortoise burrows and continuous ribboning where there is evidence of tortoise presence is expected to be partially effective in reducing direct impacts to burrows. Such measures would not assure the prevention of

direct impacts to burrows and possibly tortoises. In the 1989 race, 3 of the 12 flagged burrows in the Stateline Resource Area, Nevada, were impacted by racers. There is also concern that, despite careful pre-race inspections, all burrows which are potentially at risk would not be discovered and, therefore, flagged. Several unflagged burrows were discovered during the 1989 post-race monitoring.

The extent of habitat disturbance is a key consideration in assessing the indirect impacts of this race on the desert tortoise. The proposed 100-foot wide race corridor except in areas where there is evidence of desert tortoise and on roads and through washes. A 60-foot corridor would be established in areas where there is evidence of tortoise. The stipulated course through desert tortoise habitat in 1989 was only 25 feet. Monitoring of the 1989 race showed that the average width of the disturbed area in tortoise habitat was 55 feet - or 6.6 acres actually disturbed per mile.

Based on the results of monitoring the effectiveness of past race stipulations to constrain riders within a corridor width, it is likely that adverse impacts to the desert tortoise and its habitat by straying and course widening would occur. The increased width would encourage future OHV use, which could result in the increased take of tortoises and additional loss of tortoise habitat. Additionally, the widening of the course may contribute to habitat fragmentation.

The transect data through tortoise habitat showed that straying extended out from the corridor boundaries an average of 30 feet. An analysis of the data (transect data, photographs, and BLM staff observations) indicated that the corridor flagging was not effective at minimizing the straying of vehicles.

Six possible tortoise burrows were observed, of which three appeared to be active; I made no special search for burrows. None of the burrows was marked and one burrow was closer than 10 feet to the main race route. (Personal observation of the 1989 event from Howard Wilshire from USGS. He has monitored the B-to-V since 1974 as part of his studies of surface processes in arid lands. His observations were made before, during, and after the November 25, 1989 race on a 3.8 mile cross-country segment in desert tortoise habitat, and on December 1-2, in the Baker, West of Baker, Turquoise Mtn., Solomons Knob, and Valley Wells 7.5' quadrangles.)

In several wash routes, unmarked possible tortoise burrows (none were clearly active) were observed in the areas of heavy impact. Unidentified burrows located in the vicinity of Pit 2 were crushed by single motorcycle and ATV passes.

The data collected throughout the Barstow Resource Area desert tortoise habitat indicated that corridor flagging was ineffective in restricting racers to within the stipulated corridor width. The resulting course was two to three times the stipulated width with additional trails and individual tracks established well outside the main trail.

Effects on listed species would depend upon species biology and behavior and race factors (e.g., season, number of participants, speed). Sensitive species such as bighorn

sheep, burrowing owls and bats, are likely to be impacted (ranging from temporary displacement from habitat to complete area avoidance). Effects are likely greatest where courses come near springs, yucca stands, boulder fields, caves and mines, and other special habitat features. For bats and bighorn sheep, all seasons are critical.

Impacts to Soil, Water and Air Resources

Soil: Soil disturbance and removal of vegetation associated with use of a competitive race course would result in increased wind and water erosion of affected soils. Reduced soil permeability and water storage potential and compaction within the race course would also occur with such use over time. Levels of impact would differ depending on soil type, slope, allowed race course width, specific race course segment and alignment, and frequency and timing of use. Some soils are affected to a higher degree seasonally, and all soil impacts become magnified at course turns and corners. On occasion, "artificial washes" are formed due to soil erosion and altered water drainage along competitive race courses, particularly on the steeper grades. Over time, this erosion can lead to soil incision, where deep gullies are formed or this impact can fan out over the landscape in a series of shallower "rill" gullies. Road grading activities, over time, can minimize or accentuate this soil incision and erosion, dependent upon road segment circumstances and grading techniques used.

Vehicles would cause surface compaction and displacement of surface soils along the course and at all pits. Soil impacts associated with past events were determined to be a reduction in desert pavement coverage and increased development of soft, powder-like materials is very susceptible to wind and water erosion. Field investigation has determined that over the years this race has been run, approximately 2,000 acres of desert habitat have been disturbed annually. Some of this annual disturbance is to new areas (course changes) but the majority of impacts are to the existing course. Soil nutrient levels are expected to decrease over the long term due to the removal of the vegetative cover, from the churning of the soil surface by race traffic, and through the mixing of nutrient poor soils with the more fertile soils associated with "plant islands."

The width of the principal zone of impact is 170 feet across Silver Dry Lake. Use of Silver Dry Lake caused disruption of the silt-clay crust, making the surface vulnerable to wind erosion.

As a result of shortcutting and overrunning in washes, the 1989 event caused extensive damage to vegetation and breakdown of wash banks. Individual tracks between heavily used braids average 8.7 inches wide and 1.7 inches deep, which is equivalent to 1 acres of surface disturbance per 11.4 mile of travel, and 27 short tons of soil displaced per mile (soil density assumed to be 1.6 gm/cc).

There is extensive tracking by motorcycles, 3- and 4-wheel ATVs and 4-wheel vehicles outside the shallow borrow pit in which Pit 2 is located, especially on the east side. The tracks occur in the well-vegetated wash adjacent to the two small rock outcrops on the east side of the road, on the steep 6-10 feet high wash banks, and on the terrace above the

wash. Slots to 8 inches wide and 10 inches deep were cut by motorcycles climbing the wash bank. Individual motorcycle tracks average 8.8 inches wide and 1.5 inches deep, which is equivalent to 1 acre of surface disturbance per 11.3 miles of travel, and about 24 short tons of soil displacement per mile (soil density assumed to be 1.6 gm/cc).

Air Quality: Such events cause a temporary increase in the amount of oxidants and carbon monoxide along the course. The increase in gaseous matter within the air basins is not considered significant. However, great quantities of dust and particulates are often suspended in the air near the start of such competitive events and anywhere riders stray from the course.

Air quality standards would be temporarily exceeded based on measurement of total suspended particulates. This violation would be temporary and not an unusual event in the wind blown areas of the desert. Temporary increases in the amounts of oxidants and carbon monoxide on all portions of the course are expected. Although the air quality reduction is temporary, significant impacts from these particulates to spectators, participants, support personnel, and other recreational users in the race area are likely to occur. The atmosphere surrounding the event would be impacted by the generation of dust and temporary emissions result in a short-term (approximately 14 hours) reduction in air quality. Dust was found to be a major contributor to off-course straying due to impairment of rider visibility.

Especially apparent in the Kingston Wash area was the considerable dust raised by the passage of motorcycles and ATVs and subsequent settling of the dust up to 150 yards from the course. In area of desert pavement, this created a noticeable visual contrast between the dark pavement beyond the dusting effect and the affected areas closer to the course.

Mitigation strategies could include mandating the use of existing routes within the race course for events, active rehabilitation of straying and erosion impacts following events and maintenance of a single course within the race course for events.

Wilderness

Unanticipated impacts have affected WSAs during past Barstow-to-Vegas events and would probably impact designated Wilderness Areas today. These impacts have been in the form of shortcutting and intrusion in areas where the course utilized roads along the boundaries of WSAs.

The area outside of Pit 1, showed fresh tracks in Wilderness Study Area 242 (now known as the Soda Mountain Wilderness Study Area) of which the major part of the race traffic was actually in WSA 242 on the dry lake surface.

Impacts to Cultural and Native American Values

There are no known impacts to cultural resources or Native American values. Undiscovered sites within or adjacent to event routes may be impacted. Prior to permitting routes are surveyed for potential effects to cultural resources and these surveys may result in reroute of the event. Unsurveyed areas adjacent to routes could be subject to impact from vehicles that stray from the course.

Impacts to Cattle Grazing (and Allotments)

There may be short-term disruption of on-going grazing activities in areas where races are authorized through lease areas. The potential affect would depend upon level of and types of concurrent grazing activities. Range improvements within or adjacent to event routes may be impacted if a point-to-point motorcycle vehicle event is authorized through or within an allotment. These impacts can be mitigated through close coordination with the grazing lessee including following his instructions concerning closure of gates and avoidance of high-use areas.

Impacts to Recreation Resources and Activities

The last Barstow-to-Vegas motorcycle race occurred in 1989; however, there are requests to reestablish this event. Although the CDCA Plan provides for competitive vehicle events, it is unlikely that such events would be permitted on the remnants of this course as identified in the CDCA Plan given past experiences with these events and the potential for adverse impacts to the desert tortoise and its habitat. With adequate funding and personnel, some shorter length competitive event may be viable, although it would include only portions of the existing race course, and would require identification of suitable start and staging areas on private lands.

Competitive events can be allowed in accordance with MUC and Recreation Element guidelines. Given the expanse of designated wilderness and critical habitat for the desert tortoise, it is difficult to locate a suitable race course in the NEMO Planning Area. In addition, the review process under NEPA (1969) and the Endangered Species Act would require considerable time and result in an uncertain outcome. Planning for competitive events therefore is difficult at best. A viable competitive event outside of OHV open use areas has not occurred in recent years because of resource conflicts, problems with course location and the amount of skilled and technical labor costs necessary to hold such an event in an environmentally sound manner.

Recreationists would have the opportunity to participate in the race since the termination of the race in 1990. Many spectators would have the opportunity to watch the event.

The use of the BLM ranger staff for race monitoring and enforcement activities would reduce law enforcement and visitor services in other areas. Resource protection, law enforcement, and safety/rescue operations would be diminished throughout the desert area on one of the busiest holiday weekends.

Casual and dispersed recreation uses in the vicinity are likely to be disrupted during the running of the race. Use of lands in and around the area of the race would suffer some access problems. Noise levels from the race would disturb the solitude in areas within a few miles of the course. Dust pollution may deter scenic values for the duration of the one-day event, and camping may be more crowded in the vicinity of Clark Mountain and Valley Wells/Cima area.

Impacts to Vehicle Access

No additional vehicle access would be provided with this alternative. The condition of some open routes used for transportation purposes located in proximity to, or forming, a race course could become degraded over time as a result of competitive events and spectator visitation. The severity of this impact would depend upon the nature of the competitive event, i.e., motorcycle or ATV quad, allowed race course size, specific race course segment, and frequency and timing of use. The degree of open route maintenance associated with this alternative is anticipated to be higher than other alternatives.

In summary, course width exceeding stipulated widths occurred throughout the length of the course. These types of impacts were significantly greater than anticipated and stipulated. As a result of shortcutting, braiding, and travel off existing routes, new route spurs were created and may encourage unauthorized use into wilderness areas and other fragile undisturbed areas.

The width of the zone of principal impact (including all heavily used braids) ranged from about 10 feet to 140 feet. Course widening (over the width of the active wash or 25 feet, occurred at sharp turns in the active wash, and at places either just behind or in front of deep corrugations (estimated amplitudes to more than 1 foot) in the flagged route. The 1989 race substantially enlarged pre-existing corrugations (from previous races) and created new ones. Widening of the flagged route occurred whether or not construction ribbon was placed to discourage it. As a consequence, substantial new damage was done to vegetation and animal burrows.

The route in sections 6, 7 and 18 in T. 15 N., R. 10 E. is marked on an existing road that is 7-9 feet wide. Much of this road, especially south of the Wander Mine has numerous large corrugations that appear to have caused departure of vehicles from the roadbed. In section 6, the zone of principal impact was locally widened to 40 feet. There is evidence of substantial motorcycle and 3-wheel ATV play off the roads in all directions around the road junction at the Wander Mine, causing substantial shrub damage and road braiding.

Between the desert tortoise habitat and Pit 1, areas exhibited straying of up to a total of 280 trails average between 3 and 10 feet wide. The actual course utilized by the majority of racers averaged 160 feet wide. The minimum course width measured through this area was 108 feet and the maximum - 260 feet.

At Silver Lake, the majority of racers left the course and drove across the dry lake parallel to the course, Silver Lake Road. The road width averaged 30 feet berm to berm

and the course actually utilized by the racers averaged 146 feet. Straying extended out an additional 71 to 142 feet an average of 114 ft.) from the actual course.

In one area where racers were restricted to the road surface between berms, at sharp corners, racers severely shortcut the corner despite the presence of a race marshall.

Placement of placards, appeared to be spaced at distances too great to adequately define the corridor boundaries. As such, these control measures were ineffective. Generally, where opportunities to shortcut the course or avoid washboard were available, numerous racers took advantage of these opportunities thereby widening the course beyond its stipulated width.

Between this unnamed wash and Kingston Wash, the course proceeded along a dirt road. Little straying outside the course boundaries were observed in this section. However, once the racers entered Kingston Wash, another portion of the course identified for corridor flagging, considerable straying occurred. As in the previous wash, course control markings were sporadic and ineffective. Numerous racers once again ignored the flagging and placards to choose the fastest route available.

Impacts to Socioeconomic

Adverse impacts from Alternative 1 (No Action) are considered negligible. The Barstow to Vegas competitive event has not been run for over ten years. Should such an event be held, communities along the course, particularly in Barstow and Baker, could incur some economic benefit from the sale of goods and services to participants, their families, and to spectators. The past event has attracted up to 5,000 individuals. A similar economic benefit is currently provided with the non-competitive dual sport events currently being authorized. However, a slight degree of increased economic benefit over the current baseline, from the sale of goods and services to participants, would likely be provided with this alternative.

Contacts with city governments and local businesses in the affected environment indicate few adverse impacts. The Barstow Chamber of Commerce had an annual income from retail sales taxes of $278,231,000 for 1989. They estimated that the Barstow-to-Vegas event brings approximately $300,000 to the city's economy. The Baker Chamber of Commerce and Stateline (Primm) casinos estimate that levels of funds generated from this event ($10,000 for Baker and $50,000 for Stateline (Primm)) contribute only a minimal amount to their city's annual income. These small communities are situated along I-15 and derive their income from tourists and travelers stopping for gas, food, or rest. The rooms at the Stateline (Primm) casinos are usually booked for all holidays and weekends throughout the year.

District 37 estimates that each racer spends approximately $910 on this event, much but not all in adjacent communities. This includes expenditures on bike race preparation, entry fee, fuel, lodging, food and gambling. Pit crewmembers are estimated to spend about $600 each on food, fuel, lodging and gambling. About $102,000 is earned by the

club from this race. This income is a major contribution to other competitive events held by District 37 in the Southern California area.

4.8.2 ALTERNATIVE 2

Amend the California Desert Conservation Area Plan to:

a) Remove delineation of the Barstow-to-Las Vegas Race Course from the Land Use Map of the California Desert Conservation Area Plan, (1980 as amended).

b) Replace the text in the section titled Organized Competitive Vehicle Events under the Recreation Element of the CDCA Plan with: Competitive vehicle events may only be held in MUC I.with an area designation of "Open".

c) Amend the MUC Guidelines to delete all reference to organized competitive vehicle events in MUC L and M, under recreation.

Impacts to Vegetation

General Vegetation: Crushing of vegetation along courses by riders, spectators, and pre-event riders would not occur. Changes in species composition resulting from disturbance and compaction of soil, destruction of microbiotic soil crusts, disruption of the seed bed, introduction of weedy plant species, and subsequent increases in fire frequency and size would be reduced.

Special Status Plants: The risk of damage to special status plants or their habitat from riders, spectators, and pre-event riders would be removed.

Biological Soil Crusts: Disturbance of soil crusts from riders, spectators, and pre-event riders would not occur.

Riparian/Wetland: Impacts are the same as Alternative 1.

Noxious Weeds: The impacts are the same as the impacts for Alternative 2 of standards and guidelines.

Impacts to Wildlife

General Wildlife: This alternative would benefit wildlife species as disturbance and mortality from the events and associated spectator and pre-riding activities would be removed. Removal of racing would allow for continued soil and vegetation recovery in many areas along the B-to-V course. Degradation of habitat along race courses would not occur. These and other effects described more fully in Alternative 1 would not occur. Some areas of the B-to-V course may need active reclamation techniques in order to repair soil damage, eliminate erosion gullies and restore vegetative cover. Some increase

in disturbance of wildlife and habitat might occur in OHV open areas if more races are added there; however, wildlife values are low in OHV open areas.

Special Status Animals: This alternative would benefit the desert tortoise and possibly other special status animals by removing direct mortality from runovers and by facilitating continued soil and vegetative recovery. The reduced potential for vegetative type-conversion associated with spread of weedy species and wildfire would similarly benefit the desert tortoise indirectly over the long term. Only slight, if any, increases above current levels of desert tortoise impact would be anticipated within OHV open areas.

Impacts to Soil, Water and Air Resources

By removing the possibility of permitting such an event outside of designated OHV open use areas, soil improvement would continue to occur unimpeded along the designated competitive race course. Some areas of the B-to-V course may need active reclamation techniques in order to repair soil damage, eliminate erosion gullies and restore vegetative cover. Continued moderate increases in soil and short-term air quality impacts would be anticipated within the OHV open use areas as a result of displaced racing activity.

Impacts to Cultural and Native American Values

No Impacts.

Impacts to Cattle Grazing (and Allotments)

No Impacts

Impacts to Recreation Resources and Activities

Deletion of the Barstow-to-Vegas course from the CDCA Plan would have minimal adverse affects to opportunities for competitive vehicle events compared to Alternative 1. If the Barstow-to-Vegas race is deleted and no provisions are made for competitive vehicle events except in OHV open areas, potential opportunities for this form of recreation could be diminished.

Impacts to Vehicle Access

Impacts are the same as Alternative 1 except the degree of open route maintenance located in proximity to the B-to-V race course is anticipated to be lowest of all alternatives presented.

Impacts to Socioeconomic

Communities along race courses, particularly Barstow and Baker, would lose some economic benefit from the sale of goods and services to participants, their families, and to

spectators. When it was run prior to 1990, the largest event, the B-to-V, attracted up to 4,000 to 5,000 individuals.

The race has been a major fundraiser for District 37 of the American Motorcycle Association and has provided funds to acquire liability insurance for other event sponsored by small affiliated clubs. The annual non-competitive dualsport event run along a similar course has partially replaced this economic benefit.

4.8.3 ALTERNATIVE 3: Amend the California Desert Conservation Area Plan to:

(a) Remove delineation of the Barstow-to-Las Vegas Race Course from the Land Use Map of the California Desert Conservation Area Plan, (1981 as amended).
(b) Delete the following text from the section titled "Organized Competitive Vehicle Events" under the Recreation Element of the Plan: …and one motorcycle race course. (The Barstow-to-Vegas Motorcycle Race Course is established running from Alvord Road to Stateline. See Supplemental information.)

This action would amend the Multiple Use Class Guidelines and the Recreation Element of the CDCA Plan to include the following additional criteria for point-to-point motorized vehicle events on all lands outside of Open Areas:

1) Limit travel to routes designated as open. The race course would be limited to route width and further narrowed where there are adjacent sensitive resources at risk.

2) Start areas shall be located in Multiple Use Class I or on private land, with landowner's permission. Finish and spectator areas shall be limited to suitable sites in classes M, I or on private land, with landowner's permission. All pit areas shall be limited to support crews.

3) The event shall not be permitted in wilderness areas, ACECs; critical habitat as designed by USFWS, identified cultural resource sites or districts, riparian areas, and other sensitive soils and habitat areas. The event shall not be permitted on historic trails and roads that are on or eligible for the National Register of Historic Places, designated National Historic Trails or other specified trails or routes.
4) Written permission from property owners to cross private property shall be provided to the BLM.

5) Permit stipulations shall be prepared for each event covering monitoring activities, reclamation plans, insurance, enforcement, penalties, race course alignment and markings, and other standard permit requirements.

6) The race shall be managed under timed-start conditions and participation limited to motorcycles and ATVs. Start waves would be limited to 25 riders or less, with a total maximum number of 500 riders.

Impacts to Vegetation

General Vegetation: Within DWMAs, impacts would be the same as Alternative 2. Impacts would be similar to those described in Alternative 1 outside of DWMAs, but important sensitive plant communities would be avoided.

Special Status Plants: Impacts would be similar to those described in Alternative 1 outside of DWMAs and within DWMAs impacts would be the same as Alternative 2.

Biological Soil Crusts: Impacts would be similar to those described in Alternative 1 outside of DWMAs, but sensitive areas would be avoided.

Riparian/Wetland: Impacts are the same as Alternative 1.

Noxious Weeds: Impacts are the same as impacts to Alternative 2 of standards and guidelines.

Impacts to Wildlife

General Wildlife: Within DWMAs, impacts would be the same as Alternative 2. Impacts would be similar to those described in Alternative 1 outside of DWMAs, but important wildlife habitat would be avoided.

Special Status Animals: Impacts would be similar to those described in Alternative 2. Exceptions would be desert tortoise habitat outside of DWMAs. Thus, areas of lower tortoise density including linkages between tortoise management areas could continue to receive impacts. Special habitat features (e.g., caves, abandoned mines) that have not been identified would remain at risk for disturbance of resident species.

The criteria for any competitive event outside of OHV open areas would leave few routes available for racing. Segments of the B-to-V course that do not meet the criteria would continue recovery from past events. Recovery of desert tortoise habitat along segments of the B-to-V course that meet these criteria would be slowed, halted or reversed with renewed competitive event use.

Limiting the event to “timed starts,” permitting them only within the inactive tortoise season, and using existing roads would minimize the short-term potential damage to tortoises and their habitat. Some tortoise habitat, including potentially occupied burrows, could be damaged if vehicles stray from the course and by human activity at the start, finish and pit areas. Additional impacts would occur from spectators and pre-event riders, especially where they leave approved routes of travel. Take could occur if animals stray onto the course, though this would be greatly minimized by restricting such events

to the inactive tortoise season. Avoidance of critical tortoise habitat and active tortoise seasons, clearing the course before the event, and the use of spotters or snow fencing at specific high burrow density sites during the event would greatly minimize the potential for take of tortoises.

Impacts to Soil, Water and Air Resources

Impacts are the same as Alternative 1.

Impacts to Cultural and Native American Values

Impacts would be the same as Alternative 1 (No Action).

Impacts to Cattle Grazing (and Allotments)

Impacts would be the same as Alternative 1 (No Action) in any areas where an event is permitted within an allotment.

Impacts to Recreation Resources and Activities

Impacts from the deletion of the Barstow-to-Vegas Race Course in the CDCA Plan would be the same as Alternative 2. This alternative would allow for resumption of long distance point-to-point events outside of open areas and would minimize adverse impacts to sensitive resources using MUC and Recreation Element guidelines, as modified. The actual impacts are based on: (1) the degree that interest in sponsoring such an event outside open areas is expressed in the form of an application to the BLM and, (2) the potential success of such applications.

Applications would be considered in light of MUC guidelines and the additional Recreation Element conditions as proposed under this alternative. The requirement of "timed" starts and limitation of course width to existing routes would, thereby precluding a mass start, would set additional parameters on the racing experience. As with other alternatives, processing the application would likely take considerable time with an uncertain outcome based on identified resource conflicts in the NEMO Planning Area.. Sponsors would necessarily be required to initiate the application process well in advance of the proposed date of occurrence, and must refrain from publicizing the event until such time that a permit is approved.

Impacts to Vehicle Access

Impacts are similar to Alternative 1, no additional vehicle access would be provided with this alternative. However, the condition of some open routes used for transportation purposes located in proximity to, or forming, the corridor meeting established criteria, could become degraded over time as a result of competitive events and spectator visitation. The severity of this impact would depend upon the nature of the competitive event, i.e., motorcycle or ATV quad, allowed corridor size, specific corridor segment,

and frequency/timing of use. The degree of open route maintenance associated with this alternative is anticipated to be higher than Alternative 2 and 4, but less than Alternative 1.

Impacts to Socioeconomic

Impacts are the same as Alternative 1.

4.8.4 ALTERNATIVE 4

This alternative would designate a replacement Barstow-to-Vegas Race Course to allow one event per year that would avoid critical desert tortoise habitat, ACECs, wilderness areas and other sensitive resources consistent with criteria identified in Alternative 3. The alternative alignment (Chapter 7, Figure 14) evaluated follows the Kingston Wash wilderness corridor north of the current alignment. A number of other alignments were considered and dismissed from further consideration because they crossed wilderness or other sensitive areas such as ACECs or critical habitat for listed species.

The additional criteria for point-to-point events outside of open areas would be the same as Alternative 3 except that:

(1) Where there is no evidence of sensitive resources, the course may be expanded to as much as 100 feet, in specified areas as identified in the permit, at the discretion of the Authorized Officer.
(2) This alternative would also allow the course to pass through an ACEC on a designated open route provided that the ACEC Management Plan clearly states that the route may be utilized for the named event and all other conditions identified in the ACEC Plan are met.

The Kingston Wash is a narrow wash adjacent to sensitive areas through which the course would pass (e.g., tortoise and bighorn sheep habitat and wilderness). This alignment results in several resource conflicts that would have to be resolved or avoided through subsequent site-specific analysis. Assuming that an acceptable alignment could be located to avoid category I and II tortoise habitat, sensitive cultural sites, and other sensitive resources, the following impacts are likely:

Impacts to Vegetation

General Vegetation: Impacts are the same as Alternative 3.

Special Status Plants: Impacts are the same as Alternative 3.

Biological Soil Crusts: Assuming that a route could be found that meets the criteria, the effects would be similar to Alternative 3.

Riparian/Wetland: Effects to riparian and wetland habitat may be difficult to avoid through Kingston Wash. Substantial mitigation and avoidance strategies would be

necessary. Past dualsport activities have resulted in some impacts to wash riparian habitat.

Noxious Weeds: Impacts are the same as Alternative 2 of standards and guidelines.

Impacts to Wildlife

General Wildlife: Effects would be similar to Alternative 3 but additional impacts to riparian habitat are likely.

Special Status Animals: Effects would be similar to Alternative 3, except the following impacts are particular to the Kingston Wash route. Impacts on tortoise are similar to those described in Alternative 3, except there is a higher potential for take of the desert tortoise by a competitive event held in a narrow wash such as Kingston. Though not designated as critical habitat for the species, this wash may act as an important habitat linkage between East and West Mojave desert tortoise populations.

Impacts to Soil, Water and Air Resources

Impacts are similar to Alternative 3. Kingston Wash soils have a relatively low potential for wind erosion in comparison to the original Barstow-to-Vegas course, along the Boulder Corridor.

Impacts to Cultural and Native American Values

Impacts may occur along the Kingston Wash corridor that contains two known sites that may be eligible for listing in the National Register of Historic Places and that may be of great concern to Native Americans. Under this alternative no protection is offered to historic routes and trails that have been determined to be eligible for listing in the National Register of Historic Places, or that may be determined eligible in the future.

Impacts would vary depending upon the number of racers per start and the total number of racers per event. They would also vary depending upon which routes within ACECs are available for use. Impacts to cultural resources on or adjacent to some of the routes in this alternative for a competitive motorized event may be significant. Unsurveyed areas would also be subject to impacts from vehicles that stray from the course.

Impacts to Cattle Grazing (and Allotments)

This revised alignment would result in less potential disruption to cattle grazing than the current corridor. If permitted, there may be continued disruption of on-going grazing operations and associated activities during the event and the unknown periods before and after the event for preparation and cleanup.

Impacts to Recreation Resources and Activities

Impacts are similar to Alternative 3, but approval of the course would result in additional restrictions associated with protection measures for wilderness, T&E and riparian resources, including speed limits and additional check points during the race.

Impacts to Vehicle Access

Impacts are similar to Alternative 3. However, the degree of open route maintenance associated with this alternative is anticipated to be higher than Alternative 2, and less than Alternative 1 and 3.

Impacts to Socioeconomic

Impacts are similar to Alternative 1 except for the increased cost associated with running the activity in the Kingston Wash.

4.8.5 Alternative 5

Amend the California Desert Conservation Area Plan to:

a) Remove delineation of the Barstow-to-Las Vegas Race Course from the Land Use Map of the California Desert Conservation Area Plan, (1980 as amended).

b) Replace the text in the section titled Organized Competitive Vehicle Events under the Recreation Element of the CDCA Plan with: Competitive vehicle events may only be held in MUC I.with an area designation of "Open" or on specified recreation routes which have been delineated and designated in the CDCA Plan.

c) Amend the MUC Guidelines to delete all reference to organized competitive vehicle events in MUC L and M, under recreation.

Impacts

The impacts of this alternative within the Dumont Dunes off-highway vehicle "Open" area would be the same as Alternative 1 for all resources. The impacts in all other areas of the NEMO Planning Area would be the same as Alternative 2 for all resources.

4.9 MOTOR VEHICLE ACCESS: ROUTES OF TRAVEL DESIGNATION

4.9.1 Alternative 1 (No Action)

Impacts to Vegetation

General Vegetation: Plants and plant communities in the Planning Area can be extremely fragile in nature and subtle in appearance. These characteristics lend themselves to inadvertent damage or destruction by vehicles, as well as activities associated with vehicle travel. Although plants such as creosote, jojoba and yucca are large bushes, unusual assemblages or features are often difficult to discern. When sensitive vegetation is localized and situated adjacent to routes, a high potential exists for supporting soil and plant damage.

There is potential for weed establishment and fire occurrence, that could impact small numbers of sensitive vegetation adjacent to designated open routes. However, there is low potential for large-scale vegetative type conversion affecting identified sensitive vegetation, in connection with the latter two impacts, in specific areas.

Special Status Plants: No new direct impacts of an adverse nature to sensitive vegetation are anticipated to occur as a result of No Action. Indirect adverse impacts to sensitive vegetation of this planning unit would include the potential for minor vehicle travel, parking, camping and intentional route proliferation-related soil disturbance in proximity to currently designated open routes (that over time can be substantial in terms of soil erosion/loss in the immediate vicinity of specific plant populations).

Biological Soil Crusts: It is thought that the low to mid-elevation arid ecosystems in the west developed with low levels of surface disturbance. Crust response to disturbance is highly variable. Cyanobacteria are the most resistant to disturbance, are highly mobile and can recolonize disturbed surfaces rapidly. Lichens vary in resistance based on type. Mosses have a high susceptibility to disturbance. Lichens and mosses are susceptible to burial. Disturbance results in reduced lichen and moss cover by burial, and cyanobacteria may increase and replace the lichens and mosses decreasing the species diversity. Biological crusts on sandy soils are less susceptible to disturbance when moist or wet. Clay soils are less susceptible to disturbance when crusts are dry. Site specific impacts to biological soil crusts may occur. When impacted sites are identified appropriate management action will be taken to protect impacted sites.

Riparian/Wetlands: A few springs located throughout the Planning Area have all been influenced over the years by vehicle use, camping, parking and route proliferation in their proximity.

Noxious Weeds: The only known direct impact to invasive non-native species as a

consequence of the No Action Alternative would be the potential facilitation of exotic plant establishment and spread over time, along the road shoulders of designated open and limited use routes. Impacts are considered negative overall and wide spread in occurrence.

Impacts to Wildlife

General Wildlife: The type, intensity and frequency of vehicle use on specific routes or segments, can result in direct accidental and intentional impacts. Specific direct adverse impacts to wildlife species residing near, or travelling in the vicinity of, routes may or may not occur over time, and vary in degree of impact dependent upon route use intensity and frequency, as well as species density and season.

Special Status Animals: The desert tortoise is the only known T&E species known to occur within the planning unit. No new surveys for desert tortoises were conducted along any routes associated with this designation effort. Analyses were based on known desert tortoise sightings, wildlife and plant communities known to occur in the vicinity of particular routes, CDCA Plan information, BLM office records, BLM management plans for adjacent public land areas, RAREFIND Natural Diversity Database records, previous EAs, the Desert Tortoise (Mojave Population) Recovery Plan and staff familiarity with tortoises, wildlife species and habitats of the planning area.

The simple presence of a vehicle route in habitats supporting desert tortoises, does not necessarily equate to a specific direct impact, aside from the lack of cover, burrowing substrate and forage present within the confines of that route. But the type, intensity and frequency of vehicle use on specific routes or route segments, can facilitate direct accidental and intentional impacts to tortoises and their habitat

Overall fragmentation of desert tortoise habitat related to the No Action Alternative is thought to be slightly higher than that related to the Action alternatives. However, information pertinent to tortoise habitat and population fragmentation related to vehicles/route use is extremely sparse.

Impacts to Soil, Water and Air Resources

OHV impact to undisturbed soils can occur within relatively short periods of OHV use. After lengthy periods of OHV use, new impacts on soils (e.g., additional compaction, higher reductions in porosity, further increased bulk density, or accelerated water & aeolian erosion rates) within the confines of the now existing route are relatively small, but can be magnified by specific vehicle types, duration of vehicle use and other factors, such as livestock grazing (cattle often trail adjacent to vehicle routes) and weather. The "existing" routes have been in existence for 5 to 50 or more years. Further direct soil impacts within the disturbed soil confines of these open and limited use routes is considered unlikely, though accelerated erosion could occur on many in the future, dependent on type, intensity and frequency of vehicle use, affected terrain and soil strata, as well as the season of vehicle use.

OHV impacts to water quality may result from increased turbidity and contamination from leaking fuel oils associated with use of wash routes, which provide ephemeral waters to wildlife.

Impacts to Cultural and Native American Values

Cultural resources can be extremely fragile in nature and subtle in appearance. These characteristics lend themselves to inadvertent damage or destruction by vehicles, as well as activities associated with vehicle travel. Artifacts and rock alignments are sometimes difficult to see at ground level and have been damaged in other areas by vehicular usage. Routes leading to, through, or terminating at, areas of known sensitivity, increase the possibility of inadvertent and intentional damage to cultural resources. Previous impacts to sites within the project area have been documented. A few of the existing routes in the planning area traverse archaeological sites or are located immediately adjacent to known archaeological sites.

No additional, specific direct, indirect or residual impacts to cultural resources have been identified within the project area as a result of the No Action alternative. All identified cultural resources would be avoided during any route rehabilitation and/or barrier construction or would be analyzed and appropriately mitigated under supplemental environmental analysis. No new adverse impacts to cultural resources are anticipated to occur as a result of the No Action alternative.

Impacts to Utilities

The designation of routes of travel will have no effect on existing corridors or maintenance of those corridors under the No Action Alternative.

Impacts to Recreation

Specifically, direct recreation impacts related to the No Action alternative would include: maintenance of the same amount of vehicle route mileage as that now officially designated and signed as open in the planning unit; a facilitation of the public's ability to know where they are in a specific portion of the planning unit; an emphasized identification of where a route ends or where a hazard may be encountered; an improved ability of visitors to turn around at the terminus of a one way route; and a limitation of the number of potentially hazardous, or resource-damaging, closed routes easily mistaken as open; through effective reclamation or concealment of designated closed routes in the planning unit. Few impacts on recreation use would occur with this alternative that do not occur with the Proposed Action alternative.

Impact to Minerals and Mining

The designation of routes will have no significant effect on mining or mineral exploration in the Planning Area under the No Action Alternative. The existing route network will be

unchanged as depicted by the route inventory of 1979. Supplemental route designation and CDCA plan amendments may be pursued at a later date.

Impacts to Vehicle Access

All "existing routes in MUC L and M areas, including navigable washes that have been individually identified would be designated open for motor vehicle use, except where such use has already been limited or prohibited. This alternative would allow existing access to continue on public lands in the 8,560 miles of route network that has been inventoried in the southern portion of the Planning Area and in the existing route network in the remainder of the Planning Area.

4.9.2 Alternative 2

Impacts to Vegetation

General Vegetation: Potential for weed establishment and fire occurrence, that could impact vegetation adjacent to designated open routes. Low potential for large-scale vegetative type conversion affecting identified sensitive vegetation, in connection with the latter two impacts, in specific areas.

A high potential for additional individual plant damage/loss, where vegetation occurs close to the edges of routes designated as open, would also likely occur with all alternatives. Routes which conflict with other resources would be closed under this alternative and would result in positive impacts to vegetation in areas where routes are designated limited or closed.

Special Status Plants: This alternative would close any route within 1/4 mile of known occurrence of current or future listed T&E Plant populations. This action would create a positive impact on sensitive vegetation.

Biological Soil Crusts: Impacts the same as No Action

Riparian/Wetland: Routes within 1/4 mile of a natural or artificial water source (e.g., springs, seeps, streams, guzzlers) would be designated closed to vehicle access. This action would be a positive benefit to these specific areas and the associated habitat and vegetative communities.

Noxious Weeds: Invasive plant species common to the planning area all prefer disturbed sites, thrive in high nitrogen content soils but are not completely limited by low-nitrogen content soils. The seeds of these species are also easily transported from one area to another. They often become established in low numbers in disturbed soil areas like road shoulders, spreading further following various degrees and kinds of soil disturbance. These non-native plant species can out-compete or even displace native vegetation. Together, the invasive traits of these plants and the high invasibility exhibited by high use routes within a route network pose a high potential for non-native plant displacement of

native species in the vicinity of heavily used route shoulders over time.

Impacts to Wildlife

General Wildlife: The most substantial direct positive impact to wildlife within this planning area would include: 1,070 fewer miles of designated open routes in wildlife habitats, in relation to the current "existing" Route Network, or No Action Alternative. Wildlife will benefit from the closure of routes that cause conflict with roosting, nesting or watering site.

Special Status Animals: Specific biological parameters have been applied under this alternative to meet desert tortoise DWMA goals and objectives. Routes have be designated "Closed" or "Limited" as appropriate and will result in positive benefit to the desert tortoise and other wildlife.

Impacts to Soil, Water and Air Resources

Soil, water and air resources will realize moderate benefit from additional route limitations or closures, particularly closure of wash routes.

Impacts to Cultural and Native American Values

Cultural and Native American values will receive additional protection under this alternative. Closure of any route within 1/4 mile of a significant sacred site or cultural resource that may be impacted or lost will provide a positive impact to the continued preservation of the integrity of the site or area.

Impacts to Utilities

This alternative will have no effect on existing facilities within utility corridors or the maintenance of those corridors. New facilities may be subject to additional parameters in DWMAs (see Appendix A) including limitations on new access.

Impacts to Recreation Resources and Activities

Direct recreation impacts related to this alternative would include 1,070 fewer miles of designated open routes over the current "existing" Route Network of 8,560 miles, or No Action. The 1,070 miles includes 549 miles that would be limited in some manner and 521 miles that would be closed. The primary recreationists to be impacted would be technical four-wheel drive enthusiast and hunters both of whom may make more extensive use of wash routes and routes crossing rugged terrain.

Impacts to Minerals and Mining

The elimination of wash routes will limit potential for mineral exploration in the southern third of the Planning Area under this alternative. This impact is not expected to have a

significant overall effect on mineral development in the Planning Area.

Impacts to Vehicle Access

This alternative would simplify a visitor's ability to find his/her way in the planning unit. Effective on-the-ground signing, open route berm maintenance and concealment of designated closed routes would also be beneficial in directing travelers to where they want to go and would help them stay on approved routes, a situation not currently occurring to the degree feasible.

Some current "existing" routes are restricted as result of this alternative, which limits or denies vehicle access. This alternative would allow existing access on public lands to 7,490 miles, and limited access to another 548 miles of the 8,560 miles of the route network that has been inventoried in the southern portion of the Planning Area; and to the "existing" route network in the remainder of the Planning Area. In addition, all wash routes that are not part of the primary transportation network will be designated as closed in desert tortoise DWMAs.

4.9.3 Alternative 3

Impacts to Vegetation

General Vegetation: Potential for weed establishment and fire occurrence, that could impact vegetation adjacent to designated open routes. Low potential for large-scale vegetative type conversion affecting identified sensitive vegetation, in connection with the latter two impacts, in specific areas.

A high potential for additional individual plant damage/loss, where vegetation occurs close to the edges of routes designated as open, would also likely occur with all alternatives. Routes which conflict with other resources would be closed under this alternative and would result in positive impacts to vegetation in areas where routes are designated limited or closed.

Special Status Plants: This alternative would close any route within 1/4 mile of known occurrence of current or future listed T&E Plant populations. This action would create a positive impact on sensitive vegetation.

Biological Soil Crusts: Impacts are the same as No Action

Riparian/Wetlands: Routes within 1/4 mile of a natural or artificial water source (e.g., springs, seeps, streams, guzzlers) would be designated closed to vehicle access. This action would be a positive benefit to these specific areas and the associated habitat and vegetative communities.

Noxious Weeds: Invasive plant species common to the planning area all prefer disturbed sites, thrive in high nitrogen content soils but are not completely limited by low-nitrogen

content soils. The seeds of these species are also easily transported from one area to another. They often become established in low numbers in disturbed soil areas like road shoulders, spreading further following various degrees and kinds of soil disturbance. These non-native plant species can out-compete or even displace native vegetation. Together, the invasive traits of these plants and the high invasibility exhibited by high use routes within a route network pose a high potential for non-native plant displacement of native species in the vicinity of heavily used route shoulders over time.

Impacts to Wildlife

General Wildlife: The most substantial direct positive impact to wildlife within this planning area would include: 1,070 fewer miles of designated open routes in wildlife habitats, in relation to the current "existing" Route Network, or No Action Alternative. Wildlife will benefit from the closure of routes that cause conflict with roosting, nesting or watering site.

Special Status Animals: Specific biological parameters have been applied under this alternative to meet desert tortoise DWMA goals and objectives. Routes have be designated "Closed" or "Limited" as appropriate and will result in positive benefit to the desert tortoise and other wildlife.

Impacts to Soil, Water and Air Resources

Impacts are the same as Alternative 2 within DWMAs. Outside of DMWAs, except when washes are part of the primary route network, this alternative can be expected to result in somewhat fewer impacts than Alternative 1 where washes are presumed open, but somewhat greater impacts than Alternative 2 where washes are presumed closed. The exception would be in sensitive areas such as ACECs, UPAs, etc, where 43 CFR criteria are likely to result in additional restrictions.

Impacts to Cultural and Native American Values

Cultural and Native American values will receive additional protection under this alternative. Closure of any route within 1/4 mile of a significant sacred site or cultural resource that may be impacted or lost will provide a positive impact to the continued preservation of the integrity of the site or area.

Impacts to Utilities

Impacts are the same as Alternative 2.

Impacts to Recreation Resources and Activities

Impacts are the same as Alternative 2.

Impacts to Minerals and Mining

Impacts are the same as Alternative 2

Impacts to Vehicle Access

This alternative would simplify a visitor's ability to find his/her way in the planning unit. Effective on-the-ground signing, open route berm maintenance and concealment of designated closed routes would also be beneficial in directing travelers to where they want to go and would help them stay on approved routes, a situation not currently occurring to the degree feasible.

Some current "existing" routes may restricted as result of this alternative, which may, limit or deny vehicle access. Some current "existing" routes are restricted as result of this alternative, which limits or denies vehicle access. This alternative would allow existing access on public lands to 7,490 miles, and limited access to another 548 miles of the 8,560 miles of the route network that has been inventoried in the southern portion of the Planning Area; and to the “existing” route network in the remainder of the Planning Area. Closure or seasonal limitation of washes, including navigable washes, that do not contribute to the primary transportation network or access specific recreational destinations would not be addressed as a class, but are addressed on a case-by case basis consistent with the criteria. This action will impact vehicle access by denying access to some washes and limiting the use of others.

4.9.4 Alternative 4

Impacts to all resources and activities are the same as alt 3 except:

This alternative would not consider routes for closure based on being defined a redundant route in MUC Moderate or Intensive and may facilitate a moderate increase in open routes.

4.9.5 Alternative 5 (Preferred Alternative)

Impacts to all resources and activities are the same as Alternative 3**.**

4.10 BUREAU POLICY ON LANDFILLS: TECOPA AND SHOSHONE PROPOSED LANDFILL MUC CHANGE FOR DISPOSAL

4.10.1 ALTERNATIVE 1 (No Action) - Landfills

The existing management situation would continue on the 29.40 acres encumbered by the former and current Tecopa landfill site and 50 acres encumbered by the former and current Shoshone landfill site.

Lands would be retained in Federal ownership for the reasonably foreseeable future and lands would be managed consistent with existing laws, regulations and guidance. Existing activities that are inconsistent with policy would be terminated. This includes both authorized and unauthorized activities. Leases for operating small landfills would be examined. If in compliance with all terms and conditions, existing operations would continue through the life of the lease, at which time State closure procedures would be initiated. For facilities that are not in compliance, existing leases would be terminated, and state closure procedures initiated. The BLM would work with local operators to provide alternative facilities where needed, while closure activities are underway. Existing and future unauthorized occupancies in the affected area would be resolved through removal and restoration, consistent with existing policy and procedural guidance. (Refer to Chapter 7, Figure 13b for a visual representation of the identified areas.)

Impacts to Vegetation, Wildlife, Soil, Water and Air Resources

Some environmental impacts associated with the former and current Tecopa landfill have already occurred. Among these are surface disturbance, disruption and compaction of surface soils, loss of vegetation, and loss of associated resident wildlife on approximately 5 acres of the lease site. Future anticipated impacts at the Tecopa site include increased local dust generation during activities.

Environmental impacts associated with the former and current Shoshone landfill have already occurred. These include surface disturbance, disruption of natural drainage patterns, increased erosion to an adjacent drainage, disruption and compaction of surface soils, loss of vegetation, and loss of associated resident wildlife on approximately 8 acres of the lease site. Future anticipated impacts at the Shoshone site also include disruption of natural drainage patterns and increased erosion to an adjacent drainage.

Standard quarterly groundwater monitoring began at both sites in 1997; no impacts to area groundwater have been found. No future groundwater impacts are anticipated.

Impacts to Recreation Resources and Activities

Currently, lands under this alternative are managed under the existing MUC Limited guidelines. Because the affected lands are managed as landfills, recreational

opportunities are nonexistent. There would be no impacts to recreation under this alternative.

Impacts to Land Uses

Indirect impacts from Alternative 1 would occur at the Tecopa site based on continued use of the existing landfill authorization until site closure and reclamation is effected, or, if State standards can be met, until the authorization expires in 2007.

If leased lands meet state standards, they could also continue to be used for related activities during the term of the authorization, or alternatively, for closure activities. The affected lands would be retained in public ownership.

Indirect impacts from Alternative 1 at the Shoshone site would occur based on continued use of the existing landfill authorization at a much reduced rate, until site closure and reclamation is effected, or, if State standards can be met, until the authorization expires in 2008.

Impacts to Socioeconomic

The socioeconomic impacts of retaining the landfills in Federal ownership are unknown regionally. Locally, it may result in higher short-term costs for waste management in eastern Inyo County. The long-term costs are difficult to predict, and would depend upon the ultimate strategy and timing for each landfill.

4.10.2 ALTERNATIVE 2 (Preferred) - Landfills

Impacts to Vegetation, Wildlife, Soil, Water and Air Resources

Impacts are anticipated to be the same as Alternative 1 (No Action)

Impacts to Recreation Resources and Activities

Impacts are the same as Alternative 1.

Impacts to Land Uses

Impacts to land use would be similar to Alternative 1 (No Action) except that closure may occur over a longer time frame. Facilities are expected to get a limited amount of use in the future with modest impacts from landfilling activities. The State, rather than BLM, would identify mitigation measures, because it is against BLM policy to include encumbrances on these patents.

Impacts to Socioeconomic

The socioeconomic impacts are similar to Alternative 1 except locally Alternative 2 may result in lower short-term costs for waste management in eastern Inyo County.

4.11 WILD AND SCENIC RIVER ELIGIBILITY

The WSR Act and Federal guidelines require Federal agencies, upon determination of WSR eligibility, to provide interim protection and management for a river's free-flowing character and any identified outstandingly remarkable values, subject to valid existing rights, until such time as a suitability study is completed. Refer to Appendix O and Appendix S for a description of the outstanding remarkable values that will benefit by this eligibility determination. During this interim period all proposals that could affect the Amargosa River and Cottonwood Creek and their resources will be evaluated against the regulatory criteria and additional limits on uses may occur. Further analysis of potential impacts to all resources and uses will be evaluated during the suitability analysis.

4.12 CUMULATIVE IMPACTS

As defined in 40 CFR, Sec. 1508.7, "Cumulative impact" is the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.

There have been several significant actions and proposals since the preparation of the CDCA Plan in 1980. These have resulted or have the potential to add to cumulative impacts for one or more resources being affected by the NEMO Plan. A listing follows.

WEMO - West Mojave, a bioregional planning area bordering the west side of the NEMO Planning Area. WEMO, NECO, and NEMO collectively encompass most of the California Desert Conservation Area.

NECO - Northern and Eastern Colorado, a bioregional planning area bordering the south side of the NEMO Planning Area. NECO, WEMO, and NEMO collectively encompass most of the California Desert Conservation Area.

FT. IRWIN EXPANSION - A proposal by the U.S. Army to significantly expand their boundary south, east and west of the existing reserve. BLM administered lands would be transferred to the U.S. Army.

LAS VEGAS RMP - A recently completed Resource Management Plan covering the area bordering the northeastern portion of the NEMO Planning Area boundary. Decisions were made that affects desert tortoise recovery and livestock grazing in critical habitat and grazing allotments partially managed by Nevada and California.

MOJAVE NATIONAL PRESERVE DEIS AND GMP - A recently released revised Draft Environmental Impact Statement/General Management Plan presents three alternatives for the management of the 1.6 million-acre Preserve in the northern Mojave Desert of California. Proposals are made that seek to provide recreational access and also seek to protect and perpetuate native species in a self-sustaining environment.

DEATH VALLEY NATIONAL PARK DEIS AND GMP - A recently released revised Draft Environmental Impact Statement/General Management Plan presents three alternatives for the management of the 3.3 million-acre National Park in the northeastern Mojave Desert of California. Proposals are made that seek to extend existing management strategies to new lands added with the passage of the California Desert Protection Act, to incorporate the designation of 95 percent of the Park as wilderness into the management approach and also seek to perpetuate native species in a self-sustaining environment.

CALIFORNIA DESERT PROTECTION ACT OF 1994 (CDPA) - An Act of Congress which established 69 wilderness areas, the Mojave National Preserve (MNP), and expanded Joshua Tree and Death Valley National Monuments and redefined them as National Parks. Lands transferred to NPS were formerly administered by the BLM and included significant portions of grazing allotments, wild horse and burro Herd Management Areas and Herd Areas, and ACEC's

WILDLANDS/CATELLUS ACQUISITION AND EXCHANGE - Approximately 322,500 acres of land controlled by the Catellus holding company has recently been added to the lands managed by the BLM through purchase, purchase and donation, and exchange with Wildlands Conservancy.

TIMBISHA LEGISLATIVE PROPOSAL - A proposal before Congress to create a Timbisha Tribe Indian Reservation using lands currently under BLM and NPS administration.

URBAN EXPANSION - The expansion in population and supportive developments within and adjacent to the NEMO Planning Area. The most notable areas are Baker, CA; Bullhead City, AZ; Las Vegas, NV; Stateline (Primm), NV and Pahrump, NV.

I-15 EXPANSION - Planned features are truck passing lanes and an agricultural inspection station.

There are additional factors and actions that are not as generally significant which may be examined by individual sections of the cumulative impacts analysis.

4.12.1 VEGETATION AND WILDLIFE

Lovich and Bainbridge (1999) discuss the sensitivity of desert habitats to disturbance and the slow rate of natural recovery:

> *The landscape and native vegetation of the southern California deserts have been significantly altered during the last century by a variety of factors including: livestock grazing, introduction of exotic species, off-road vehicle use, urbanization and its attendant effects, and military activities. Extreme temperatures, intense sun, high winds, limited moisture and the low fertility of desert soils make natural recovery of the desert very slow after disturbance. Conditions suitable for plant establishment occur only infrequently and irregularly, and it may take hundreds of years for full recovery to take place without active intervention. Many of the actions of desert development and utilization have profound effects on ecosystem stability, diversity, and productivity.*

Livestock grazing has occurred historically (mid-1800s to present) throughout much of the desert. In a recent review of the effects of grazing on public land in the hot deserts (Chihuahuan, Mojave, and Sonoran) of the American Southwest, the General Accounting Office (1992) concluded that a high environmental cost has been exacted on these fragile ecosystems and that land degradation due to grazing is continuing (Lovich and Bainbridge 1999). Of particular concern is the potential destruction of fragile biological soil crusts due to trampling by livestock. The less it rains the slower the recovery of biological soil crusts. In hot deserts like the Mojave, it can take decades before biotic soils begin to recover. Other potential impacts of grazing include soil compaction and increased erosion, trampling of plants, and overcropping.

In recent years, most grazing has been limited to the West Mojave and East Mojave, including the southern half of the NEMO Planning Area. Since the designation of critical habitat for the desert tortoise, sheep grazing has been eliminated in much of the West Mojave. There are no sheep allotments in the East Mojave. Livestock grazing was eliminated from the Piute-Eldorado Critical Habitat Unit on adjacent lands in Nevada through the Las Vegas Resource Management Plan. Conservation groups have expressed an interest in buying most cattle allotments and terminating grazing in the southern portion of the NEMO Planning Area and the adjacent Mojave National Preserve. This would further reduce conflicts with desert tortoise.

In general, invasive exotic plants tend to proliferate in areas of disturbance (Hobbs 1989). The spread of exotic plants has degraded habitat for wildlife and plants throughout the desert. Once established, exotic plants may diminish the abundance of native species due to competitive interactions or by disruption of natural processes such as fire frequency and intensity (Lovich and Bainbridge 1999). Some of the more important exotic plants in the southern California desert are saltcedar or tamarisk (*Tamarix ramosissima*), Russian thistle (*Salsola iberica*), filaree (*Erodium cicutarium*), and several grass species including split grass (*Schismus* spp.) and bromes (*Bromus* spp.) (Lovich and Bainbridge 1999). Desert tortoise habitat has been degraded by the replacement of native perennial grasses with aggressive alien grasses such as *Bromus* and *Schismus. Schismus barbatus*, which is often eaten and perhaps sometimes preferred by tortoises, has been shown empirically to deplete tortoises of nitrogen and cause weight losses (Esque 1994, Avery 1998, Nagy et al. 1998). Avery (1998) also demonstrated that S. *barbatus* was lower in overall quality, crude protein, essential amino acids, water and vitamin concentrations, and higher in fiber and heavy metal concentrations than three non-grass species measured.

Tamarisk infestations along the Amargosa River and its tributaries (e.g., Salt Creek) have affected threatened and endangered (T&E) species including least Bell's vireo, southwestern willow flycatcher, Amargosa vole and Amargosa niterwort. The BLM Sensitive Amargosa pupfish, Nevada speckled dace, burrowing owl and several bat species are also at risk of being impacted by tamarisk. Tamarisk aggressively displaces native trees and shrubs, withdraws and transpires water from the ground at a high rate, and is a poor source of food and shelter for desert wildlife. Recent regional efforts at reducing tamarisk at critical riparian sites (e.g., Afton Canyon, Salt Creek, Amargosa Canyon, Saratoga Springs) may mitigate the cumulative effects.

An established network of roads and highways through the Planning Area provides access for miners, recreationists, ranchers and others. The cumulative effects of this existing road network include promoting raven and coyote populations by providing roadkills used as food, the distribution of exotic plants and weeds and the associated fire occurrence potential, and related disturbances caused by increased access to remote areas from all forms of recreation. The Interstate highway system is a major fragmenting barrier for wildlife, especially for slow moving reptiles such as desert tortoise. Widening of the Interstate will not significantly increase its function as a barrier, but may allow an opportunity to add fencing and thereby reduce roadkills. Barrier fences are a potential mitigation, but they can also increase population fragmentation and increase the potential for inbreeding. (Opdam 1988, Frankham 1995). Over the long term, culverts and bridges that facilitate movements of tortoises between both sides of the road are necessary to allow some gene flow (Boarman and Sazaki, 1996).

Off-road vehicle use (OHV) can have impacts similar to those caused by grazing. OHV impacts include destruction of biological soil crusts, compaction of soils, destruction of vegetation, reduced rates of water infiltration, increased wind and water erosion, noise, and decreased abundance of lizard populations and other wildlife species (Busack and Bury 1974). Desert tortoises can be directly impacted by being crushed in burrows or on

the surface, or indirectly impacted through habitat alteration (soil compaction, vegetation destruction) or toxins from exhaust.

Various old and new utilities (e.g., electrical transmission lines, gas and oil pipelines, and fiber-optic cables) form a network throughout the desert. In addition to the direct reduction in habitat, there are indirect impacts associated with these utilities. Utility towers can provide perching and nesting sites for birds of prey particularly ravens, which prey on desert tortoise hatchlings and juveniles. New utilities will undoubtedly be constructed in the future to connect the Los Angeles area with the rest of the country. In the West Mojave, upper respiratory tract disease (URTD) caused by a bacterium (*Mycoplasma*) has reduced desert tortoise populations significantly in the past 15 years or more. Predisposing factors such as poor nutrition (resulting from habitat degradation), drought, and release of captive desert tortoises ill with URTD into the wild are thought to be involved in the spread of URTD (Jacobson et al 1991). Individuals with URTD have been found in most regions of the California Desert, including the NEMO Planning Area. As URTD is a highly infectious disease, increased mortality from URTD may continue to occur in the Planning Area.

A shell disease, cutaneous dyskeratosis, has also been found in desert tortoise populations including recent cases reported in the east Mojave. The disease may be caused by environmental toxins (e.g., heavy metals, chlorinated hydrocarbons, organophosphates, selenium), but this relationship needs further testing. In a study by Avery (1998), concentrations of heavy metals, including chromium, iron, copper, zinc, and aluminum, were found to be particularly high in the exotic grass *Schismus barbatus* compared to three other plant species. Tortoises competing with cattle for forage in seasons when production of winter annuals is low, have been shown to consume more exotic *S. barbatus.* Tortoises may also be subjected to heavy metals such as lead and nickel that are deposited in the environment from motor vehicle emissions or disbursed during dust storms. Homer et al. (1994, 1996) found potentially toxic metals and minerals in the liver or kidney of necropsied tortoises.

Urbanization in the Planning Area is centered around a few rural communities and greater Las Vegas, including the Stateline area. The former has changed little for many decades. The latter has seen the recent expansion and addition of new casinos and a major golf course in the region. To date, loss of habitat has not been great, and indirect effects on wildlife and special status plants have been negligible. Pressure for new gambling, tourist and support facilities along the I-15 corridor are expected.

Burro herds occur in the East Mojave. Many of the burros graze in desert tortoise and bighorn sheep habitat. Impacts from burros including trampling and destruction of vegetation in riparian areas, diminished water quality due to sedimentation, impacts to soil and vegetation due to heavy trailing and rolling areas, and exclusion of native species, such as bighorn sheep, from water sources. A small burro Herd Management Area (HMA) has been identified for retention in the Planning Area. Proactive management of the HMA would be necessary to reduce and maintain appropriate management levels of burros and eliminate potential adverse impacts. The elimination of

burros from any public lands will directly benefit wildlife and elimination of burros on adjacent Park Service lands may indirectly benefit wildlife on public lands by facilitating maintenance of appropriate management levels.

Mining in the Planning Area has had an effect on T&E species and wildlife. In general, any mining, which results in surface disturbance results in some loss of wildlife habitat, ground cover, and associated increased soil erosion. In particular, there has been a loss of habitat for desert tortoises, bats and bighorn sheep. Locatable mining (e.g., gold, silver) usually occurs in mountainous areas, which is generally not good tortoise habitat but may affect bats and bighorn sheep, while mineral material sales (e.g., sand, gravel, pumice, etc.) are located in valley bottoms and on alluvial fans which are generally more in conflict with tortoise habitat. Renewed mining interest in historic mine complexes has also had an impact on bat species that have colonized these mine shafts and adits. Mining operations have been located in important avian migration and wildlife corridors, such as the Amargosa River channel and its tributaries, the Kingston and Clark Mountains, Mountain Pass, Ibex and Silurian Hills, and the Panamint Valley. Additional measures have been proposed in this document to reduce cumulative impacts from mining and other surface disturbing activities.

With the passage of the California Desert Protection Act (CDPA, 1994), there were two major regional effects. One was the establishment of wilderness areas throughout the region including 1.2 million acres of public lands in the Planning Area. Within wilderness areas, the use and subsequent impacts of motorized vehicles are virtually eliminated, and other associated multiple uses that require motorized access are reduced. The impacts of motorized vehicles upon wildlife in wilderness areas are anticipated to be negligible. Some wilderness study areas were not designated as wilderness but may be added by Congress later. The second effect was the establishment of the Mojave National Preserve and the expansion of Death Valley National Park. Designation of the Preserve and expansion of the Park reduced multiple-use management (except hunting and livestock grazing) over approximately 2.9 million acres in the region. Large amounts of desert tortoise habitat are now within the Preserve.

The BLM has several habitat acquisition efforts underway. Among these are small parcels bought from time to time using compensation funds. The largest such acquisitions have been in the West Mojave. Land exchanges made as part of the West Mojave Land Tenure Adjustment Program have resulted in large acquisitions of tortoise habitat in the West Mojave. An exchange involving Catellus lands recently added 322,500 acres of public lands within the NEMO Planning Area including 98,000 acres of tortoise habitat in the NEMO Planning Area and in adjacent regions. These acquisitions increase the capability of Federal and State agencies to mange these lands to conserve T&E species.

The BLM has recently acquired several riparian habitat parcels in the Planning Area. The parcels were acquired through exchanges with private landowners and donation from the Nature Conservancy. These acquisitions partially fulfill recommended land acquisition actions prescribed in the Amargosa Canyon and Grimshaw Lake ACEC

Management Plans, although additional BLM riparian habitat acquisition has been recommended for the Planning Area.

There are no military bases in the Planning Area, however China Lake Naval Air Weapons Station, Ft. Irwin, and the Marine Corps Air Combat Center at Twentynine Palms are nearby. Ft. Irwin and the Marine Corp Air Combat Center are used extensively for vehicular and airborne maneuvers, and both encompass considerable amounts of desert tortoise habitat, Of the two, only Ft. Irwin contains critical habitat for the tortoise. Ft. Irwin has recently proposed expanding southward in the West Mojave Planning Area and/or eastward into the NEMO Planning Area. The southward expansion would include desert tortoise habitat that supports up to 16 percent of the West Mojave tortoise population, resulting in that desert tortoise habitat becoming subject to impacts of small and large scale military training and maneuvers.

The Las Vegas Resource Management Plan (RMP) and Las Vegas Valley Habitat Conservation Plan (HCP) implemented the Desert Tortoise (Mojave Population) Recovery Plan on public lands and private lands, respectively, in Nevada immediately adjacent to the NEMO Planning Area on the east. To the west, the West Mojave Coordinated Management Plan (WEMO CMP) is currently in preparation; to the south, the Northern and Eastern Colorado Desert (NECO) CMP is in preparation. The latter two plans will implement the Desert Tortoise Recovery Plan within their respective areas and will provide management prescriptions and protection for many other T&E and special status plants and animals.

Overall, impacts to wildlife and special status plants from human activities are low in the NEMO Planning Area; human impacts are much higher in the adjacent West Mojave and to the east in Las Vegas Valley. A very large proportion of the NEMO Planning Area is in reserve level management (i.e., Death Valley National Park, Mojave National Preserve, BLM wilderness). Despite this, the invasion of exotic, weedy plants and the spread of URTD and shell disease create concerns about desert tortoise populations. Burro use above Appropriate Management Levels together with authorized cattle grazing, have impacted habitat in Shadow Valley for desert tortoise and other wildlife. Interstate Highways and adjacent corridors fragment habitat, and inhibit animal movements within the Planning Area and into adjacent Planning Areas; large mammals, such as bighorn sheep, are especially affected.

4.12.2 SOIL, WATER AND AIR

Soils: Soil development in the Planning Area is poor and the plan would have no significant impact on the regional soils.

Water: The establishment of standards and guidelines which include best management practices (BMP) would benefit water quality over the entire Planning Area. Several of the ACEC and T&E plant proposals and Wild and Scenic River eligibility would benefit riparian and water quality especially in the upper Amargosa River which is classified as an impaired watershed. It is unclear if these actions would be sufficient to change the

impaired classifications in the NEMO Planning Area, some of which are based on naturally occurring factors.

Air Quality: The cumulative effect area for air resources includes the northeast portion of the Mojave Desert Air Basin and the Great Basin Valleys Air Basin. This area includes the Owens Valley and San Bernardino County PM_{10} Planning Areas and the Southeast Desert Modified Air Quality Management Area Ozone Federal non-attainment areas. Most of the existing emissions are from sources outside BLM lands and would not be affected by the NEMO Plan. The expected emission levels are within the levels in the attainment demonstration in the SIPs and the cumulative NAAQS 24-hour and one-year PM_{10} emission standards for Particulates and the one-hour ozone standard and are not likely to result in or contribute to exceedances of the National Ambient Air Quality Standards.

4.12.3 WILDERNESS

The California Desert Protection Act of 1994 (CDPA) established wilderness areas throughout the California Desert, including the Planning Area. In addition, it retained lands for further wilderness study and released lands from any further consideration for wilderness designation. Since that time, actions have been taken to stop unauthorized vehicular use within wilderness and to rehabilitate the evidence of past human impacts now within wilderness. As a result, the conditions of wilderness values have incrementally improved within designated wilderness since the passage of the CDPA. Likewise, areas identified for further wilderness study have been managed under the interim management guidelines, which assure that wilderness values are not impaired to the point of affecting suitability for designation as wilderness.

None of the alternatives identified in this plan would negatively impact wilderness values in either designated wilderness or wilderness study areas within the Planning Area. Alternatives that would reduce or eliminate heavy use by either feral burro or cattle would further improve wilderness values in either designated wilderness or wilderness study areas. Alternatives that would reduce or eliminate congregation areas, particularly around water sources, by either feral burro or cattle would also further improve wilderness values at those sites.

The Fort Irwin expansion proposal would eliminate four wilderness study areas from further consideration as potential wilderness. The Wildlands/Catellus exchange reduced the potential for degradation of wilderness values through development of non-Federal lands within wilderness. Population growth in western Nevada, particularly in the Primm and Pahrump areas, could place increased pressure on wilderness use, both authorized and unauthorized, near those areas. If proposals for privatization of the lands around the golf course southwest of Primm, NV are accommodated, more use, both authorized and unauthorized, could occur within wilderness. There is an overall upward trend in the condition of wilderness values within the Planning Area, which is anticipated to continue.

4.12.4 CULTURAL RESOURCES AND NATIVE AMERICAN VALUES

Cumulative impacts from Fort Irwin Expansion and the Timbisha Legislative proposal, if implemented, may result in a net loss of prehistoric and historic cultural resources and Native American values on public lands managed by the BLM. In contrast, lands acquired from the Wildlands/Catellus exchange actions may result in a net gain of cultural resources managed by the BLM. CDPA, with wilderness designation, affords a greater level of protection for cultural resources within Wilderness.

Sensitive historic and prehistoric cultural resources within the California Desert District will continue to be impacted by general recreation activity, mineral exploration, grazing, unguided site visitation and vandalism. There will be continued incremental loss of cultural resources due to inadvertent and authorized actions when mitigation measures result in data collection. Overall, the NEMO Plan will have a negligible cumulative effect on cultural resources on public lands within the California Desert District.

4.12.5 WILD HORSE AND BURRO

The CDPA placed the majority of herd management areas and retention areas for wild horses and burros under the management of the National Park Service. Their policy is elimination of feral animals, which include wild horses and burro. The portions of the herd management areas remaining under BLM administration were reduced to the point that it is questionable whether or not viable gene pools can be maintained for those horse and burro herds, without substantial intervention.

The NEMO plan is considering alternatives that range from no changes from present regarding burro herds remaining on public lands to the complete elimination of burros in critical desert tortoise habitat in the East Mojave Desert. The NECO plan is considering a similar range of alternatives focusing on burros in the Colorado River area.

Nine herd management areas (HMAs) were established for burros in the CDCA Plan, three of which have been subsequently eliminated through plan amendments. The passage of the California Desert Protection Act and transfer of lands to the National Park Service affected the management status of additional burro HMAs. The Park Service is proposing to eliminate burros from both the Mojave National Preserve and Death Valley National Park under their DEIS/GMP documents. See the extent of burro range that shows BLM-managed HMAs prior to the passage of the CDPA. (Chapter 7, Figure 8b) Portions of four HMAs remain within the NEMO Planning Area and two more HMAs within the NECO Planning Area. Any substantial impacts to these herds could affect the long-term viability of feral burros in the California Desert.

4.12.6 CATTLE GRAZING (and Allotments)

The CDPA placed some grazing allotments partially and some allotments completely within the boundaries of Death Valley National Park and Mojave National Preserve.

The Mojave National Preserve management team has since sought willing buyers to purchase the allotments within the boundaries of the Preserve. The expressed goal has been to retire the allotments within the Mojave National Preserve. Death Valley National Park management team has expressed no such strategy. The General Management Plan for the Mojave National Preserve includes an alternative that would establish ephemeral grazing only within the boundaries of the preserve, based on meeting minimum forage production limits.
The CDPA also established 69 wilderness areas, some of which included existing grazing allotments. Although grazing is allowed within wilderness, the restrictions regarding use of motorized vehicles, equipment and development of new range improvements have made the grazing operation more difficult for the permittees.

The Fort Irwin proposed expansion alternatives include grazing allotments which, if the proposed expansion is approved, could be purchased and grazing eliminated. Although not a part of NEMO, the livestock industry in the California Desert Conservation Area would be impacted as a whole. The NECO and WEMO plans are considering alternatives that range from no changes to grazing operations to elimination of grazing within critical desert tortoise habitat. No allotments within the NEMO Planning Area overlap the NECO or WEMO Planning Areas. However, the livestock industry in the California Desert Conservation Area is encompassed by the three plans, including NEMO, and would be impacted as a whole.

The No Action Alternative would have no incremental impacts from the existing situation. The grazing levels and seasons would be subject to biological evaluations, assessments, and opinions regarding the recovery of the desert tortoise. Some reductions in stocking levels and seasons of use could occur, depending upon the status of the desert tortoise recovery.

The preferred alternative would result in the cancellation of ephemeral use in the following allotments: Jean Lake, Kessler Springs, Piute Valley, Valley View, and Valley Wells. No temporary non-renewable use would be approved. Relinquishment of these leases would be granted on a case-by-case basis. In addition, 230 pounds of ephermal forage would be required within DWMAs for spring turnout. Taken together these factors would result in the permanent reduction of grazing on several of the allotments within the Planning Area. If this alternative is also chosen in WEMO and NECO, similar reductions in grazing would occur.

Therefore the cumulative effects of NEMO and other reasonably foreseeable actions could noticeably reduce the size of the portion of the livestock industry centered on use of BLM administered lands in the California Desert Conservation Area.

4.12.7 UTILITIES

There would be no major adverse cumulative impacts on utility corridors. Compared with the constraints placed on use of existing utility corridors by the CDPA due to

wilderness designation and transfer of lands to the Park Service, parameters imposed by the NEMO plan are insignificant.

4.12.8 RECREATION

The CDPA created 69 wilderness areas to be managed by BLM and transferred approximately 1.9 million acres of land to NPS administration within the California Desert. Recreation opportunities related to wilderness and use of units within the NPS system were substantially increased. Recreation opportunities traditionally offered to visitors on BLM administered lands that are dependent upon vehicular access and/or involve collection of specimens were substantially decreased. All opportunities may be further limited should the Ft. Irwin expansion occur. Also see Vehicle Access discussion in section 4.10.10

4.12.9 MINERALS AND MINING

It is anticipated that cumulative impacts, as they relate to the NEMO plan, would not have a significant direct impact on mining, regarding areas of known mineral potential. Prospecting, because it is dependent on vehicular access, would be discouraged in wilderness and by route closures associated with route designation. This concern is tempered by the fact that route designations and closures will also occur under the no action alternative and independent of the NEMO Plan. Although vehicular access can, unless under a withdrawal, be achieved through a plan of operation or mining notice, the paperwork and bonding requirements for areas closed to vehicles would discourage most prospectors from obtaining the necessary authorization.

Because no withdrawals are being proposed in the NEMO Plan, discretionary mining activities such as gravel development would be more adversely impacted than would locatable minerals if they occur in National Park Service lands, special management areas such as ACECs or habitat management plans outside of DWMAs. Within DWMAs, in the NEMO Planning Area, gravel operations are provided for under programmatic consultation and development should be facilitated.

4.12.10 VEHICLE ACCESS

Route designation for DWMAs in this plan would further limit vehicular access to some BLM administered lands (e.g., approved routes including washes). The incremental decrease proposed in this planning effort is small. However, it would be added to the decreases experienced in recent years due to the passage of the California Desert Protection Act, associated wilderness designations and anticipated route designations within WEMO, NECO and LVRMP areas. Route designations particularly affect access by elderly or those with mobility restrictions who can not walk, ride horses or gain access through other non-mechanical means. The Fort Irwin proposed expansion has the potential for further reduction of access to and availability of public land. Taken together with reasonably foreseeable actions cumulatively significant impacts to access are anticipated.

4.12.11 LAND TENURE

Significant changes in land ownership patterns and management have occurred and are continuing in the planning area. Land exchanges have occurred or are underway to implement the provisions of the California Desert Protection Act such as acquistion of wilderness lands in the Planning Area. These include acquisition of 58,000 acres of the State Lands Commission, 437,000 acres of Catellus properties throughout the CDCA purchased in combination with the Wildlands Conservancy and the Land and Water Conservation Fund (LWCF) 98,000 acres of which are in the NEMO Planning Area. In addition, the CDPA requires the Secretary of the Interior to conduct a study to identify lands suitable for a reservation for the Timbisha-Shoshone Tribe, including approximately 1,000 acres of public lands northwest of Death Valley Junction, California within the Planning Area. If an expansion of the National Training Center, Ft. Irwin were to be approved by Congress, the affect to the NEMO Planning Area could range from a minimum of 25,000 acres, to a maximum of 273,000 acres. It is more likely to affect less rather than more acreage in the NEMO Planning Area based on the latest preferred alternatives. Cumulatively the effects of the NEMO Planning Effort land tenure changes as outlined in Appendix N are relatively small when compared with the landscape scale changes encompassed by the land tenure proposals outlined above. Taken together with these changes and with similar changes proposed by WEMO and NECO significant impacts could occur to local economies. Overall emphasis on exchanges as the land tenure tool of choice is essential to assure that Counties and private lands benefit from increased development opportunities that exchanges can offer to offset any potential loss of tax revenues.

4.12.12 SOCIOECONOMIC

Implementation of fallback standards has resulted in some minimal socioeconomic impacts to public land users. Lessees with cattle operations would be affected over the long-term with changes to current grazing activities to meet standards under all alternatives. However, as public lands health and forage improves and resource objectives are achieved, benefits from more flexibility in grazing operations would be realized over the long-term. Achievement of standards in riparian and wetland habitats is anticipated to result in their increased enjoyment by the public and additional revenue to adjacent communities from visitation to these resources. In addition, some alternatives call for substantial changes or elimination of current grazing activities to meet desert tortoise recovery objectives resulting in reduction of income to affected lessees. Similar alternatives are proposed in WEMO and NECO to achieve desert tortoise recovery and grazing has been eliminated from the Piute-Eldorado Critical Habitat Unit in Nevada. The potential elimination of competitive event opportunities in some or all of the Planning Area results in the elimination of economic benefits from sale of goods or services by communities along the race courses. All of these specific economic effects are not considered to be significant locally, regionally or nationally.

The NEMO economic area is an area, which includes the population that resides and works around the NEMO Planning Area. To summarize the total economic impacts for this area would be increased job opportunities, output, proprietor income, and employee compensation as a result of increased visitation to the area[7]. This would be partially offset by a reduction in jobs and the associated reduced proprietor income from the elimination of grazing on allotments both on public lands and on adjacent Mojave National Preserve lands. With a resident population of less than 200,000 and approximately 76,000 jobs none of the alternatives would significantly impact the NEMO economic area. Even within specific industries such as range fed cattle and travel related services the positive and negative impacts appear minor relative to total employment in the region and will be locally focused. However, the cattle industry in particular is incurring cumulative effects as a result of this plan taken in combination with other bioregional plans identified specifically for recovery of the federally threatened desert tortoise covering portions of a four State area. Other ongoing and reasonably foreseeable activities may have substantial economic impacts that can not be anticipated at this time. (Dean Runyan Associates - Northern and Eastern Mojave Planning Area: Economic Impact Analysis, 24 June 1998; Prepared for the National Park Service)

4.13 IRRETRIEVABLE AND IRREVERSIBLE COMMITMENTS

4.13.1 VEGETATION AND WILDLIFE

No irretrievable or irreversible commitment of vegetation or wildlife resources is made.

4.13.2 SOIL, WATER AND AIR RESOURCES

There is no irretrievable or irreversible commitment of soil, water and air resources.

4.13.3 CULTURAL RESOURCES AND NATIVE AMERICAN VALUES

Any undertaking that involves ground disturbing activities will require site specific cultural analysis which may include survey, recording of historic and prehistoric sites identified, determinations of eligibility of sites to the National Register of Historic Places that will be impacted. Potential impacts to Native American values will be analyzed. Mitigation measures will be identified and implemented, if necessary. Avoidance of cultural resources is the preferred mitigation measure but is not always possible or feasible. Decisions to mitigate impacts to cultural resources by data recovery instead of avoidance and consequent removal of cultural resources from the project area constitutes

[7] Nevada growth is projected at 130% over the next 20 years. Pahrump Valley is receiving growth pressure from Las Vegas and is growing an average of 15% per year and facilities associated with national park designation for Death Valley and proposed strategies on public lands in the Amargosa Valley are anticipated to spur this increased visitation.

a residual impact to the site since rarely, if ever, is 100% of site excavated. Mitigation by data recovery also results in a steady loss of archaeological sites, a finite resource, from the original location and therefore reduces opportunities for interpretation in natural context. Data recovery may negatively impact Native American values that cannot be mitigated.

4.13.4 WILD HORSE AND BURRO

There are no irreversible impacts. Herd areas, which are not assigned as an HMA, may be re-evaluated in the future for the management of wild burros and horses. However, the genetics of the original herds may be irretrievable if all the burros or horses are removed from that area.

4.13.5 CATTLE GRAZING (and allotments)

Allotments, which are cancelled in DWMAs, will be lost for the reasonably foreseeable future. The closing of allotments will lead to the elimination of production of livestock in these DWMAs. Abandonment of facilities such as range improvements may lead to their eventual deterioration and loss unless they have wildlife habitat values.

4.14 LONG TERM PRODUCTIVITY VERSUS SHORT TERM USE

This section is a combined discussion of standards and guidelines and threatened and endangered species alternatives. Alternative 1 addresses no action for all T&E proposals and standards and guidelines. The rest of the alternatives use the regional standards. All T&E proposals are arranged on a scale from more conservation balanced (Alternative 2) to more use or access balanced (highest numbered alternative) plus the preferred alternative.

Alternative 1: These alternatives do not involve any short-term uses of the environment above existing conditions and can be expected to result in modest benefits to long-term productivity.

Alternative 2: These alternatives involve minor short-term uses in support of T&E species protection and public lands health standards and can be expected to result in the greatest benefits to long-term productivity.

Alternative 3: These alternatives involve minor short-term uses in support of T&E species protection and public lands health standards and can be expected to result in substantial benefits to long-term productivity but less than Alternative 2.

Alternative 4: These alternatives involve minor short-term uses in support of T&E species protection and public lands health standards and can be expected to result in modest benefits to long-term productivity but more than Alternative 1.

Preferred Alternative: These alternatives involve minor short-term uses in support of T&E species protection and public lands health standards and can be expected to result in substantial benefits to long-term productivity and similar to Alternative 3.

4.15 ENVIRONMENTAL JUSTICE

Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, directs Federal agencies to identify and address the potential for their activities to cause disproportionately high or adverse impacts to minority or low-income populations. This section uses the results of analyses from other disciplines to determine if disproportionately high or adverse impacts to human health or the environment on minority or low-income populations are likely to occur from one or more of the following alternatives identified in Chapter 2:

- adoption of standards for public land health and guidelines for grazing management;
- conservation and recovery of threatened and endangered species;
- designation of multiple-use class for lands released from wilderness consideration;
- strategies for competitive vehicle events outside of OHV open areas including the B-to-V race course;
- elimination of landfills from public lands; and
- determination of eligibility of stream segments in the Planning Area for the National Wild and Scenic Rivers System.

The environmental justice analysis brings together the results of impact analyses from different resources such as air, land use, grazing, etc., that in turn could affect human health and the environment. If any of these analyses predict impacts to the human population in general, then an environmental justice analysis would determine if those impacts could occur in a disproportionately high or adverse manner to minority or low-income populations. The basis for making this determination in this document is the census and other data which provides information for comparison of the areas of large impacts on minority and low-income populations, as identified in the document *The Northern and Eastern Mojave Planning Area: Economic Impact Analysis* (Dean Runyan Associates, June 1998).

An adverse environmental impact is one that is unacceptable or above generally accepted norms. None of the proposals presents the potential for substantial adverse impacts to human health.

A disproportionately high environmental impact is an impact (or the risk of an impact) to a low-income or minority community that significantly exceeds the corresponding impact to the larger community (CEQ 1997, all). The EIS analysis determined firstly that the impacts that could occur to the environment would either be beneficial or they would be small in relation to the population as a whole and regionally. Secondly, no minority or low-income subsections of the populations would receive disproportionate adverse impacts.

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