

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 would be 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
 - c. Three listed plants, the Ash Meadows gumplant, the spring-loving centuary, and Amargosa niterwort
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 an off-highway vehicle (OHV) strategy for motorized competitive speed events outside of open areas that includes addressing the Barstow-to-Vegas racecourse
6. Consider MUC changes to facilitate disposal of existing landfills on public lands in the planning area
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 is found in the section on the Amargosa vole.

The major categories of change or resource elements to undergo a proposal-by-proposal analysis would be 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
- Socioeconomic Impacts

A summary of impacts table is presented at the end of Chapter 2 to identify which resources may be impacted and their values and uses anticipated to be negligibly impacted by the alternatives. For values and uses negligibly affected, the existing CDCA Plan analysis is considered adequate. Subsequent analyses in this chapter focus on potentially affected values and uses.

Five animal and three plant species in the planning area have been federally listed as threatened or endangered. The species have had critical habitats within the planning area since the CDCA Plan was developed, and was developed by the US Fish and Wildlife Service. ACECs have been proposed to implement recovery in critical and other important habitats of the threatened or endangered biological resources (Amendments #2 desert tortoise, #5 Amargosa vole, and #6 T&E plants). For the following three analyses, impacts would be judged to be significant for threatened and endangered (T&E) species if they potentially compromise or improve efforts to recover or maintain the species.

Impacts for each amendment proposal are organized so that Alternative 1 “No Action” is discussed first. When there would be multiple alternatives, Alternative 2 and other alternatives are arranged in descending order of relative conservation and increasing relative access and/or consumptive and renewable use emphasis. The BLM Proposed Plan Amendments are identified as such and may be one of the alternatives or a combination of alternatives. The Proposed Plan Amendment has taken into consideration comments on the Draft Plan and EIS from internal staff, other agencies and public review. Public comments are discussed in Appendix U and reflected throughout this EIS.

Cumulative impacts are discussed briefly under alternatives within affected resource topics to elucidate how each alternative contributes to cumulative effects. Cumulative impacts are discussed in combination with past, present, and reasonably foreseeable actions in an analysis at the end of the chapter.

The land tenure patterns of public land ownership studied under the alternatives in this EIS would be considered to have negligible impacts. Consequently, land tenure issues within the planning area are addressed globally, including actions proposed in the NEMO planning effort, and those resulting from past, present and 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 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 would be 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 could 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 would be improved through implementation of the four National Fallback Standards. Implementation of the grazing guidelines for livestock would result in changes in seasons of use, rotational grazing, manipulation of herds, waters or other range improvements, and fencing of sensitive areas where problems would be identified. Two of 18 allotments in the planning area do not meet the riparian or wetland National Fallback Standards (about 200 acres at Last Chance and South Oasis). Ten acres would be in the South Oasis Allotment and 190 acres would be in the Last Chance Allotment.

It is expected that the condition of vegetation would improve under the guidelines for grazing management. The guidelines would provide an extended period of growth for perennial forage species in response to continued achievement of the native species standard. With sustained maintenance of the native species standard, plant biomass and plant vigor of livestock forage species would increase. An increase in plant biomass and vigor of forage species would result in a corresponding short-term decrease in biomass, seed production, and seedling establishment for non-forage species due to increased competition. Biomass of forage species would increase the greatest in the Mojave Creosote Scrub plant community, due to its great expanse. The Desert Dry Wash plant community may have the greatest increase in forage plant biomass per unit area. The increases in biomass of forage plants would result in an increase in plant canopy cover. Over the long-term, plant litter would increase.

Increased biomass and production of forage species would increase plant diversity for all plant communities in grazing allotments. Significant increases in diversity would occur in the Mojave Creosote Scrub plant community. Where communities have the potential, tree and shrub structure would increase and age-class distribution would change. In the long-term, plant communities would achieve later seral stages.

In cattle allotments, the installation of new fences, troughs, pipelines, storage tanks, and corrals would remove a small acreage of vegetation in small areas, typically in or adjacent to currently denuded areas. Adherence to requirements in the Biological Opinion on affects of grazing on desert tortoise (Appendix C) would reduce the amount of vegetation disturbance. Except where cattle would congregate around new facilities, plants would sprout and regrow after construction is completed.

There would be no guidelines for activities other than grazing. Trends and the condition of vegetation outside grazing allotments from other activities would only be observed through monitoring that indicated violations of the National Fallback Standards.

Special Status Plants: Within grazing allotments, cattle can consume special status plants. The effect on a species population depends upon the species palatability, size, growth form, accessibility to grazing animals, timing of life cycle, size of populations, and other factors. Should monitoring indicate violations of the native species standard, changes in grazing management would be directed at reducing effects on population viability. Special protection measures could include adjustments in livestock numbers, alteration of season of use, or other methods. Outside of allotments, violations of the National Fallback Standards in other activities could show downward population trends, as revealed by monitoring.

Biological Soil Crusts: Within grazing allotments, grazing by sheep or cattle can affect biological crusts (Brotherson *et al.* 1983, Memott *et al.* 1998). West (1990) reviewed the literature on tolerance of biological soil crusts to impacts, including grazing. The crust's responses to disturbances varied, depending on crust composition, local geomorphology, soil moisture, season of grazing, and amount of compaction and soil movement from grazing animals hooves. Because the allotments have been grazed for decades, continued light grazing would probably not produce additional changes in the abundance or species diversity of the biological crusts. However, changes in grazing management based on implementation of the grazing guidelines to reduce grazing pressures, could produce increases in the abundance and diversity of biological crusts, over the long-term. Trends and the condition of biological crusts outside grazing allotments would only be discovered by monitoring.

Riparian/Wetland: As rangeland health assessments identify places where riparian/wetland standards are not met, management responses would result in the restoration of riparian and wetland areas to their proper functions. In grazing allotments where vegetation at springs does not meet the riparian/wetland standards (e.g., Last Chance and South Oasis), corrective actions would be identified in the Rangeland Health Determination for the allotment. In locations where tamarisk infestation results in a site not meeting the riparian/wetland standards, eradication efforts would reduce tamarisk, thereby promoting growth and reproduction of native riparian and wetland plants, and increasing the diversity in plant structure within the wetland and riparian zone. Because tamarisk reduces groundwater levels and surface flows, its removal would increase the width and length of the riparian zone. Increased canopy shading would result in increased diversity of lower-level herbaceous plants and shrubs, and an increase in the diversity of age-classes.

In cattle allotments, the installation of new fences and pipelines in wetland areas would remove some vegetation. Due to the abundance of water at the riparian and wetland sites, plant recovery should occur in a short time.

Trends and conditions for riparian and wetland areas outside allotments would only be detected by monitoring.

Noxious Weeds: As rangeland health assessments identify places where the native species standards are not being met, prescriptions from the Rangeland Health Determinations would effectively control weeds. Tamarisk would be reduced in riparian and wetland areas. Many noxious weeds invade disturbed sites where there is reduced competition from native species, so increases in the size and vigor of native plants would reduce weedy plant establishment and spread.

In cattle allotments, the installation of new fences, troughs, pipelines, storage tanks, and corrals would remove some vegetation. The disturbance of soils and short-term reduction of vegetation would provide an increased opportunity for establishment of noxious weeds. Because there are no guidelines for activities other than grazing, the removal of noxious weeds in areas outside allotments would only occur where monitoring indicated violations of the National Fallback Standards.

Impacts to Wildlife

The National Fallback Standards and Guidelines for grazing management would promote ecological functions and processes to maintain and improve special status species habitats on public lands. Plant cover and biomass would increase. Wildlife species, dependent upon vegetation, soils, and ecosystem processes, and species diversity of all the biota would increase in the grazing allotments. To the extent that the native species standard is considered in meeting rangeland health standards, grazing practices would be designed to promote the conservation and recovery of special status species.

Increases in plant vigor, biomass, and seed production provide increased food for animal communities. Increases in plant cover and litter provide increased shelter for animals against weather and predation. These effects may be most direct for invertebrates. Increases in plant diversity, especially in the shrub and tree layers, would increase animal diversity by providing increased plant community structure. Improvements in structure, diversity, and size of riparian habitats would be effective in increasing animal diversity and sustaining migratory bird populations.

Reductions in noxious weeds, such as tamarisk in riparian habitats, and prevention of the introduction and spread of new noxious weeds, would aid in increasing or maintaining animal diversity and abundance.

Because there are no guidelines for activities other than grazing, changes in trends and the condition of vegetation outside grazing allotments could only be detected through monitoring.

Impacts to Soil, Water, and Air Resources

Soil: Under the National Fallback Standards, attainment of the soil standard would be an affirmation that complex natural actions are occurring within a large landscape. Implementation of the standard would increase persistent and non-persistent vegetative litter in upland soils. The addition of litter increases development of microclimates that help annual seeds germinate during and after precipitation. Surface litter plays a complex role in soil health. It cycles nutrients, reduces raindrop impacts, traps mobilized sediments, insulates and moderates soil temperature, conserves soil moisture, and is involved in the development of soil structure. Some positive changes expected to occur to soils under this alternative would be increased soil moisture, reduced crusting and erosion, increased biological activity, permeability, root mass, fertility, and plant cover. The results would be continual and probably improve plant species diversity. Plant species establishment stabilizes all types of soils.

A team of field specialists reviewed many aspects of soil characteristics on the allotments. Data were collected on wind and water movement of soils, retention of the surface vegetative litter, accumulation of surface rocks, formation of pedestals, development of rills, surface water flow patterns, formation of gullies, and presence of biological crusts. In the future, each allotment would be reviewed within a prescribed time to ascertain the status of compliance to standards.

Under the No Action Alternative, standards apply only to grazing allotments. Rangeland health assessments were completed for allotments at Valley Wells, Hunter Mountain, Valley View, Last Chance, Clark Mountain, Oasis Ranch, Crescent Peak, South Oasis, Kessler Springs, Jean Lake, Pahrump Valley, Piute Valley, and Deep Springs (BLM 1999). Soil standards within the allotments were met. The condition of soils outside of grazing allotments is unknown. Soil conditions in the remaining portion of the planning area should mimic soil conditions within allotments, when human activity is similar.

Water: Implementing the National Fallback Standards and guidelines would enhance and strengthen management of grazing activities in the planning area. This would contribute to minor improvements of water quality from natural sources. Recent rangeland health assessments determined that resource conditions met the standards in most grazing allotments. Development of prescribed water improvements such as water troughs, pipes, and storage tanks would enhance cattle distribution. In addition, there would be improvement in hydrologic functions resulting in improved water quality. As uplands and riparian areas are enhanced with additional plant vigor, peak runoff and overland flow would be reduced and increased riparian vegetation would protect and stabilize adjacent soils. There would be an increase in water infiltration through most soils and a decrease in sedimentation. There would be no impacts to Wild and Scenic Rivers.

Air: Fugitive dust occurs as a result of the trampling action of livestock and from wind erosion on disturbed surfaces when soil moisture levels are low. Wind erosion is one of five major factors that comprise PM₁₀ emissions in the planning area. When corrective actions are taken, reductions in particulate (PM₁₀) emissions could result because of better vegetative cover and resulting reduced wind erosion. Emission rates from areas outside grazing allotments would continue at current rates consistent with current State Implementation Plans for areas not in conformity with standards of the Clean Air Act. Hydrocarbon and combustion emissions from vehicular activity and grazing, and hydrocarbon emissions (VOC) from ruminant animals would continue at the current low levels in grazing allotments. No significant off-site impacts are anticipated. The proposed plan does not meet or exceed the *de minimus* emission levels (i.e., those that require some form of mitigation), is addressed in the State Implementation Plans, and is exempt from conformity determination (40 CFR Part 93.153 (iii)) In the State Implementation Plan, continuing and recurring activities are exempted where activities would 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, native species, and managing grazing activities would benefit wilderness resources to the degree that natural conditions would be preserved. Site-specific projects to implement fallback standards and guidelines would require separate environmental review, including a “minimum tool analysis” which specifies how projects would be completed. Projects not conforming to the Wilderness Act of 1964, the California Desert Protection Act of 1994, and approved wilderness management plans would not be allowed. Managing ecosystem health and grazing in accordance with these standards and guidelines is not anticipated to have adverse impacts to wilderness.

Impacts to Cultural and Native American Values

The incorporation of National Fallback Standards and Guidelines in the maintenance and promotion of rangeland health is an administrative action that does not require review under Section 106 of the National Historic Preservation Act (NHPA). No historic properties would be affected by this amendment. There would be no specific actions proposed for this issue. Subsequent actions that would be proposed to meet the standards and guidelines might qualify as an “undertaking” under Section 106. These could include placement of protective devices, water troughs, seeding, or other ground disturbing activities. Specific proposals could be reviewed in accordance with Section 106 of NHPA, as implemented in the BLM Statewide Protocol and the 1980 CDCA Programmatic Agreement for cultural resources.

Current livestock grazing behavior and management would continue in accordance with the National Fallback Standards and Guidelines. Grazing has occurred in the California Desert since the 19th Century. Our knowledge and understanding about the effects of livestock grazing on cultural resources is limited for the California Desert, but studies of grazing impacts on cultural resources have been reported for other areas in California and the Great Basin. The primary impacts from grazing would be damage to artifacts and site integrity resulting from the breakage, chipping, and displacement of artifacts, which compromises the context and information potential of a site. Grazing impacts on cultural resources would be greatest in areas where cattle congregate, around springs, watercourses, troughs, shade, and salt licks (Halford 1999; Horne and McFarland 1993; Nielson 1991).

Wild horses and burros can adversely affect cultural resources, especially artifacts and site integrity through breakage, chipping, and displacement of artifacts. Impacts would be greatest in areas where herds congregate around springs, water courses, troughs, bedding areas, and shade.

In the No Action Alternative, livestock, wild horse and burro grazing behavior would continue to threaten cultural resources, including historic structures, archaeological sites and historic landscapes. Current cultural resources management policy is to analyze effects to cultural resources from grazing during environmental evaluations (40 CFR 1500 *et seq*) of allotment and herd management plan development and updates, grazing lease permits and renewals, and range improvements. These activities would continue to be reviewed at the time they are proposed in accordance with Section 106 of National Historic Preservation Act as implemented in the BLM Statewide Protocol and 1980 CDCA Programmatic Agreement.

Impacts to Wild Horses and Burros

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

The CDCA Plan calculated the carrying capacity for perennial grazing allotments and appropriated Animal Unit Months per animal species (livestock, wildlife, wild horses and burros). The plan established Appropriate Management Levels for wild horses and burros. If the AML were maintained within 20% of the carrying capacity, negative impact thresholds on grazing or wildlife would not be approached. If this threshold is exceeded, and if wild horse or burro impacts were found to be causative factors, the BLM may need to adjust the AML downward. Where rangelands were meeting standards, all species that have been allocated forage would be in balance, including wild horses and burros.

If wild horses or burros are found to be a causative factor in failing to meet one or more rangeland standards, appropriate actions would be taken. These actions may include, but not be limited to: 1) removal and placement of wild horses and burros into the National Wild Horse and Burro Adoption Program; 2) the manipulation of their distribution; 3) erecting fencing, and/or providing additional improvements such as water sources, including permanent trap sites on public lands; 4) adjusting the AML downward and 5) adjusting allocation of forage (AUMs) between animal species.

Establishing and fencing livestock grazing pastures to promote achieving standards may impact the free-roaming nature of wild horses and burros. This may change the natural distribution of wild burros and force them to find alternative waters in other geographic areas if they would be fenced off from waters and concentrate a larger number of burros in an area.

Rangeland standards would set criteria for the management of HMAs, which would require a monitoring program to measure the effectiveness of management. Data collected from this monitoring shall be used to establish an AML for the HMAs.

Impacts to Cattle Grazing and Allotments

In the No Action Alternative, cattle grazing activities found within 17 allotments on 782,900 acres of public land would be defined under a basic management strategy that includes allotment management and activity plans, grazing regulations, and mitigation measures specified in Appendix E from current Biological Opinions. Installation of minor range improvements (*e.g.*, short lengths of fence for resource protection) would be expected over the long-term to maintain rangeland health and reach resource objectives. Lessees would directly incur costs associated with additional labor for construction and maintenance to modify grazing activities when portions of the allotment have not met rangeland health standards. For example, traditional grazing areas would be altered or abandoned until assessments indicate management is progressing toward the standard. Changes to the lessee's livestock operation would last one to four years. Changes in grazing use that could be necessary to meet fallback standards in some locations might involve a loss in livestock numbers, alternation of season of use, or other methods. Some changes, *e.g.* elimination of cattle from riparian areas and development of alternate allotment watering sources may be permanent.

Positive impacts would be limited as a result of implementing standards only on grazing allotments. Improvement occurs only on a portion of the allotments. The total area for all allotments is 33 percent of the planning area. Improvement of resource conditions in sensitive areas, such as riparian habitats, would affect a small portion of the planning area.

Rangeland health conditions have been assessed for twelve allotments. Except Last Chance and South Oasis allotments, all allotments meet National Fallback Standards (BLM Records). Failure to achieve the riparian/wetland standard in Last Chance Allotment was due to cattle grazing in riparian vegetation. Failure to achieve the riparian/wetland standard in South Oasis Allotment was due to tamarisk invasion; not direct cattle grazing. The prescribed removal of tamarisk by chemical and mechanical methods around riparian areas in South Oasis Allotment, and the removal of cattle in riparian areas would sufficiently increase native vegetation to meet the Riparian/Wetland Standard. Mechanical and chemical treatment of vegetation would not affect cattle operations in the South Oasis Allotment. Required treatments to control tamarisk would continue annually for three years with periodic treatments as needed (Remijio Chavez, BLM, pers. com.). The presence of vehicles, crew, and equipment would preclude cattle from watering during treatment, but cattle would return shortly after operations cease. Since completion of the rangeland health assessment, the allotment has not been grazed for several years, and the riparian area should be progressing toward the standard.

The annual calf crop would respond with increased weaning weights from improvement of perennial vegetation vigor and maintenance of rangeland health standards. A reduction in death loss from stress-related diseases and a general improvement in body condition for the herd would be expected with improvement in forage conditions.

Meeting National Fallback Standards for upland soils would promote adequate amounts of ground cover to support infiltration, maintain soil moisture, stabilize soils and promote soil conditions that support permeability rates that would be appropriate to the desert climate and soils. The standards for riparian-wetland areas would promote residual vegetation for riparian-wetland functions to dissipate energy from flowing water, capture sediment, recharge groundwater, and stabilize banks along streams. The standard for stream channel functions would promote stream sinuosity (perennial streams), streambed roughness, and streambed depth appropriate with stream banks and watershed. The native species standard would promote physical and biological conditions to sustain native populations and communities, ecological function, and restoration of habitats.

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 would be not anticipated to appreciably affect opportunities for recreation. During open hunting season, the planning area likely experiences increased levels of use, but not to the degree where National Fallback Standards would limit this recreation.

Most non-motorized recreation in the California Desert requires motorized vehicles for access. Under the No Action Alternative for standards and guidelines, 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. The significance of impacts on recreation activities in the planning area would depend on the routes no longer available as a means of access to the public lands. Few, if any, vehicle routes would be closed solely on the basis of the application of the fallback standards, since guidelines have not yet been established for this consideration. It is, therefore, not anticipated to be a substantial factor in the route designation process. Thus little impact to recreation resources and activities is anticipated. However, the fallback standards may affect management strategies on a case-by-case basis, relative to routes in areas being assessed, since all routes fail to meet standards for soils and hydrology. The standards may be considered for active reclamation and rehabilitation strategies on closed routes. There would be 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 impact to existing or future mining operations or exploration activity because, under Alternative 1, the issue is focused towards grazing, and would not impose any new standards on mining. 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 No Action Alternative, route designation would occur that is consistent with CDCA Plan guidance and 43 CFR 8340 *et seq.* Managing ecosystem health in accordance with National Fallback Standards would likely affect motor vehicle access to the same degree as managing a route network consistent with the route designation criteria in 43 CFR. 8342.1. Routes and trails would be located to minimize damage to soil, watershed, vegetation, or other resources of the public lands, and to minimize harassment of wildlife or disruption of wildlife habitats. These would be the same resources addressed by standards and guidelines in managing ecosystem health and grazing activities. In applying regulatory criteria, the parameters established to designate routes of travel would probably mimic the National Fallback Standards and guidelines for grazing management.

There would be little change to the existing management in the No Action Alternative. Opportunities for motorized touring and OHV events could be negatively affected by route designation. The impacts would be not anticipated to be substantial. Under the no action alternative, approximately 5.7 percent of routes are closed or limited in the desert tortoise subregions and approximately 19.3 percent of the routes would be proposed for limitation or closing in one of the most protective areas, i.e. Category I and critical habitat for desert tortoise. Motorcycle-only routes are not designated in the desert tortoise subregions, based on the goals of the area. The impact of this is believed to be minor, as motorcycle-only routes are not identified on the inventory maps and only one route is well know. One of the four standards would not be likely to be triggered as a consideration (i.e., as a landscape-level consideration rather than a route specific consideration), except in areas identified in this plan and potentially in riparian/wetland areas. Generally, the planning area has low route densities, due to topographic features, distance from cities and industrial development, and limited services. Some exceptions exist in small areas adjacent to large highways or that have been extensively mined.

Socioeconomic Impacts

There would be no social impacts from implementation of the No Action Alternative. Grazing lessees and their employees would have to invest time and energy to operate livestock operations in accordance with the National Fallback Standards and guidelines for grazing. Current resource conditions on all but one allotment indicate that cattle grazing activities were not a factor in failure to achieve standards.

There would be no economic impact from implementation of the No Action Alternative for the Crescent Peak and Jean Lake Allotments. These vacant allotments have been inactive for many years. After completion of the Record of Decision (ROD), cattle grazing would be able to continue in these two allotments.

Economic impacts to the lessees of the allotments that meet standards would be insignificant. There would be no detectable costs, as long as all standards continue to be met within the current application of seasonal and year-long grazing use (Runyan 1998). If it were found that standards were not being met, there would be increased time for the lessee to coordinate with the BLM about modifications of grazing mores. Modifications of grazing could include, but would be not limited to additional costs associated with movement and supervision of cattle. Over several years, extra effort and costs associated with maintenance of more range facilities would be realized.

Costs associated with constructing new or refurbishing older range improvements would have to be borne solely by the lessee. Through cooperative efforts, costs could be split with the BLM, county, and other contributors to defray costs. A lessee would incur increased costs to feed or find pasture for grazing if cattle must be removed from all or a part of the allotment to achieve standards. As rangeland health is maintained or improves, resource objectives for grazing use would be achieved. Greater benefits would be realized with the addition of operational flexibility.

Development of water sources for improvement of livestock distribution and protection of these water sources with fencing, would create greater flexibility in selection of superior forage areas by lessee over other areas of the allotment that have forage utilized near prescribed limits (Holechek 1998). Cattle operations could be negatively affected by increased visits by members of the public to unique or riparian-wetland resources that have greatly improved with achievement of standards. There would be more demand and use of services of the local community with increased public use or visitation and would offset, at some point, the lessee's losses in additional management efforts.

4.1.2 Alternative 2 (Proposed Plan) - Standards and Guidelines

Impacts to Vegetation

General Vegetation: Impacts associated with adoption of the Regional Standards of Public Land Health and Regional Grazing Guidelines, rather than using existing National Fallback Standards, and Fallback Grazing Guidelines respectively, would be similar. The Regional Standards and Regional Guidelines specifically address litter production, age distribution, distribution, cover, and other community attributes and would be directed at desert resources. Therefore, in the Proposed Plan Amendment, rangeland health assessments and/or monitoring that show violations of the Regional Standards would be more sensitive to loss of vegetative cover and reduction in plant vigor than in the No Action Alternative.

Improved grazing management practices, through implementation of the Regional Standards and Regional Guidelines in the Proposed Plan Amendment, would result in reduction of the impacts of cropping associated with year-long livestock grazing. An increase in canopy cover and plant vigor would occur. If grazing use exceeds established permitted levels, livestock would be removed or moved to another part of an allotment. In the long-term, under properly managed rangelands, species diversity and ecological condition would be maintained or improved.

Special Status Species: Impacts associated with adoption of the Regional Standards of Public Land Health and Regional Grazing Guidelines, rather than using existing National Fallback Standards and Fallback Grazing Guidelines respectively, would be similar to those impacts described for the No Action Alternative. However, the Regional Standards would be (1) more specific, and (2) directed at desert resources, and the Regional Guidelines address recovery, and not only avoidance of listing. Rangeland health assessments and/or monitoring that show violations of the Regional Standards would be sensitive to reductions in plant populations of special status plants.

Biological Soil Crusts: Impacts associated with adoption of the Regional Standards of Public Land Health and Regional Grazing Guidelines, rather than using National Fallback Standards and Fallback Grazing Guidelines respectively, would be similar to those impacts described for the No Action Alternative. The Regional Guidelines specify that microbiotic crusts must be maintained. Therefore, rangeland health assessments and/or monitoring that show violations of the Guidelines would be sensitive to loss or disturbance of microbiotic crusts.

Riparian/Wetland: Adoption of the Proposed Plan Amendment would use Regional Standards of Public Land Health, and Regional Grazing Guidelines rather than National Fallback Standards and Fallback Grazing Guidelines. Both Alternatives would be similar. The Regional Standards would be (1) specific regarding riparian and wetland systems and stream condition, and (2) directed at desert resources. The Regional Guidelines address specific livestock/wetland conflicts at springs and seeps and water facilities for livestock. Rangeland health assessments and/or monitoring that show violations of the Regional Standards would be sensitive to deviations from proper functioning condition of riparian and wetland systems.

Noxious Weeds: Adoption of the Proposed Plan Amendment would use Regional Standards of Public Land Health, and Regional Grazing Guidelines rather than National Fallback Standards and Fallback Grazing Guidelines. Both Alternatives would be similar. The Regional Standards and Guidelines would be specific with regard to native species standards, and directed at desert resources. Rangeland health assessments and/or monitoring that show violations of the Regional Standards would be sensitive to increases in noxious weeds.

Impacts to Wildlife

Impacts associated with the Proposed Plan Amendment would be similar to those impacts described for the No Action Alternative. However, the Regional Standards and Regional Guidelines would be more specific in addressing litter production, age distribution, distribution, cover, and other community attributes and would be directed at desert resources. Rangeland health assessments and/or monitoring that show violation(s) of the Regional Standards would be more sensitive to changes in the plant forage and cover base and to population changes of special status animals.

Improved grazing management practices through implementation of the Regional Standards and Regional Guidelines would result in an increase in plant biomass, canopy cover, and plant vigor. If grazing use exceeds established levels, livestock would be removed or moved to another part of an allotment. In the long-term, under properly managed rangelands, animal species abundance and diversity would be stabilized or increased.

Impacts to Soil, Water, and Air Resources

Soil: Adoption of the regional standards for Public Land Health, and guidelines for grazing management in this Proposed Plan Amendment would be the same as the No Action Alternative, where grazing continues. Implementation of standards throughout the planning area would result in additional management emphasis to modify soil-disturbing activities with the ultimate goal of increasing litter and soil organic matter, providing adequate infiltration, appropriate permeability of soils, and maintaining microbiotic crusts. The standards would be implemented through results from monitoring and field assessments for all soil disturbing activities.

Water: The effects of the Proposed Plan (Alternative 2) would be similar to those of Alternative 1. However, since the guidelines would be stronger and more definitive in Alternative 2, greater benefits for water quality could be expected, which would apply to all public lands in the planning area. These practices reduce sedimentation and increase infiltration rates. The Proposed Plan would bring positive steps toward solution of the impaired watershed classification on watersheds represented in the NEMO planning area. There would be no impacts to Wild and Scenic Rivers. Alternative 2 would provide more definitive standards to assess non-impairment of outstandingly remarkable values pending a final decision on designation.

Air: The effects of Alternative 2 would be similar to those of Alternative 1. However, since the guidelines would be stronger and more definitive in Alternative 2, greater benefits to air quality can be expected, particularly in areas not covered by State Implementation Plans (Inyo and Mono Counties), since regional standards apply to all public lands in the planning area.

Impacts to Wilderness

Impacts would be the same as the No Action Alternative, but would apply throughout the planning area. The 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

Analysis and effects would be the same as Alternative 1, except that Regional Standards for Public Land Health would be applied. The incorporation of Regional Fallback Standards and Guidelines in the maintenance and promotion of rangeland health is an administrative action that does not qualify as an undertaking subject to review under Section 106 of the National Historic Preservation Act (NHPA). No historic properties would be affected by this proposal. There would be no specific actions proposed for this issue. Subsequent actions that would be proposed to meet the Standards and Guidelines might qualify as an “undertaking” under Section 106, such as placement of protective devices, water troughs, seeding, or other ground disturbing activities. Specific proposals would be reviewed in accordance with Section 106 of NHPA, as implemented in the BLM Statewide Protocol and the 1980 CDCA Programmatic Agreement for cultural resources.

Impacts to Wild Horses and Burros

Impacts would be 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 the Proposed Plan would be similar to the No Action Alternative except that cattle activities associated with natural sources of water would be further restricted. Standards would be applied throughout the planning area. Although attainment of standards in grazing allotments would have a greater priority due to regulatory requirements, improvement in resource conditions would be 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 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 the Proposed Plan 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 is anticipated in the future as a result of population growth in surrounding communities. Increased use could have an adverse effect on soil and air quality, native species, and to a lesser extent, riparian/wetland and stream function.

Mitigation measures that restrict unlimited growth in vehicular access may result in limitations to motorized recreation use, depending on the activity pursued and/or the location and its carrying capacity. Currently, most locations in the planning area are at or below their carrying capacity for the recreational uses that are occurring. One area that has experienced a large increase in use in the last three years is Dumont Dunes Off-Highway Vehicle Open Area. The Proposed Plan would have a positive impact on non-motorized recreation through the enhancement of a more natural environment and trail system such as increased wildlife viewing. Overall the impacts would be not anticipated to be significant, based on implementation of regional standards for public land health. This is due to the low density of the existing route network and the existing levels of use in the planning area.

Impacts to Minerals and Mining

No impacts to existing or future mining operations would be anticipated under the Proposed Plan Amendment Alternative, because current reclamation requirements in state and federal regulations meet or exceed the standards. For example, under the final surface management regulations of October 30, 2001 (effective December 31, 2001), 43 CFR 3809.420 makes plan-of-operation approval subject to a number of performance standards. In addition to general performance standards (technology and practices, sequence of operations, complying with land-use plans, specified mitigation, concurrent reclamation and compliance with other laws), there would be specific requirements for the construction and use of access routes, disposal of mining wastes, and reclamation.

Impacts to Vehicle Access

Impacts of the Proposed Plan would be the same as or similar to the No Action Alternative. Regional standards are one factor that could be considered in the route designation process. Regional standards are one factor that could be considered in the route designation process. Therefore, possible closure of some access routes could occur, in part due to their failure to meet standards. The density of routes and trails brought about by route designations and existing routes may be lower in MUC "L" under this alternative, based on standards for public land health. This may result in less access, where existing route density is significantly greater than average. Less access could have both a positive and negative impact on non-motorized recreation through the enhancement of naturalness and non-motorized trails on the one hand, and making it more difficult to access trailheads and other locations where recreational pursuits occur on the other hand. Since standards would be such a minor factor at this point, and in most of the planning area, the density of routes is not high access would be unaffected. Since guidelines have not yet been established for this as a consideration in route designation, it is not anticipated to be a substantial factor in the route designation process.

Socioeconomic Impacts

Socioeconomic impacts would be similar to the No Action Alternative, 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 affected financially on a short-term (< 10 years) or long-term basis (>10 years) by implementation of management standards on public lands. For most permittees, these standards would be not a substantial deviation from existing policies, and impacts would be anticipated to be minor. Standards provide a good basis for enforcement of policies with explicit criteria for attainment.

Impacts to the general public and surrounding communities within the NEMO economic sphere of influence would be indirect, and generally minor, both locally and regionally. In the long-term, public lands that meet standards would provide socioeconomic benefits for local communities and regional tourism throughout the Planning Area.

4.2 Threatened and Endangered Species Conservation: Desert Tortoise Conservation and Recovery

The Proposed Plan and Alternatives (except No Action) were developed to promote the recovery of the desert tortoise. The goal of any strategy, at a minimum, would be to conserve and recover the desert tortoise in the Eastern Mojave Recovery Unit by achieving the criteria defined within the *Recovery Plan for Desert Tortoise (Mojave Population)* as listed in Appendix A, on page A-1.

4.2.1 Alternative 1 (No Action) – Desert Tortoise

Impacts to Vegetation

General Vegetation: Existing impacts to vegetation would be generally low in tortoise habitat under the No Action Alternative based on rangeland assessments conducted in 1999 and information in Foreman (1998). Projects affecting vegetation and plant communities would be considered on a case-by-case basis. On cattle grazing allotments, wild horse and burro management areas, management systems, stocking rates, and season of use would be adjusted in response to monitoring and rangeland evaluations. The Biological Opinion requirements on cattle grazing also apply.

Most of the adverse impacts to natural communities occur on private lands or on BLM non-wilderness lands. These impacts result from construction of facilities that reduce or eliminate vegetation permanently or temporarily, dissect drainages, promote weedy species or disrupt natural processes. On BLM non-wilderness lands, these impacts generally result from authorized activities under BLM's multiple-use mandate.

Impacts from the cattle grazing allotments include competition with native wildlife for forage (Heske and Campbell 1991), trampling of sensitive natural communities (especially at springs and seeps), reduction in annual plant diversity (Waser and Price 1981), and compaction of soils. The last two effects would be most severe in the vicinity of springs, water troughs, corrals, and salt licks used by cattle (e.g., Airport Corral). Archer and Smeins (1991) reviewed the effects of grazing on ecosystems in arid lands.

Other widely disseminated activities that result in localized effects on natural communities include camping, long-term visitor camping areas, and communication sites. Various recreational activities, such as hunting, target shooting, rock hounding, bird watching, and rock climbing can disturb wildlife, but these activities do not disturb vegetation and have little or no effect on natural communities. Harvesting of plant parts for the dried-plant floral collectors can slightly reduce plant volume in a local area, but the overall extent of harvesting has been very small. Harvesting living plants has had some impacts.

There has not been evidence of substantial route proliferation in this part of the planning area. A few areas adjacent to Interstate 15 have experienced route proliferation. In addition, previously authorized or trespass areas that have not been reclaimed (e.g., desert storm exercise area and a housing development adjacent to SR95 at the edge of the Category I area) have become areas where increased route networks remain. There has been some overall effect on the native vegetation from this small overall increase in routes. In the future, they would likely result in greater effects, as usage of the area increases. This is consistent with the trends that have occurred in the West Mojave.

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

Noxious Weeds: Repeated fires are known to decrease the perennial plant cover and aid some exotic annual plants. In turn, where they gain widespread propagation, these weedy plants provide fuel, potentially resulting in larger fires in the future (Brooks 1999). Surface disturbances that promote the introduction of weedy plants would also increase the likelihood of larger fires (Brooks 1998).

Efforts to control the introduction and spread of noxious weeds have focused on the eradication of tamarisk in riparian areas, generally outside of tortoise habitat in the planning area, and minimizing new surface disturbing activities that promote noxious weeds. These efforts have not been specifically associated with desert tortoise conservation and recovery.

Biological Soil Crusts: Within the grazing allotments, grazing by sheep or cattle can affect biological crusts (Brotherson *et al.* 1983, Memott *et al.* 1998). West (1990) reviewed the literature on tolerance of biological soil crusts to impacts. The crust's responses to disturbances and to recovery from disturbances varied, depending on crust composition, local geomorphology, soil moisture, season of disturbance, and amount of compaction and soil movement from activity. Continued light grazing would probably not produce additional changes in the abundance or species diversity of the biological crusts. However, changes in grazing management based on implementation of the grazing guidelines to reduce grazing pressures, could produce increases in the abundance and diversity of biological crusts, over the long-term. Some effects have also been shown from intense-short-term OHV competitive events (BLM, 1989). The rest from competitive events could produce increases in the abundance and diversity of biological crusts in locations.

Riparian/Wetland: As rangeland health assessments identify places where riparian/wetland standards are not met, management responses would result in the restoration of riparian and wetland areas to their proper functions. In grazing allotments where vegetation at springs does not meet the riparian/wetland standards (e.g., Last Chance and South Oasis), corrective actions would be identified in the Rangeland Health Determination for the allotment. In locations where tamarisk infestation results in a site not meeting the riparian/wetland standards, eradication efforts would reduce tamarisk, thereby promoting growth and reproduction of native riparian and wetland plants, and increasing the diversity in plant structure within the wetland and riparian zone. Because tamarisk reduces groundwater levels and surface flows, its removal would increase the width and length of the riparian zone. Increased canopy shading would result in increased diversity of lower-level herbaceous plants and shrubs, and an increase in the diversity of age-classes, thereby increasing potential forage base for desert tortoise.

Impacts to Wildlife

General Wildlife: Impacts to wildlife would be generally low within tortoise habitat in the planning area, (Foreman 1998). Road kills along Interstate Highways 15 and 40 and other major highways (e.g., Highway 95) would continue to limit some animal populations on a local basis. Wildlife management efforts to minimize impacts consist of minimizing the effects of project activities, such as disturbances and route management, and maintaining wildlife corridor for bighorn sheep.

Special Status Animals: All three desert tortoise Category I habitat units and corresponding critical habitat units in the planning area are crossed by utility corridors designated in the CDCA Plan. Construction and maintenance of transmission lines, pipelines, and fiber-optic cables would continue in these corridors. The activities associated with utilities would disturb additional tortoise habitat. By eliminating vegetation and severely turning over the soil, construction of new pipelines would reduce the forage base and degrade the burrowing suitability of soils, resulting in unquantified reductions in tortoise populations. Although ravens have been observed nesting on transmission lines, and heavy predation on tortoises has occurred at these sites (e.g., Ivanpah Valley, Larry Foreman, BLM, pers. comm. 2001), it is not known whether this the use of transmission lines results in increased predation on hatchling and juvenile tortoises by ravens.

Utilities and other projects are addressed through the use of a Statewide agreement between BLM, US Fish and Wildlife Service, and California Department of Fish and Game and mitigation measures. This Memorandum includes mechanisms that provide for monetary compensation when desert tortoise habitat must be disturbed. Category I compensation occurs at higher rates on a per/acre basis (up to 6 to 1, based on identified factors) to encourage conservation or avoidance of high value habitat. The compensation package is part of a biological evaluation that is provided to FWS and includes proposed project mitigation. The FWS provides a Biological Opinion back, which limits the negative effects of the project, and includes any additional conservation measures that shall be included in the project, and recommendations that may be incorporated into the project.

Tortoise populations would be suppressed ½ mile or more from paved roads that border or cross all Category I habitat units in the planning area. Heavily traveled highways, especially Interstates 15, 40, and 395 would be effective barriers to movements and contribute to fragmenting of tortoise populations. (Nicholson 1978; Garland and Bradley 1984; Boarman and Sazaki 1996 and Jennings 1991) Most of the routes in the Category I units are unpaved. In the desert tortoise subregions, approximately 94.3% of the routes are currently available on the Desert Access Guides, which would be the basis for route designation (with the 1977-1979 inventory) under this alternative. Three routes that are identified as closed on the current Desert Access Guide maps specifically would be designated closed to conserve desert tortoise values under this alternative. Most other routes in desert tortoise habitat on the DAGs would remain available for use. The direct impacts of the use of unpaved routes is infrequent in the East Mojave (e.g., direct take of desert tortoises) except associated with some very specific projects that have occurred in the previous twelve years, but many indirect impacts have been documented (see 4.9.1.2, Special Status Species discussion) and vegetation and soils discussions in this section.

The effects of livestock grazing in cattle allotments on desert tortoise and their critical habitat have been reviewed by the US Fish and Wildlife Service through formal consultation according to procedures in the Endangered Species Act. The FWS issued stipulations to protect desert tortoise in its Biological Opinions addressing cattle grazing. These stipulations reduce impacts to tortoise. The Shadow Valley Critical Habitat Unit is entirely within the Valley Wells perennial/ephemeral allotment. The Ivanpah Critical Habitat Unit is within several parcels of the Valley View, Kessler Springs, and Jean Lake allotments. A portion of the Piute Valley ephemeral-only cattle allotment covers the Piute-Fenner Critical Habitat Unit. However, under the BLM decision based on the Biological Opinion associated with critical habitat designation, the BLM portion is currently precluded from grazing use. North of Interstate 15, additional non-critical tortoise habitat is within the Valley Wells, Clark Mountain, Horsethief Springs, and Pahrump Valley allotments. Avery (1996) and Boarman (1999) reviewed the literature on the effects of livestock grazing on desert tortoise.

Potentially, cattle can step on tortoises and injure or kill them. The likelihood of this is greater for small hatchling or juvenile tortoises and presumably difficult for cattle to see. Similarly, cattle can potentially cave in burrows, disturbing essential thermal cover or entrapping a tortoise. Morafka (pers. comm.) believes that neonate (<1 year old) tortoises would be especially susceptible to entrapment or crushing in burrows because they use the shallow, exposed burrows of rodents. Although trampling of tortoises and burrows is alleged in many papers, few report direct observation of it. An exception is Avery and Neibergs (1997). They compared burrows inside and outside of an enclosure, and observed significantly more damaged burrows outside of the enclosure. Tortoises outside of enclosures also spent more nights in the open. Avery (1998) reported finding a live tortoise entrapped in a collapsed burrow, potentially leading to its death.

Numerous studies have shown an overlap in the diets of cattle and tortoises (Coombs 1979, Sheppard 1981, Medica *et al.* 1982, Avery and Neibergs 1997), and others have documented food of cattle (e.g., Burkhardt and Chamberlain 1982) or of desert tortoise (e.g., Woodbury and Hardy 1948, Jennings 1993, Nagy and Medica 1986, Esque 1994). Avery (1998) found that competition for forage, mostly annual grasses and forbs and perennial grasses occurs in early spring and late spring of years of low rainfall and annual plant production. Tortoise foraging (i.e., behavior and food selection) was altered in areas where cattle were present. During years of low rainfall, and resultant sparse annual plant production, cattle grazing may reduce tortoise forage sufficiently to cause tortoises to lay fewer eggs, thereby reducing reproductive potential. (Tracy *et al.* 1995). Hence, competition for forage would occur in the allotments in the spring of years of low annual plant forage when cattle would eat even the small amount of annual plant forage, available (Avery 1998). Since all the allotments, except Piute Valley, would be perennial/ ephemeral allotments, the lessees can apply for special authorization to graze ephemeral (annual plant) forage in years when forage exceeds 350 pounds/acre.

Cattle grazing can reduce plant cover and density (Blydenstein 1957, Waser and Price 1981, Fusco *et al.* 1995) and alter plant species composition (Avery and Neibergs 1997). In the short-term, this results in increased exposure of tortoises to predation and weather. Tortoises, especially juveniles and hatchlings, use the shade of plant cover for thermoregulation and predator avoidance. Durfee (1988) found more bare ground, a greater proportion of introduced plants, and fewer perennial grasses in grazed areas compared to areas within highway fences. However, Avery and Neibergs (1997) found that the differences would be more complex with some species (e.g., creosote bush) being larger and others being smaller in grazed areas (e.g., Galleta grass). They found that total plant cover was not different inside and outside of an enclosure in a lightly grazed pasture. In a review of the literature, Boarman (1999) found that, although there have been studies on the effects of grazing on soil temperature, chemistry, infiltration rates, and nutrients, they would be difficult to assess in allotments where grazing intensity is light. Compaction of soils occurs even in lightly grazed areas (Avery and Neibergs 1997), but is most pronounced around springs, water troughs, corrals, and salt licks. Soil compaction would limit tortoise's selection of burrowing sites.

The effects of burros on desert tortoise and tortoise habitats would be similar to those described for cattle. The Clark Mountain Herd Management Area is designated as a "Retain Burros" area. It covers about 195,000 acres of the planning area. All of this is tortoise habitat, and about 85,000 acres is in the Shadow Valley Critical Habitat Unit. Historically, burro numbers have exceeded the designated appropriate management level. The herd management area contains at least 140 burros with an appropriate management level of 44 head. The Clark Mountain herd area contains approximately 116 more burros outside of the herd management area, in 2 concentration areas with an appropriate management level set at 0, for a total of about 256 burros in the Clark Mountain herd area. The Dead Mountain herd area contains at least 16 burros with an appropriate management level set at 0 burros. There are 228 burros above prescribed management and about half of the herd areas is in desert tortoise critical habitat.

Perennial shrubs and grasses and ephemeral forbs and grasses would be the forage components for burros. Omart, Woodward, and Seegmiller during the 1970s observed that burros spend about equal time foraging for shrubs as they do for forbs and grasses. There has been limited growth of ephemerals the last several years due to dry conditions. Burros would utilize shrubs more than ephemerals during this time, especially in those herd areas with excess animals. As herds increase in size above appropriate levels, singles or groups of animals move into areas not favored for grazing. Burros become nuisance animals at this point when they invade areas of human habitation as they seek out lawns, gardens, and golf courses. In areas overgrazed by burros, soil would move or be lost through wind and water erosion with the loss of plants and lack of recruitment. Recycling of vegetative matter into the soil surface would be limited or cease. Trailing would become visibly pronounced as burros become hungry enough to actively search for forage.

Various illegal activities occur and would likely continue in spite of the best efforts of rangers and visitor services staff to provide law enforcement and public education about the desert tortoise. Among the illegal activities that would affect desert tortoise detrimentally are the following:

- Collecting of tortoises for pets or other uses
- Shooting of tortoises
- Collecting of vegetation, especially cacti
- Dumping of refuse, car bodies, and hazardous waste.

Except for shooting, the amount and significance of these relative to other impacts on tortoises is not known. Collecting tortoises has been significant in the western Mojave, but human visitation is less in the planning area. Berry (1986) examined carcasses collected from permanent tortoise study plots and reported on the incidence of gunshot deaths. She found that only 1 of 31 (3%) on the Ivanpah Valley plot and 0 of 34 on the Goffs plot had been killed by gunshot; both of these plots are in the East Mojave. In the West Mojave planning area, the proportion of gunshot deaths ranged from 14 to 29 percent of animals examined on five plots. Berry attributed the higher rates of gunshot mortality in the western Mojave to more people, greater vehicle access, greater density of routes, and proximity to urban centers. Because it takes almost 20 years for desert tortoises to reach their breeding age, removal of adults from the population reduces population viability.

Repeated fires can decrease plant cover and favor exotic non-native annual plants. Where exotics are widespread, they provide fuel, potentially resulting in larger fires. Surface disturbing activities and vehicle use that promote the introduction of weedy plants would increase the likelihood of larger fires in the future (Brooks 1998,1999). As perennial plant cover is reduced, tortoises would experience increased exposure to weather and predators. As weeds out-compete native plants and reduce populations of native forage species, populations of tortoises would decline.

Predation by common ravens is intense on young desert tortoises. Common ravens are found in greatest concentrations in and near agricultural and urbanized areas, such as Baker, Needles, and Primm (Knight *et al.* 1993). Away from these areas, ravens are most abundant near landfills and major highways where road kills and trash augment food supplies (Fauna West Consultants 1990). Coyotes, kit foxes, skunks, badgers, and roadrunners eat eggs, hatchlings, and juvenile tortoises. Raven predation is regarded as highly important to the survival of desert tortoises. Human activities provide a plentiful food base for the ravens, and their resultant take of tortoises jeopardizes viable populations.

Since ravens eat human refuse, illegal dumping sites on BLM lands are being permanently closed at Nipton, Goffs, and Mountain Pass within the Planning Area, and at Essex, Vidal, Vidal Junction, Amboy, and Chambliss, immediately south of the planning area. Other than this, there is currently no active raven management program in the Planning Area. Current levels of predation would be expected to continue, thereby reducing tortoise recruitment.

Under the No Action Alternative, most federal actions that may affect the desert tortoise and other listed species, would receive review by FWS through the consultation process on a case-by-case basis required by the Endangered Species Act. FWS would provide a Biological Opinion that includes measures developed by FWS and BLM to limit negative effects on tortoise populations and habitats.

Impacts to Soil, Water, and Air Resources

Soil: Under the No Action Alternative, mitigation measures authorized by BLM decision record and listed in current Biological Opinions for cattle grazing in desert tortoise habitats would direct future management. In cattle allotments, limitations for perennial forage utilization designated by existing range conditions would continue. Restrictions for the protection of tortoises and soil disturbance during construction of range facilities would continue. Temporary, non-renewable and ephemeral forage authorizations would be limited in amount and period. Range improvements and designated periods of construction are detailed in the Biological Opinion for each allotment.

Development of range improvements is authorized by BLM decision record based on guidelines is provided by Biological Opinions, allotment management plans, the California Desert Conservation Area Plan, and regulations. Installation of fences, springs, pipes, wells, and cattleguards would affect soil by compaction and disturb the soil surface. Compaction and disturbance of soil would occur when hauling equipment, materials, and personnel to work sites. Soil would be compacted and vegetation trampled by vehicles being parked adjacent to access road and work sites or as vehicles are turned around. Depending on the type of soil, tire and human tracks could be evident from construction activities for one to five years.

Soil compaction and disturbances would occur during unloading of materials and digging cattleguard pits prior to installing concrete bases and metal grids. More than 90 percent of the soil compaction and disturbances from well drilling operations would occur during setup of a drill site. Pipeline ditches may disturb soils, but can be mitigated by locating them in roads away from tortoise habitats.

Most projects, except for fences and new utilities within corridors, would avoid soil disturbances in desert tortoise habitats by utilizing previously disturbed sites or existing routes of travel. About two acres of soil would be disturbed and compacted during construction of fencing. Soil compaction and disturbance would occur when vehicles travel the proposed fence route to distribute fencing materials. Perennial vegetation would be trampled during distribution of fence materials. The construction of fences does not require removal of plants from the soil. Given sufficient time, trimmed or trampled vegetation would recover.

Installation of “tortoise fences” occurs in desert tortoise habitat along high priority areas of existing roads or highways that would be expanded or realigned. A typical tortoise fence is a barbed wire fence with wire cloth attached to the lower portion of the fence that is buried in a ditch parallel to the fence. Wire cloth prevents tortoises and other reptiles from crawling over or digging under the fences and walking onto the roads. Tortoise fence has been installed for several years. Installation of tortoise fences causes surface and subsurface soil disturbances, compaction along the fence, and soil movement. These impacts to soil quality would be included in the analysis of the environmental documents for the road construction project.

The addition of water sources and fences would disrupt cattle use of trails. New trails would be formed with recurring passage of cattle within a year. Compaction of soil would occur with establishment of new trails. Assuming cattle use the available trail system equally, the addition of new trails would be offset by the loss or reduction of use of previously used trails. Inadequately distributed water sources would be the primary cause of poor livestock distribution (Holechek, 1998).

Off-road vehicles have the potential to impact soil resources, particularly in areas of highly erosive soils. Impacts to soil are difficult to quantify with casual observation. Vehicle and pedestrian traffic are the primary sources of soil surface disturbance and compaction. Soils that have been disturbed by vehicles would be less resistant to wind erosion than undisturbed soils (Gillette). Studies at Dove Springs Canyon in the western Mojave Desert demonstrated that off-road usage by vehicles causes accelerated erosion and increased sediment yields (Snyder et.al. 1976).

Compaction of soil caused by vehicles directly affects continuation and establishment of plants (Webb et.al. 1978, Eckert et.al. 1977, Davidson and Fox 1974 and Duck 1974). The lack of vegetation in and near active roads is obvious. Compaction and disturbance to soil and plants lessen as distance increases from these areas of concentrated and continual use. Off-road vehicle activities in dune systems resulted in removal of surface vegetation and the resulting unstable sand dune began to migrate (Barry and Schlinger 1977, and Godfrey et.al. 1978). However, some dunes within specific habitats were unaffected by off-road vehicle use with low tire pressure (Niedorada 1977).

There has not been evidence of substantial route proliferation in this part of the planning area. A few areas adjacent to Interstate 15 have experienced route proliferation. In addition, previously authorized or trespass areas that have not been reclaimed have become areas where increased route networks remain, with resulting effects to the soils in these areas.

Most routes would accommodate most sizes of vehicles. Impacts to soil quality would vary by soil type and amount of vehicle use. The widths of some routes do expand and contract based on route condition, amount of vehicle use, and climatic conditions. The impacts as shown above would be soil compaction, accelerated wind and water erosion, increased off-site sediment yield, and soil surface disturbance. Due to the limited amount of human activities, with the adoption of Alternative 1, some temporary disturbances would occur, but permanent soil impacts would be limited to slight increases due to the continued casual usage of the route network by the public.

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; i.e. better cattle distribution associated with water improvements and hydrologic functions resulting in improved water quality are anticipated based on implementation of standards.

Air: Alternative 1 would not appreciably affect air quality for desert tortoise conservation and recovery. Minor effects and strategies are the same as those identified in 4.1.1, implementation of fallback standards.

Impacts to Wilderness

None of the actions specific to recovery of the desert tortoise under this No Action Alternative would adversely affect wilderness resources. Site-specific projects to facilitate recovery of the desert tortoise would require separate environmental review, including a "minimum tool analysis" which specifies the manner in which projects would 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 would not be allowed.

Impacts to Cultural and Native American Values

Analysis Common to All Issues: Under the No Action Alternative, there would be no change to the Cultural Resources Element of the CDCA Plan. In 1980, BLM entered into a Programmatic Agreement with the California State Historic Preservation Officer that governs BLM's implementation of the CDCA Plan for cultural resources and provides processes for the resolution of effects on significant historic properties. The agreement forms the basis for cultural resources program activities, land management planning, and undertakings in the CDCA with regard to Sections 106 and Section 110 of the National Historic Preservation Act. In this alternative, all undertakings would continue to be reviewed in consultation with the California State Historic Preservation Office under Section 106 of the NHPA, as implemented in the *State Protocol Agreement between the California State Director of the Bureau of Land Management and the California State Historic Preservation Officer* (1998), and the *Programmatic Memorandum of Agreement among the Advisory Council on Historic Preservation, the Bureau of Land Management (DOI), and the California State Historic Preservation Officer regarding the California Desert Conservation Area* (1980).

Desert Wildlife Management Areas: The No Action Alternative would continue current MUC class and ACEC designations. Current patterns and levels of cultural resources protection would continue, with each MUC class appropriately conditioning the activities that would occur in those areas. Proposals for fencing, bridge, or culvert construction to facilitate tortoise recovery would be reviewed in accordance with Section 106 of NHPA, as implemented in the BLM Statewide Protocol and the 1980 CDCA Programmatic Agreement for cultural resources.

General Management Strategies: The general management strategies proposed in the No Action Alternative would be administrative in nature and would not qualify, subject to review under Section 106 of the National Historic Preservation Act (NHPA). No historic properties would be affected. There would be no specific actions proposed for this issue. Subsequent actions that would be proposed to implement agreements and other administrative management decisions might qualify as an "undertaking" under Section 106. Specific proposals would be reviewed in accordance with Section 106 of NHPA, as implemented in the BLM Statewide Protocol and the 1980 CDCA Programmatic Agreement for cultural resources.

Under the No Action Alternative, current management prescriptions would continue. Routes would be inventoried and designated in accordance with the CDCA Plan. Cultural resources effects would be evaluated on a case-by-case basis for each route designation in accordance with the CDCA Programmatic Agreement and the Protocol. The No Action Alternative would result in no significant change in the use or availability of these routes for motorized vehicles, nor result in a significant reduction or increase in threats to cultural resources beyond the conditions that have existed over the past 60 years. Most of the routes in the planning area were in existence at the time the CDCA Plan was approved, and many of these routes date back to at least the 1960s or earlier, when desert travel became popular with the advent and availability of four-wheel drive vehicles. Exceptions include some areas adjacent to the Interstate highways, and some localized areas where developments were proposed, and may or may not have been developed. Adverse effects to historic properties would be resolved in accordance with the CDCA Programmatic Agreement and the Protocol.

Livestock Grazing: In the No Action Alternative, livestock grazing and wild horse and burro impacts would be the same as those identified under Section 4.1.1 for Fallback Standards and Guidelines. Cultural resources, including historic structures, archaeological sites and historic landscapes would continue to be threatened. Current cultural resources management policy is to analyze effects to cultural resources from grazing during the environmental review of subsequent projects at the time they are proposed in accordance with Section 106 of National Historic Preservation Act.

Wild Horse and Burro: Current management policy for cultural resources analyzes effects from grazing. Impacts are assessed during the environmental evaluation of allotment and herd management, grazing lease permits and renewals, and range improvements (40 CFR implemented in the BLM Statewide Protocol and the 1980 CDCA Programmatic Agreement). These activities would be reviewed at the time they are proposed in accordance with Section 106 of National Historic Preservation Act, as implemented in the BLM Statewide Protocol and the 1980 CDCA Programmatic Agreement.

Land Tenure: Under the No Action Alternative, consolidation of land ownership patterns through acquisition and disposal of lands would continue to unify high value desert tortoise habitat. Lands identified for future disposal would be evaluated for effects to cultural resources. There would be no change in current management practices and no measurable net effects to cultural resources.

In the process of identifying lands for acquisition and disposal, biological factors would be the primary considerations contributing to the decision. The criteria developed for identifying lands for the protection and conservation of special status species, such as lands with springs and water sources, coincidentally identified lands that would be also associated with historic and archaeological sites. Acquiring these lands would result in greater protection for cultural resources. Disposal of lands identified as having low qualities for habitat would not necessarily mean that those lands had low values for cultural resources.

Vehicle Management: In the planning area, approximately 94.3% of the routes are currently available for use on the Desert Access Guides, which, in addition to the 1977-1979 inventories, are the basis for route designation under this alternative. Designating a route "open" in the CDCA would authorize casual and non-competitive use of routes for driving, and larger areas of potential effect for cultural resources to accommodate parking, camping and related recreational activities. The areas of potential effects on cultural resources would be identified in the CDCA Plan as previously disturbed areas that would be up to 300 ft. on either side of the centerline of a route, creating a 600 ft. wide overall area of potential effect for cultural resources. Disturbed areas are not to be marked on the ground at this time. In ACECs, this area may be limited to 100 ft. on either side of the centerline (200 ft. wide area of potential effect), and activities off of routes may be limited, e.g., no staging of secondary vehicles. Vehicles have been excluded from Ivanpah dry lake bed surface and five other routes specifically closed for biological rather than cultural protection. In addition, on-routes and motorcycle routes would not be available in the desert tortoise subregions, based on the goals of the area. One of these is a relatively well-known route that has seen light usage since the Barstow-to-Vegas was discontinued.

Under the No Action Alternative, current prescriptions would continue. Cultural resources effects would be evaluated and resolved on a case-by-case basis for each route designation in accordance with the CDCA Programmatic Agreement and the Protocol. The No Action Alternative would result in no significant change in the use or availability of these routes for motorized vehicles, nor result in a significant change in threats to cultural resources beyond the conditions that have existed over the past 30¹ years.

¹ The ICMP route inventories were published in 1974 and are still available.

Impacts to Wild Horses and Burros

The No Action Alternative would use existing CDCA Plan management and the existing East Mojave Herd Management Area (HMA) Plan to manage an appropriate management level (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 HMA Plan would be developed incorporating standards and guidelines, consistent with federal regulations for rangeland reform; implementation of maximum allowable use levels on key forage species; habitat monitoring guidelines; population census; burro removals; the development of natural and artificial waters to relieve pressures of some critical waters, to aid in the distribution of burros, to erect permanent trap sites to aid in population control, and development of other range improvements required to promote desert tortoise conservation and recovery

Under the No Action Alternative, the current situation would continue. There may be impacts to wild horses and burros found to be causative in not achieving one or more of the fallback standards at the Clark Mountain Herd Area within critical desert tortoise habitat and the larger Clark Mountain Herd Area in Category I desert tortoise habitat. Impacts would be similar to those identified in 4.1.1.

Live trapping methods that include helicopter assisted removals or water trapping would be used to continue to remove wild burros until their populations would be eliminated in the eastern portion of the Clark Mountain Herd Area. Burros gathered in the trapping process may experience stress. The helicopter related stress would be functions of the distance animals re carried, 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 animas become agitated when they can't escape the trap and when they are being loaded onto trailers. After transport to the Ridgecrest Wild Horse and Burro Holding Facility, burros adjust well to domestication. At the facilities, the burros would be vaccinated, wormed, freeze branded, tested for equine infectious anemia and given any medical treatment needed prior to being placed for adoption, which typically takes four to six weeks. Burros would be adopted for use as pack animals, riding, pulling carts or wagons, guard animals for livestock, and as pets. Presently the BLM's National Wild Horse and Burro Adoption Program is the only method available for control and disposition of excess wild horses and burros removed from the public lands.

There is a risk of inbreeding and reducing genetic diversity if specific phenotypes or physical characteristics would be selectively managed for, and if the adult population is less than 50 animals.² These impacts 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.

Impacts to Cattle Grazing and Allotments

The No Action Alternative would allow grazing use to continue under current leases and their associated Biological Opinions, and terms and conditions, found in Appendix E. Cattle cannot graze ephemeral forage on the allotment until there would be at least 350 pounds of annual grasses and forbs per acre. No additional impacts to cattle operations would be foreseen as a result of implementation of fallback standards and guidelines.

² Ian Robert Franklin, "Evolutionary change in Small Populations" *Conservation Biology* 1980

Few range improvements have been installed in the last ten years. Periodic and annual maintenance is required on existing facilities. There would be significant numbers of range improvements found in wilderness. Maintenance requires the lessee to visit improvements by foot, vehicle, and horseback. Maintenance of existing improvements coupled with minimal additions of new improvements, has marginally increased demands for maintenance. Allotments not fully using the grazing lease would have increased proportional overhead costs for new maintenance, animal husbandry, and administration.

The 1998 Plan Amendment for grazing allotments allowed grazing use on Granite Mountain and Lanfair Valley allotments to be voluntarily relinquished by the lessee, based on third-party buy-out provisions, and they are no longer available for grazing use. This process amends the CDCA Plan by removing the designation of the allotments, their forage allocations, and the removal of authority for range improvements. It is unknown whether this option would be exercised on other allotments, but a potential opportunity remains that would lead to substantial decreases in grazing use the East Mojave.

Impacts to Utilities

The protection of the desert tortoise would not have significant new impacts on existing utility corridors, because avoidance strategies, mitigations and compensations for habitat disturbances are already applied on utility projects within desert tortoise habitat. This is consistent with the State Memorandum of Understanding with wildlife agencies. There may be additional site-specific mitigation methods on utilities developed within desert tortoise habitat based on the quality of the habitat and other factors, as a result of biological surveys.

Impacts to Recreation Resources and Activities

Motor-vehicle Access-Related Activities: Under this alternative 94.3 percent of the routes would be open in the desert tortoise subregions, including major washes, consistent with desert tortoise subregion goals. In desert tortoise route subregions (Category I habitat), opportunities for these kinds of recreational activities would remain the same, with a few exceptions, because BLM would apply the CDCA Plan's route approval process to "existing" routes (1979 maps, with some Desert Access Guide (DAG) route maps, published 1988 & 2000). Under that process, "approved" routes would include "primary access routes intended for regular use and for linking desert attractions for the general public as well as secondary access routes intended to meet specific user needs, consistent with desert tortoise goals and objectives." Closed and limited routes consist of previously closed lakebeds to protect other recreational and commercial pursuits and a few routes that have been managed as closed (by Federal Register notice) since 1979, specifically to protect desert tortoise values, and have been shown as closed on DAG maps, and non-routes (i.e. routes and washes not in the area inventory). (CDCA Plan, 1982 Amendment #3; p.77 of the Plan's March 1999 reprint)

Dualsport and other organized, permitted noncompetitive motorized activities would continue to be permitted using standard mitigation measures and compensation ratios (up to 6 to 1, depending upon factors, for any disturbed Category I habitat.). Organized motorized competitive events would not be authorized under the No Action Alternative in desert tortoise Category I or critical habitats. It has been 1989 since the last event was run. Several new strategies were developed for the 1989 event to prevent impacts to desert tortoise and its habitat as this was the year that the desert tortoise was listed as a threatened species. The race was denied in 1990 based on issues identified in the Barstow-to-Vegas post race monitoring report (Barstow-to-Vegas EA, Appendix 2-Post Race Monitoring Report, BLM, 1989). One of the issues cited in the report was impacts to desert tortoise critical habitat. The loss of Category I habitat as an area potentially available for organized competitive events is likely to continue for the reasonably foreseeable future. This would cover 354,300 acres.

Other Recreation Activities: Opportunities for non-motorized activities would change with respect to routes that would no longer be in the inventory under the No Action Alternative and all other alternatives. In all other respects, impacts of the No Action Alternative are anticipated to remain the same. Activities would not be disrupted, or displaced in time or locations, or rendered impractical or infeasible by the continued route uses enabled through application of the route approval process, except as noted below. Organized, permitted nonmotorized activities would continue to be permitted using standard mitigation measures and compensation ratios (up to 6 to 1, depending upon factors, for any disturbed Category I habitat.) Opportunities for non-motorized activities would continue to be further enabled throughout the planning area with unchanged motor-vehicle access to popular locations for rockhounding, landsailing, camping, hiking birdwatching and other recreational activities that take place in the area. Recreational activities that use small, yet navigable washes or routes that were not included on previous inventories would be adversely affected within the desert tortoise subregions, because they would not have motorized-access to these locations in Category I habitat in the future. This would primarily affect hunters and technical-four wheel-drive users. Hunters and other recreationists could access these areas by horseback or foot. The desert tortoise subregion does not have major wash subsystems like areas further south of the planning area, but does have some areas with secondary wash systems, that are attractive to desert tortoise and would be unavailable for motor-vehicle use.

Impacts to Minerals and Mining

Currently there are no active mines in the NEMO desert tortoise Category I habitat. Therefore, there would be no impacts to mining from the No Action Alternative. The overall impact to the mining industry is not significant, because there is not a substantial overlap between high mineral potential areas and Category I habitat. Mitigation costs for the desert tortoise for future large mining operations would be moderate, but would be considered heavy for future smaller businesses.

There would be no change in tortoise compensation payments, or in the existing management. The mitigation for minerals and mining impacts would continue, consistent with Category I Tortoise Habitat Guidelines over 354,300 acres of Category I habitat. The mitigation measures for mineral related operations would be unchanged. For the No Action Alternative, mitigation measures would be 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 43 CFR 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, mitigation consist of compensation for lost habitat, fencing, seasonal use restrictions, training programs, field contact representatives, designated and authorized biologists for tortoise surveys and handling, and speed limits for vehicles.

Impacts to Vehicle Access

There would be small change to existing management under the No Action Alternative. Under this alternative 94.3 percent of the routes would be designated open in the desert tortoise subregions, including major washes. Opportunities for casual use motorized touring and non-competitive OHV events would not be substantially affected by route designation. Closed and limited routes consist of previously closed lakebeds to protect other recreational and commercial pursuits and a few routes that have been managed as closed (by Federal Register notice) since 1979, specifically to protect desert tortoise values, and have been shown as closed on DAGs, and non-routes (i.e, routes and washes not in the area inventory). In addition, motorcycle routes would not be available in the desert tortoise subregions, based on the goals of the area. One of these is a relatively well-known route that has seen light usage since the Barstow-to-Vegas was discontinued.

Under this alternative, route designation has occurred consistent with CDCA Plan guidance and 43 CFR 8340 *et.seq.* and reflects protective closures and decisions for this area that have taken place to date to protect desert tortoise and other biological values. This reflects route designation efforts associated with the CDCA Plan and updates based on the 1982 amendments and reflected in the Desert Access Guides. The application of route designation criteria in the 1980's, prior to desert tortoise listing, to minimize conflicts between sensitive resources and maintain consistency with fallback standards has resulted in minor impacts to vehicular access, based on the relatively lower density of routes in the East Mojave. The network of routes available for casual motorized use is anticipated to continue to provide reasonable access through the planning area.

MUC "Intensive" (I) open area (Dumont Dunes OHV Area) in the East Mojave would not be affected, as it is outside of desert tortoise habitat.

4.2.2 Alternative 2 - Desert Tortoise

Impacts to Vegetation

General Vegetation: Alternative 2 would have the greatest positive affect on vegetation. Efforts to maintain and enhance habitats and rehabilitate disturbed areas 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. There would be an upward trend in vegetation condition, representing a progression from mid-seral stage to late seral stage. Revegetation of trails and congregation areas would occur.

Similarly, where cattle grazing is removed 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.

Reducing the parking and camping off of road allowance from 300 feet in Alternative 1 to 50 feet in Alternative 2 would reduce the potential for disturbance of vegetation. The prohibition on driving in any wash would reduce disturbance of vegetation and soils in washes.

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

Noxious Weeds: The impacts on noxious weeds would be similar to Alternative 1. There may be some additional benefits from efforts to enhance habitat and rehabilitate surface disturbances, including closed routes.

Biological Soil Crusts: Impacts to biological soil crusts would be the same as Alternative 1 except the loss of cattle grazing and the elimination of the Clark Mountain Herd Management Area would decrease the amount of disturbance to biological soil crusts.

Riparian/Wetlands: Impacts would be similar to the No Action Alternative, except modest long-term benefits could be anticipated as a result of the closure of all washes.

Impacts to Wildlife

General Wildlife: Benefits to wildlife populations would occur primarily in the ACECs where burro and cattle grazing would be removed. These actions would reduce competition for forage and trampling of animal burrows and allow restoration of disturbed areas on trails and at watering sites. Various measures in the Desert Tortoise Conservation Strategy (Appendix A), together with route designations, decreased parking and camping distances off routes would reduce habitat losses and result in reclamation of habitat through reclamation of closed routes. To the extent that the raven management strategy is effective in reducing ravens, depredations on lizard and bird populations would be reduced.

Fencing of interstate and other major highways would reduce mortality of lizards, snakes, and small rodents. Boarman (1995) surveyed both sides of Highway 58 for vertebrates along 24 km (14.4 mi.) of a heavily traveled section of road. Tortoise-proof fencing was present for 4.8 km (2.9 mi.). He also surveyed Highway 395 along 24 km (14.4 mi.) that had no fencing. On four surveys between 1992 and 1994 (1992, 1993, May 1994, and July 1994), 1,190 carcasses of 31 species (13 reptiles, 8 birds, 10 mammals) were found along the highways. Per kilometer, 37.8 carcasses (1,088 in 46 km.) were found along unfenced highway, and 4.3 carcasses per km (102 in 24 km) were encountered along unfenced highways. Surprisingly, individuals of leopard lizard (2), zebra-tailed lizard (2), and antelope ground squirrel (2) were found only along the fenced portion. Six species of snake (of eight species recorded) were found only on the unfenced portions. Seven species of birds also had reduced mortality on fenced portions of highway, perhaps due to the reduced prey on the roadway. Tortoise mortality was 1.2 animals/km (35 total) along unfenced highway and <0.1/km (2 total) along the fenced highway. Boarman concluded that fencing of roadways greatly reduces highway kills of many vertebrate species.

Fenced highways will require culverts or underbridges to allow the movement of individuals across highways for migrations, population dispersal, and genetic interchange. Boarman (1995) also reported on the use of culverts by tortoises along the two highways described above. Due to the low numbers of tortoises near the highways, results were inconclusive. Additional studies are needed to assess the overall population fragmentation effects of fencing and culverts. The mortality along fenced highways indicates that some animals are able to cross the barrier. Small snakes and lizards might be able to move freely in spite of the presence of barrier fences.

Some direct mortality resulting from animals caught in the fence has been observed. Animals caught included leopard lizard (1 individual), western whiptail lizard (5), zebra-tailed lizard (1), coachwhip snake (3), and Mojave rattlesnake (1). These mortalities and other observations of behavior by Boarman indicate that primarily lizards can get caught in the fences.

Special Status Animals: Alternative 2 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 (see Chapter 2, Section 2.10.2) would reduce habitat disturbance and direct mortality of tortoises (Appendix A). For example, approximately 26.4 percent of routes would be closed or limited in the ACECs through the routes of travel designation process. This would reduce the potential area of disturbance and limit the spread of noxious weeds in these areas, particularly in the 19 percent of closed routes. 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 in the desert tortoise Category I habitat 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 result in increased plant biomass used by tortoises as cover against weather and predators. Competition for forage, in years and seasons when it occurs, would be eliminated, thus improving nutrition and lowering tortoise susceptibility to upper respiratory tract and shell diseases. Trampling is most significant for young tortoises because they are more difficult to see and because neonate tortoises (<1 year old) live in shallow rodent burrows (David Morafka, CSU Dominguez Hills, tortoise researcher, pers. comm.). Competition is most significant for young tortoises, especially neonates, because their small size limits the food available to them (David Morafka, pers. comm.). Reductions in mortality in the younger age classes in this alternative would increase tortoise recruitment rates into the breeding population, thereby aiding 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 aid recruitment. Fencing of interstate and other major highways would reduce animal road kills that provide food for ravens. Elimination of this food source would help control raven populations.

Tortoises could be killed as they attempt to cross major highways. Fencing of interstate and other major highways would reduce tortoise mortality. Elimination of this mortality would allow restoration of depleted tortoise populations near these corridors. Increased monitoring would allow more efficient responses to population declines and changes in age structure. No other special status animals would benefit appreciably.

Utilities and other projects are addressed through the use of a programmatic biological opinion that includes mechanisms that provide for monetary compensation when desert tortoise habitat must be disturbed. Category I compensation occurs at higher rates on a per/acre basis (standard 5 to 1) to encourage conservation or avoidance of high value habitat. A short project-specific biological evaluation is provided to FWS and includes proposed project mitigation. The FWS provides a Biological Opinion back which is tiered off of the programmatic biological opinion, and which limits the negative effects of the project. This expedited biological opinion includes any additional conservation measures that shall be included in the project, and recommendations that may be incorporated into the project.

Impacts to Soil, Water and Air Resources

Soil: Under Alternative 2, impacts to soils would be similar to the No Action Alternative, but there would be tangible benefits associated with designation of the ACECs that would preclude or limit use. The designation of 354,300 acres of public land as an ACEC would improve soil quality through prescriptions aimed at enhancing desert tortoise habitat and reducing impacts from surface disturbing uses. 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 (see pages 4-85 of the 1982 plan amendments to the CDCA Plan DEIS). Additional benefits would accrue from the closure of 19.1 percent of routes in the desert tortoise subregions of the planning area, a 14.6 percent increase above the no action alternative. Areas outside Category I habitat would experience smaller benefits in the reasonably foreseeable future (i.e., beginning in the next five-to-seven years), based on the current 2004 deadline for completion of the routes of travel designations in the rest of the planning area.

Cattle grazing activities on about 200,937 acres within six allotments would be lost under Alternative 2 would improve soil quality by maintaining living and dead vegetation and resulting litter on sites where it had previously been removed by grazing. Protection of soil from accelerated erosion can occur with the addition of vegetative cover and litter. With Alternative 2, there would be soil improvement with water permeation at springs and seeps. Vegetation not previously able to reach maturity would be able to reproduce and establish full root systems. Improved water penetration would reduce overland flow of water and soil loss from storm water erosion. Since there are few natural springs in the allotments being closed, improvement of soil quality from these areas is limited, when compared to the surrounding uplands.

There would be considerable reductions in soil disturbances around troughs, wells, corrals, and fences. The loss of grazing use would eliminate the utility of many range facilities. Reduction in soil compaction would take over ten years at the most compacted sites and would be preceded by plant invasion. Heavy use areas hardened with years of compaction from cattle, burros, and vehicle use would exhibit slight decreases in soil erosion. Soil disturbances would occur during development of range improvements for new allotments. However, construction in allotments is expected to be limited.

Improvements in soil quality would occur through natural restoration of plant communities for areas where past mining, grazing, off-road vehicles, and road-building activities have been precluded.

Water: Impacts would be similar to the No Action Alternative. 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 appreciably affected by adoption of Alternative 2 for desert tortoise conservation and recovery.

Impacts to Wilderness

Impacts would be the same as Alternative 1. Actions specific to recovery of the desert tortoise via relinquishment of cattle grazing and burro management in Shadow Valley ACEC, would result in localized beneficial impacts to native vegetation, biological crusts, soils, and wildlife forage values within wilderness, primarily north of the Boulder Corridor, but also along the western front of the Dead Mountains, and in a small eastern portion of the Hollow Hills wilderness.

Impacts to Cultural and Native American Values

Under Alternative 2, there would be no change to the Cultural Resources Element of the CDCA Plan. The CDCA Programmatic Agreement and Protocol would still govern implementation of the CDCA Plan for cultural resources, and would provide processes for the resolution of effects on significant historic properties. This alternative would require that the CDCA Programmatic Agreement be amended to provide for the phased identification and evaluation of cultural resources.

The establishment of 354,300 acres of ACECs would result in increased protection and preservation of cultural resources within the ACEC boundaries. Activities that would impact cultural resources would be limited, by capping the cumulative surface disturbance allowed to 1%. Activities that would promote recovery of the desert tortoise, such as fencing, bridges, or culverts would be reviewed per Section 106 of the National Historic Preservation Act as implemented in the BLM Statewide Protocol and the 1980 CDCA Programmatic Agreement for cultural resources.

The agreement would define the nature of the undertaking and the level of effort necessary to address effects. The agreement would also allow for the designation of “open” routes, provide for a phased identification and evaluation effort, and for consultation with SHPO, interested persons, and tribal entities over the design and implementation of identification efforts. Mitigations would be provided when eligible cultural resources were affected. Implementation of the amendment to the CDCA Programmatic Agreement would satisfy agency responsibilities under Section 106 of the National Historic Preservation Act.

Approximately 73.6 percent of the routes would be designated open in the desert tortoise subregions, and 26.4 percent of the routes of travel would be designated closed or limited under Alternative 2. Therefore, under this alternative, approximately 20.7 percent of the routes would no longer be available for use by the public that are currently available or would be additionally limited, and associated motor-vehicle parking stopping and camping along those routes would be likewise limited. Parking and camping would be limited to within 50 ft. of the centerline of the route (100 ft. area of potential effect). Cultural resources effects would be evaluated on a case-by-case basis for each route designation in accordance with the CDCA Programmatic Agreement and the Protocol. This alternative would provide limits to activities that could occur along open routes within ACECs and make fewer routes available for use. This change may or may not result in a measurable reduction in threats to cultural resources.

Under Section 106 for Alternative 2, BLM would propose and develop an inventory and evaluation to address effects on historic properties in consultation with SHPO. The decisions in the Northern and Eastern Mojave Plan (NEMO) would be amendments to the existing CDCA Plan. They implement prescribed decisions. BLM would propose to amend the CDCA Programmatic Agreement with SHPO to implement a cultural resources strategy for routes of travel within the NEMO planning area. The agreement would define the effort needed to address effects. It would also allow for the designation of “open” routes, provide for an identification and evaluation, provide for consultation with SHPO and other parties about the design and implementation of identification efforts, providing remedies when eligible cultural resources would be affected. The amendments to the CDCA Programmatic Agreement would satisfy agency responsibilities under Section 106 of the NHPA.

For routes proposed “open”, there would be no significant changes in immediate threats to cultural resources. It is assumed that cultural resources would continue to be affected by use that has existed over the past century. There would be no measurable effects on some resources while others would experience a cumulative degrading of integrity over time. In this alternative, adverse effects to historic properties when identified would be resolved with procedures outlined in the proposed amendment to the CDCA Programmatic Agreement.

For Alternative 2, livestock grazing and wild horse and burro impacts to cultural resources would be the same as those identified under Alternative 1 (No Action) with one exception. The elimination of the Clark Mountain Herd Management Area would remove threats to cultural resources from wild horse and burro herds in approximately 98,000 acres of the planning area in and adjacent to the herd management area.

Desert Wildlife Management Areas: Alternative 2 would designate four ACECs within the two DWMAAs encompassing approximately 354,300 acres for the protection of desert tortoise and significant natural resources. All MUC Class “M” lands within the ACECs (48,642 acres) would be designated as MUC Class “L”. Cumulative new surface disturbances on federal and state administered lands would be limited to 1 percent of the federal/state proportion of the ACECs. The ACECs would result in increased protection and preservation of cultural resources within the ACECs boundaries. Activities that might affect cultural resources would be limited by capping the cumulative surface disturbance allowed. Activities that would promote recovery of the desert tortoise, such as fencing, bridge, or culvert construction would be reviewed in accordance with Section 106 of NHPA, as implemented in the BLM Statewide Protocol and the 1980 CDCA Programmatic Agreement for cultural resources.

The general management strategies proposed in this alternative would be administrative in nature and would not qualify as an undertaking subject to review under the National Historic Preservation Act (NHPA). No historic properties would be affected. Subsequent actions that would be proposed to implement agreements and other administrative management decisions qualify as an “undertaking”. Proposals would be reviewed in accordance with Section 106 of NHPA.

Impacts to Wild Horses and Burros

This alternative would continue to reduce the burro population and eliminate the Clark Mountain Herd Management Area. The Animal Management Levels in Shadow Valley would be zero for burros and associated forage allocation. Burros would be completely removed from the Shadow Valley ACEC for the conservation of the desert tortoise and from the eastern portion of Clark Mountains per the existing Herd Management Area Plan. This would result in the loss of approximately 75,350 acres of the Clark Mountain Herd Management Area and 44 AML from burro management in the CDCA. All burro removal and adoption impacts would be the same as the No Action Alternative.

Impacts to Cattle Grazing and Allotments

Alternative 2 would make grazing use unavailable or greatly decrease grazing in six allotments within the four ACECs proposed for conservation of the desert tortoise. Under this alternative, Jean Lake, Kessler Springs and the Piute Valley allotments would not be available for grazing use within the Ivanpah Valley and Piute-Fenner Valley ACECs. Substantial portions of the Clark Mountain, Valley View and Valley Wells allotments that overlap the ACECs would be unavailable for grazing use, and forage allocations in the remnants of the three allotments would be reduced.

The other 12 allotments in the Northern and Eastern Mojave planning area would be 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 loss of grazing on three of the six allotments with acreage in ACECs, and a 75 percent anticipated loss of use on the other three allotments (refer to Table 4.1).

The impacts of Alternative 2 would include the loss of grazing on three of the six allotments with acreage in ACECs. The North Ivanpah Valley ACEC overlaps the Clark Mountain Allotment about 28 percent of the area. The remaining 72 percent of the allotment would use 884 AUMs for cattle stocking. The Valley View Allotment grazing use is reduced by 34 percent and grazing use would continue with 560 AUMs in that area outside of the ACEC. About 44 percent of the Valley Wells Allotment is within the Shadow Valley ACEC and forage use would decrease a corresponding 44 percent from 4,272 AUMs to 2,355 AUMs. The ACEC lies west and within Shadow Valley, this area is large and most corral and water facilities would be within the area of the ACEC. This would only leave the most expensive options for fencing and water development to keep cattle out of the valley. Therefore, under this alternative-grazing management would be severely hampered and potentially no longer a viable operation (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 Springs	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%]	0

Impacts to Utilities

Impacts would be similar to Alternative 1, except for major linear utilities in the corridors. Non-emergency actions would be subject to additional limitations on new access and mitigation and analysis to limit surface disturbances, including seasonal limitations for surface disturbances under the programmatic Biological Opinion and any additional project-specific measures from NEPA analyses and the tiered project-specific supplemental biological opinion. Substantial effects based on the cumulative disturbance limitations for the foreseeable future would be unlikely. Seasonal limitations would generally result in higher business costs due to delays, or additional coordination of construction timeframes during the hibernation of the desert tortoise. Project-specific measures may include supplemental costs for such items as site-specific supplemental design features, surveys, oversight, or reroutes for avoidance of sensitive areas. See Appendix A for project reporting requirements to assure cumulative thresholds are not exceeded.

Impacts to Recreation Resources and Activities

Competitive Event Motor-Vehicle Access-Related Activities: Under this alternative 73.6 percent of the routes would be open in the desert tortoise subregions. Washes would be closed. Opportunities for motorized recreational activities would decrease to some extent because BLM would apply the CDCA Plan's route approval process to "existing" routes (1979 maps) in all Category I desert tortoise habitat, using Alternative 2 criteria (Chapter 2, Section 2.10.2). The Alternative 2 Routes of Travel network has a 14.6 percent increase in the amount of closed routes, a 6.1 percent increase in the amount of limited routes, and a 20.7 percent decrease in the amount of open routes as compared to Alternative 1. Opportunities for these activities would not be affected by limiting parking and camping to within 50 feet both ways from access route centerline because, with few exceptions, such activities do not include parking and camping in the ordinary sense of those terms. One exception is large vehicles such as recreational vehicles or groups of such vehicles, which would be impacted by the change. These vehicles could have difficulty finding suitable camping spots with a fifty-foot wide camping distance. The reason for changing the distance from 100 feet to 300 feet in the first place was to allow for recreational vehicle camping in a circle, not a line (CDCA Plan amendment, 1982). This is not a major impact in the Planning Area, given the low levels of group camping. If adequate demand develops for this service, one or more camping areas may need to be designated.

Signs would be posted in many areas soliciting cooperation. In some cases, fencing may be used to prevent unintentional impacts. In addition, interpretive signing and informational kiosks would promote visitor use consistent with management objectives.

Dualsport and other organized, permitted noncompetitive motorized activities would continue to be permitted on open and limited routes, except where the route is specifically precluded from such events. Programmatic mitigation measures and a standard compensation ratio (5 to 1 in Category I habitat/ACECs. would be used under this Alternative). As with the no action alternative, organized motorized competitive events would not be authorized in desert tortoise Category I or critical habitats.

Other Recreation Activities: Opportunities for non-motorized activities would diminish somewhat, because they would be disrupted, displaced (in time or geography), or rendered impractical or infeasible by the application of routes of travel designation and the resulting decrease in motor-vehicle access to specific locations or trailheads. For the same reason, some non-motorized recreational activities, such as viewing certain species of wildlife, would also benefit somewhat from Alternative 2 to the extent that they respond positively to isolation from humans or motor-vehicles. Overall, the route network continues to provide for access throughout the desert tortoise Category I subregions, and impacts are minor.

There are some segments of the population that are more greatly affected by the increased route closures and limitations. The first group is the elderly and handicapped. Generally, this group can still access most of the locations it seeks regularly, but cannot explore all areas as readily as others. A second group is technical four-wheel drive enthusiasts. This group would use routes not as a transportation system but for the challenge of the route itself. Some of those routes would no longer be available under this alternative, and potentially all alternatives except no action. This alternative also closes redundant routes, which can also provide different riding experiences for the four-wheeler. The last group is hunters, who are the most affected by the designations because of the closure of washes. Gamebird, deer and other hunters drive up washes to find locations at or near waters to find their game. Since washes would only be available by foot or horseback, hunters would find it less accessible to find choice spots to get game. These groups are moderately affected by Alternative 2.

Impacts to Minerals and Mining

Under Alternative 2, 48,642 acres of land that is being managed under MUC “Moderate” guidelines would be included in the 354,300 acre ACEC. This is approximately fourteen percent (14%) of the ACEC. There would be no differences in impacts from Alternative 1 (No Action) on the remaining 354,000 acres of proposed ACEC. Mining related activities proposed for ACEC areas, other than casual use, would require an approved plan of operations prior to conducting surface disturbing activities. Proposed ACEC management prescriptions in DWMA’s would restrict surface disturbing activities during the tortoise active season by limiting operations or requiring tortoise-proof fencing. These measures would be similar to existing mitigation strategies on Category I habitat, MUC Limited lands, and all mining over five acres. The impacts would affect exploration activities of five acres or less or sampling less than 1,000 tons in the current MUC M area by increasing processing time (43 CFR 3809.11). 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 new surface disturbance, except for those related to interstate and major highway improvements. Reclaimed lands would be credited as undisturbed lands. Cumulative disturbances in each of the four proposed ACECs have been estimated to be less than one percent (1%) since approval of the CDCA Plan in 1981. This limit on new surface disturbance would have no effect on mining operations if the cumulative surface disturbance remains below one percent. It is not anticipated that any proposed (new) mines would be precluded or reduced in scope by the one-percent cumulative disturbance limitation in the foreseeable future.

Within the proposed Piute-Fenner ACEC, there would be approximately 2,700 acres of land with a high potential for discovery and development of an open-pit heap leach gold mine 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 because the lakebed itself is not desert tortoise habitat.

The current programmatic biological opinion for small mining allows BLM to process mining actions less than ten acres without formal US Fish and Wildlife Service consultation. This alternative would allow BLM to process mining actions with an expedited tiered consultation with FWS for operations up to 100 acres in size and could expedite the approval process for some operations larger than ten acres if an EIS is unnecessary. The expedited biological opinion includes any additional conservation measures that shall be included in the project, and recommendations that may be incorporated into the project.

Impacts to Vehicle Access

Under this alternative the designation of routes would occur as with Alternative 1, except specific Chapter 2, Section 2.10.2. criteria have been applied to meet desert tortoise recovery goals and objectives (Appendix A). As a result, 73.6 percent of “existing” routes would be open in the desert tortoise subregions, a decrease of 20.7 percent from Alternative 1. All washes would be closed. An additional 14.6 percent of “existing” routes would be closed and 6.1 percent of “existing” routes would be limited within the desert tortoise subregions to protect biological values as compared with Alternative 1. Opportunities for casual use motorized touring and non-competitive OHV events would be somewhat affected by route designation. Impacts to vehicle access would include loss of access to specific locations for recreational activities, loss of use of closed or limited routes by technical four-wheel drive enthusiasts, hunters and those participating in mining exploratory activities

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 loss of grazing would not occur except on one infrequently used ephemeral allotment. However, new limitations on forage for spring cattle turnout 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 Herd Area. The parking and camping restriction would be 100 feet compared to 50 feet in Alternative 2 resulting in increased potential for disturbance of vegetation, but still substantially less potential than the current 300 feet of the No Action alternative.

Noxious Weeds: Impacts would be the same as Alternative 2.

Special Status Plants: Impacts would be the same as in Alternative 2.

Biological Soil Crusts: Impacts would be the same as Alternative 1 except the modification of the Clark Mountain HMA would further decrease the amount of disturbance to biological soil crusts within the desert tortoise ACECs. This would be somewhat offset by increased surface disturbances within the new boundaries of the modified Herd Management Area in another part of the Clark Mountain Herd Area. These would be located within desert tortoise habitat, but outside of proposed ACECs, under this alternative.

Riparian/Wetland: Impacts would be the same as Alternative 1.

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.) Various measures in the General Desert Tortoise Strategy (Appendix A) including fencing highways, together with route designations, decreased parking and camping distances off routes, and the raven management strategy would reduce desert tortoise and habitat losses.

Special Status Animals: Beneficial impacts would be similar to those described for Alternative 2 but over a smaller area by 29,110 acres, totaling approximately 325,190 acres. In addition, there would be fewer reductions in burro and cattle use. Various measures in the General Desert Tortoise Strategy (Appendix A) would reduce habitat disturbance and direct mortality of tortoises, including the one percent cumulative limit on surface disturbance and fencing highways. Closing or limiting 19.3 percent of routes through the routes of travel process, decreased parking and camping distances off routes from 300 to 100 feet, and the raven management strategy would reduce desert tortoise and habitat losses. Removal of burros from Shadow Valley HMA and cattle grazing from the ACECs during spring forage months when forage limits are not met would result in increased biomass available for tortoises as cover against weather and predators, and forage availability in years when competition for forage occurs. The raven management strategy could result in decreased predation on hatchling and juvenile tortoises by these predators and aid recruitment.

Impacts to Soil, Water and Air Resources

Soil: Under Alternative 3, impact to soils would be similar, but less beneficial than Alternative 2 because the area of the three ACECs is smaller and the limitation in activities is less. The designation of approximately 325,190 acres as ACECs would positively impact soil quality through implementation of prescriptions aimed at improving habitat conditions and reducing impacts from surface disturbing uses. This would include a three-fold decrease in the area susceptible to soil compaction and soil surface disturbance from stopping, parking and camping based on the proposed change from 300 feet to 100 feet. Additional benefits would accrue from the closure of 11.1 percent of routes in the desert tortoise subregions of the planning area, a 6.6 percent increase above the no action alternative. Areas outside desert tortoise subregions would experience smaller benefits in the reasonably foreseeable future (i.e., beginning in the next five to seven years) based on the current 2004 deadline for completion of the routes of travel designations in the rest of the planning area.

Cattle grazing on 20,145 acres in the Piute Valley Allotment would no longer be available and this action would improve soil quality by maintaining standing vegetation and resulting in increased litter on sites where material had been previously removed by grazing animals. Protection of soil from accelerated erosion can occur with the addition of vegetative cover and litter. As compared with Alternative 1, an additional 278,549 acres would be excluded from grazing when ephemeral forage production is less than 230 pounds per acre as per the grazing strategy from 3/15 to 11/1. This would result in a reduction of impacts to soils and potential relinquishment of four allotments in ACECs.

Soil disturbances would occur during development of range improvements with implementation of the grazing strategy. Under this alternative, impacts from development of range improvements would be similar in type and amount of impacts indicated in the No Action Alternative. The cessation of perennial grazing use in ACECs each spring when ephemeral forage is insufficient would provide maximum availability of ephemeral growth to foraging tortoises.

Improving vegetative conditions for natural communities such as springs and seeps, dunes, and playas would benefit soil quality by improving protective ground cover, water holding capacity, and soil retention. Vegetation is a key component of a healthy watershed and as a result of improved dissipation of energy associated with storm water runoff, erosion and soil loss would be minimized.

The permitted level for burros in the Clark Mountain herd management area would be reduced to zero within the ACECs. The Appropriate Management Level for this herd has never been met, and excess burros have resulted in impacts to soils in Shadow Valley for more than twenty years. The elimination of burros would reduce loss of vegetative cover and litter that protect soil from erosive processes, and to some degree, soil compaction which channels and concentrates storm water runoff.

This reduction in burro impacts would not also immediately occur on the eastern side of the Clark Mountains, where the modified Herd Management Area would be located. These impacts have been occurring and would continue for the reasonably foreseeable future. Continued burro reductions in this area to the target AML of 60 animals would eventually result in reduction of soil impacts to an acceptable level. Current census for the area is approximately twice that many animals.

Water: Impacts would be the same as Alternative 2: water quality and quantity would not be affected by the adoption of this alternative for desert tortoise and recovery, except as identified in 4.1.2, implementation of regional standards.

Air: Impacts would be the same as Alternative 2: air quality would not be appreciably affected by the adoption of this alternative for desert tortoise and recovery

Impacts to Wilderness

Impacts would be similar to Alternative 2 except some grazing may still occur in wilderness areas but minimum forage requirements would still result in substantial benefits to the biological character of wilderness.

Impacts to Cultural and Native American Values

Under Alternative 3, there would be no change to the Cultural Resources Element of the CDCA Plan. The CDCA Programmatic Agreement and Protocol would still govern implementation of the CDCA Plan for cultural resources and would provide processes for the resolution of effects on significant historic properties. This alternative would require that the CDCA Programmatic Agreement be amended to provide for the phased identification and evaluation of cultural resources.

There would be no substantial change from Alternative 2 in impacts to cultural resources, except that the acreage covered by additional protection would be 325,190 acres instead of 354,300.

The general management strategies proposed in this alternative would be administrative in nature and would not qualify as an undertaking subject to review under Section 106 of the National Historic Preservation Act (NHPA). No historic properties would be affected.

For vehicle management, analysis and effects would be similar to Alternative 2, because the route designation actions proposed in this alternative would not be different from Alternative 2 with regards to effects on cultural resources, with the following modifications. Approximately 80.7 percent of the routes would be designated open in the desert tortoise subregions, and 19.3 percent of the routes of travel would be designated closed or limited under Alternative 3. Therefore, under this alternative, approximately 6.6 percent of the routes would no longer be available for use by the public that are currently available, and another 7.0 percent would be additionally limited in some way, including associated parking stopping and camping along those routes. Stopping, parking, and camping activities would be authorized within 100' of centerline, or limited to the banks of open washes, rather than the 50 ft of Alternative 2. Secondly, major washes could be designated open or limited whereas in Alternative 2 all washes would be designated closed.

Alternative 3 would provide for the voluntary relinquishment of grazing leases and related authorizations. Voluntary relinquishment of grazing authorizations and grazing allotments within ACECs would remove the threats to cultural resources from grazing in these areas, as well as impacts from range improvements that would have occurred to support grazing.

For Alternative 3, livestock grazing and wild horse and burro impacts to cultural resources would be similar to those identified under Alternative 2. The loss of cattle grazing on 20,145 acres in the Piute Valley ephemeral allotment, and the potential for an additional 278,549 acres as no longer available in years when ephemeral forage production is less than 230 pounds per acre for the period from 3/15 to 11/1 in the ACECs would greatly reduce threats to cultural resources from cattle in the ACECs. The elimination of the Clark Mountain Herd Management Area from the Shadow Valley ACEC would likewise greatly reduce threats to cultural resources from the wild horse and burro herds in the Shadow Valley area. Cultural resources would continue to be threatened by wild horse and burros in the remaining Clark Mountain Herd Area. There would be no substantial change in the threat to these resources in the eastern Clark Mountain area from the No Action Alternative.

Impacts to Wild Horses and Burros

The designation of the Clark Mountain Herd Management Area on the eastern portion of the Clark Mountain Herd Area outside of desert tortoise critical habitat would affect fewer animals than the No Action Alternative, as it would result in a net increase in the current appropriate management level from 44 to 60 animals and a viable HMA would remain in the Clark Mountain area. The remaining herd would be managed outside of critical desert tortoise habitat, on the eastern side of the Clark Mountains, adjacent to the Nevada border, and the Herd Area boundaries would exclude critical habitat. Impacts to wild burros in the western portion of the Herd Area (current Clark Mountain Herd Management Area) would be the loss of the habitat and associated waters and range improvements (built for cattle) in the western portion of the Clark Mountain Herd Area that the wild burros use, and in the form of complete removal through live trapping methods. Impacts to the burros in the eastern portion of the Clark Mountain Herd Area include continued removals until the AML reaches 60 animals. Associated waters and range improvements would be identified in an updated HMA Plan to provide needed facilities and distribution mechanisms. All burro removal and adoption impacts would be the same as Alternative 1.

Impacts to Cattle Grazing and Allotments

Alternative 3 would affect five grazing allotments within three ACECs of the two DWMA's proposed for desert tortoise conservation and recovery. Under this alternative, the ephemeral classified Piute Valley Allotment would no longer be available for grazing use and would devote habitat within the allotment primarily to desert tortoise recovery. The lessee has not used the BLM portion of the allotment for many years. Under the BLM decision based on the Biological Opinion associated with critical habitat designation, the BLM portion is currently precluded from grazing use. Grazing found on the portions of Valley View, Jean Lake, Kessler Springs, and Valley Wells Allotments that overlap the ACECs, as prescribed by a grazing strategy, would have to meet minimum ephemeral forage allocations of 230 pounds by air-dry weight per acre prior to grazing. Development of a strategy to mitigate cattle impacts to tortoises and their habitats would impact year-to-year continuous grazing. In an estimated four years out of every ten, grazing in the ACECs would be substantially removed from March 15 to November 1, based on ephemeral forage production of 230 pounds of air-dry weight per acre and a written grazing strategy. The development of a written grazing strategy by the lessee, BLM, and FWS, would require the lessee to attend coordination meetings. Grazing use would be substantially removed from the prescribed area during dry years, usually at lower elevations in desert tortoise habitat. However, an absence of grazing over successive dry years during the spring would heavily impact the calving season, and directly reduce calving.

Under Alternative 3, lessees may voluntarily relinquish grazing use and related authorizations. Their written request would initiate a grazing decision from the manager to exclude grazing use in the area of the allotment, all forage allocations, and all range improvement projects on BLM lands. This Alternative would authorize grazing until the lessee desires to relinquish the lease. Then the habitat could be allocated solely for the recovery of the desert tortoise. Based on past events, grazing leases have been sold just prior to being relinquished. If that should occur, lessees would be reasonably compensated for financial investment in the allotments.

Management would make the area of the allotment unavailable for use and related authorizations after a lessee voluntarily relinquishes the lease. Existing range improvements would soon fall into disrepair and eventually be abandoned unless the BLM, or a cooperator assumes maintenance responsibilities. Some abandoned projects would become a safety hazard and would require complete or partial removal.

Additional range improvements would be needed to implement this alternative. Grazing management would be difficult and ineffective for the lessee without installation of proposed improvements.

As with Alternative 2, the 12 allotments not affected by this alternative would continue being managed as prescribed under the No Action Alternative. There may be indirect regional effects through an increased overall demand on forage through subleasing of allotment pastures outside of critical desert tortoise habitat, in years when forage base is below 230 lbs/acre within one or more ACECs

Impacts to Utilities

The impacts to utilities would be similar to Alternative 1 with the following exceptions. Non-emergency actions would be subject to additional limitations on new access and mitigation and analysis to limit surface disturbances, including seasonal limitations for surface disturbances under the programmatic Biological Opinion and any additional project-specific measures from NEPA analyses and an optional tiered project-specific supplemental biological opinion. Substantial effects based on the cumulative disturbance limitations for the foreseeable future would be unlikely. Seasonal limitations would generally result in higher business costs due to delays, or additional coordination of construction timeframes during the hibernation of the desert tortoise. Utilities within the corridors would be exempt from the 100 acre limitation—for site-specific surface disturbances identified in the Desert Tortoise Conservation Strategy to be covered by the programmatic, except that these projects would still be subject to a standard based on significance. Significant impacts would not be covered under the programmatic biological opinion because they would require a supplemental EIS. See Appendix A for project reporting requirements to assure cumulative thresholds are not exceeded.

Impacts to Recreation Resources and Activities

Motor-Vehicle Access-Related Activities: Similar to Alternative 2. Under this alternative, 80.7 percent of the routes would be open in the desert tortoise subregions, including some washes. This is approximately 7 percent more open routes than Alternative 2, and 13.6 percent fewer routes than Alternative 1.

Other Recreation Activities: Similar to Alternative 2, except that opportunities for non-motorized recreation activities related to camping and parking off of open routes would increase because parking and camping would be allowed within 100 feet both ways of open route centerlines, and would be allowed within the banks of open routes that are desert washes. This would reduce negative impacts to group campers and recreational vehicle campers that would be possible under Alternative 2.

Impacts to Minerals and Mining

Impacts would be similar to Alternative 2, except that 42,713 acres would be reclassified from MUC M to L instead of 48,642 acres in the 325,190 acre ACECs. Therefore, Alternative 3 would be similar to Alternative 1 in the Northern Ivanpah Valley area, where the area would be continue to be zoned MUC Moderate and outside of ACEC boundaries. Cumulative disturbances in the ACECs would be the same as Alternative 2 as would the impacts (1%). Consultation limits within the Piute-Fenner, Ivanpah and Shadow Valley ACECs would be 100 acres. 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 (i.e., the Northern Ivanpah Valley area), which would result in fewer restrictions and an average of 500 percent less compensation for activities. In addition, mining activities under 100 acres in desert tortoise habitat would not require further consultation with USFWS in Category III habitat.

Impacts to Vehicle Access

Impacts would be similar to Alternative 2, except additional criteria have been applied in addition to the criteria of Section 2.10.2 to meet desert tortoise recovery goals and objectives, that also provide for consideration of uses and recreational destinations consistent with the Section 2.10.2 criteria. As a result, to protect biological values within the desert tortoise subregions the following routes of travel designations would be made. Approximately 80.7 percent of “existing” routes would be open in the desert tortoise subregions; 5.1 percent of these would be washes. An additional 11.1 percent of “existing” routes would be closed, and 8.2 percent of “existing” routes would be limited with almost 1 percent of the limited routes washes. Opportunities for casual use motorized touring and non-competitive OHV events would be similar to Alternative 2, except the loss of access to specific locations would be 7.1 percent lower under Alternative 3. The availability of major washes for casual use lessens impacts on hunters and other users somewhat, but these users are still impacted by the loss of secondary washes, which are treated as non-routes in the inventory and are closed in the desert tortoise subregions.

4.2.4 Alternative 4 - Desert Tortoise

Impacts to Vegetation

General Vegetation: Beneficial impacts to maintain and enhance habitat and rehabilitate disturbances would be similar as but over 211,130 acres, 114,060 acres less than Alternative 3. The Shadow Valley unit would not be included, as an ACEC and both Shadow Valley and Northern Ivanpah Valley would be changed from Category I to Category III desert tortoise habitat. Recommendations would be made to FWS to modify critical habitat boundaries to coincide with ACECs and exclude Shadow Valley.

As in Alternative 1, burros would not be removed from Shadow Valley or from the entire Clark Mountain Herd Area. Impacts of burros on vegetation would remain. Impacts from cattle grazing would be the same as Alternative 1 except that grazing would be unavailable on one infrequently used ephemeral allotment.

As with Alternative 3, the parking and camping restriction would be 100 feet compared to 50 feet in Alternative 2 resulting in increased potential disturbance of vegetation, but still substantially less potential than the current 300 feet of the No Action alternative.

Special Status Plants: Impacts would be the same as Alternative 2.

Noxious Weeds: Impacts would be the same as Alternative 2.

Biological Soil Crusts: Impacts would be the same as Alternative 1.

Riparian/Wetland: Impacts would be the same as Alternative 1.

Impacts to Wildlife

General Wildlife: impacts would be similar to Alternative 3 (which see), but over a smaller area and with the continued effects from 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 with continued effects of burro trailing and grazing in Shadow Valley. (See the discussion on General Vegetation above.) Approximately 18.5 percent of routes would be closed or limited in the ACECs through the routes of travel designation process. This would reduce the potential area of disturbance and limit the spread of noxious weeds in these areas, particularly in the 10.3 percent of closed routes. Reducing the parking and camping distance from 300 to 100 feet would limit habitat disturbance and reduce the risk of running over tortoises.

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

Impacts to Soil, Water and Air Resources

Soil: Impacts would be similar to, but less beneficial than Alternative 2. Alternative 4 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 DWMA's. This alternative would be the same as Alternative 3 in the fourfold reduction of area susceptible to soil compaction and potentially damaged from stopping, parking and camping. There would be no change from Alternative 1 in the areas north of Interstate-15, including 114,060 acres of current Category I and critical habitat in Shadow Valley and 29,110 acres of Category I habitat in Northern Ivanpah Valley. These areas would be outside of ACECs and would continue the current condition and trend. Additional benefits would accrue from the closure of 10.3 percent of routes in the desert tortoise subregions, a 5.8 percent increase above Alternative 1. Areas outside of Category I habitat would experience smaller benefits in the reasonably foreseeable future (i.e., beginning in the next five-to-seven years) based on the current 2004 deadline for completion of the routes of travel designations in the rest of the planning area.

Water: Impacts would be the same as those in Alternative 2: water quality and quantity would not be affected except as identified in 4.1.2, implementation of regional standards for public land health.

Air: Impacts would be the same as those in Alternative 2: air quality would not be appreciably affected by adoption of this desert tortoise conservation and recovery strategy.

Impacts to Wilderness

Impacts would be the same as Alternative 1. In addition, actions specific to recovery of the desert tortoise via relinquishment of cattle grazing potentially that includes portions of the Dead Mountains Wilderness could result in beneficial impacts to native vegetation, biological crusts, soils, and wildlife forage values potentially along the western front of the Dead Mountains Wilderness.

Impacts to Cultural and Native American Values

Impacts would be similar to Alternative 2 except that increased protection and preservation of cultural resources would occur on approximately 143,170 acres less, or 211,130 acres within the ACEC boundaries. The other following change would affect cultural resources: 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. In addition, positive impacts from changing MUC M to L would be substantially less than Alternative 2, with sites on 3,960 acres rather than 48,642 acres benefiting by a change in MUC.

Impacts to Wild Horses and Burros

Impacts would be the same as Alternative 1. The existing East Mojave Herd Management Area Plan would be used to manage an Appropriate Management Level of 44 burros in the Clark Mountain HMA within Shadow Valley, and outside of designated ACECs. Burro removals would continue to meet the AML set in the CDCA Plan, or as updated, based on forage availability. The management would integrate regional standards in an updated Clark Mountain HMA Plan that would be developed to meet goals and objectives of the HMA.

Impacts to Cattle Grazing and Allotments

Alternative 4 is the same as the No Action Alternative for cattle grazing except potential use of ephemeral forage would not be available and would 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 ten. Remaining cattle would have access to better forage conditions in those years. The impacts to the lessee would not be noticeable, because grazing use has not occurred on BLM lands since issuance of the decision based on the Biological Opinion associated with critical habitat designation in 1994. The lessee's cattle operation would have stabilized by finding forage for the cattle in the ensuing years.

Impacts to Utilities

Impacts would be similar to Alternative 3. Non-emergency actions would be subject to additional limitations on new access and mitigation and analysis to limit surface disturbances, including seasonal limitations for surface disturbances under the programmatic Biological Opinion, which would incorporate and utilize existing programmatic agreements, to the extent they are still applicable (e.g., small mining, small disturbance, dualsport, electrical utilities, pipeline maintenance). Substantial effects based on the cumulative disturbance limitations for the foreseeable future would be unlikely. Seasonal limitations would generally result in higher business costs due to delays, or additional coordination of construction timeframes during the hibernation of the desert tortoise. See Appendix A for project reporting requirements to assure cumulative thresholds are not exceeded. Supplemental or tiered, expedited biological opinions would not be standard under this alternative.

Impacts to Recreation Resources and Activities

Motor-Vehicle Access-Related Activities: Similar to Alternative 3. In the entire desert tortoise subregions, including all of the area north of Interstate 15 that would be excluded from the ACECs, routes of travel are being designated in this planning effort. Approximately 81.5 percent of the routes would be open, 8.2 percent would be limited, and 10.3 percent would be closed under Alternative 4. Therefore, recreation activities, including rock hounding, vehicle touring, visitation of historic mining and traditional sites would be affected throughout the desert tortoise subregions. The area north of Interstate 15 is excluded from the desert tortoise ACECS, and other ACEC stipulations would no longer apply under Alternative 4. This exclusion would not appreciably affect the casual users, except that parking, stopping and camping would be the same as Alternative 1 (300 feet) instead of 100 feet in this area. However, exclusion of the area from the ACECs would result in substantial reduction of any compensation ratios on permitted activities north of I-15 (e.g., dualsports), and could potentially make the area available for organized competitive vehicle events (see 4.8).

Other Recreation Activities: Same as for Alternative 3.

Impacts to Minerals and Mining

Impacts would be similar to Alternative 2, except that increased impacts to mining would occur on 211,130 acres instead of 354,300 acres and exploration and development for gold would be more likely in the area of the southwestern portion of the Shadow Valley unit that would remain outside the ACEC and remain multiple use class M. This area would also become Category III, rather than Category I habitat, and is the only alternative under which this would occur, resulting with slightly less stringent mitigation measures and substantially (approximately 500 percent) lower compensation requirements.

Impacts to Vehicle Access

Impacts would be similar to Alternative 3. Approximately 81.5 percent of “existing” routes would be open in the desert tortoise subregions; 5.1 percent of these would be washes. An additional 10.3 percent of “existing” routes would be closed, and 8.2 percent of “existing” routes would be limited with almost 1 percent of the limited routes washes. Opportunities for casual use motorized touring and non-competitive OHV events would be similar to Alternative 3, except the loss of access to specific locations would be almost 1 percent lower under Alternative 4.

4.2.5 Proposed Plan Amendment, Alternative 5 - Desert Tortoise

Impacts to Vegetation

General Vegetation: Impacts to vegetation would be similar to Alternative 2 except that about 312,400 acres would be affected, or 41,900 acres less than Alternative 2, 12,790 acres less than Alternative 3, and 101,270 more acres than Alternative 4. The grazing management strategy is the same as Alternative 3, and beneficial impacts from allocating ephemeral forage production to tortoise recovery and restriction of grazing during the spring growing season would be positive to general vegetation, but not as beneficial as removal of grazing under Alternative 2. Likewise, the stopping, parking, and camping reduction is proposed as 100 feet, which is the same as Alternatives 3 and 4, and not as beneficial a change as the 50 feet proposed in Alternative 2.

Special Status Plants: Impacts would be the same as Alternative 2: No known threatened, endangered or other special status plants have been recorded within critical desert tortoise habitat.

Noxious Weeds: The impacts on noxious weeds would be similar to Alternative 1. There may be some additional benefits from efforts to enhance habitat and rehabilitate surface disturbances, including closed routes.

Biological Soil Crusts: Impacts to biological soil crusts would be similar to Alternative 3 but over a slightly smaller area. Impacts to biological soil crusts would be the same as Alternative 1 except the elimination of the Clark Mountain Herd Management Area would decrease the amount of disturbance to biological soil crusts. (See also the discussion on General Vegetation above relative to grazing.)

Riparian/Wetlands: Impacts and mitigation would be the same as Alternative 1.

Impacts to Wildlife

General Wildlife: Beneficial impacts would be similar to those described for Alternative 2 but over a smaller (by 41,900 acres) area and with the same reductions in burro use, and fewer reductions in cattle use (see the discussion on General Vegetation above.) Various measures in the General Desert Tortoise Strategy (Appendix A) including fencing highways, together with route designations, decreased parking and camping distances off routes, and the raven management strategy would reduce desert tortoise and habitat losses.

Special Status Animals: Impacts to desert tortoise would be similar to Alternative 3, but over a slightly smaller area. The areas excluded are 12,700 acres in western Shadow Valley south of Turquoise Mountain, and a small 485-acre area near Nipton in Ivanpah Valley. See the discussion on General Vegetation above. Removal of burros from the Shadow Valley HMA would result in increased plant biomass used by tortoises as cover against weather and predators and competition for forage, in years and seasons when it occurs would be eliminated with this species (see Alternative 2 discussion). Under the proposed plan, approximately 19.3 percent of routes would be closed or limited in the ACECs through the routes of travel designation process. This would reduce the potential area of disturbance and limit the spread of noxious weeds in these areas, particularly in the 11.1 percent of closed routes. Reducing the parking and camping distance from 300 to 100 feet would limit habitat disturbance and reduce the risk of running over tortoises. Other beneficial impacts, including implementation of the raven management strategy and fencing along interstates and major highways would be the same as Alternative 3.

Impacts to Soil, Water and Air Resources

Soil: The impacts of this alternative would be similar to Alternative 3. The designation of approximately 312,400 acres as ACECs would positively impact soil quality through implementation of prescriptions aimed at improving habitat conditions and reducing impacts from surface disturbing uses. This would include a three-fold decrease in the area susceptible to soil compaction and soil surface disturbance from stopping, parking and camping based on the proposed change from 300 feet to 100 feet. Additional benefits would accrue from the closure of 11.1 percent of routes in the desert tortoise subregions of the planning area, a 6.6 percent increase above the no action alternative. Areas outside desert tortoise subregions would experience smaller benefits in the reasonably foreseeable future (i.e., beginning in the next five to seven years) based on the current 2004 deadline for completion of the routes of travel designations in the rest of the planning area.

Cattle grazing on 20,145 acres in the Piute Valley Allotment would no longer be available and this action would improve soil quality by maintaining standing vegetation and resulting in increased litter on sites where material had been previously removed by grazing animals. Protection of soil from accelerated erosion can occur with the addition of vegetative cover and litter. As compared with Alternative 1, an additional 278,549 acres would be excluded from cattle grazing when ephemeral forage production is less than 230 pounds per acre as per the grazing strategy from 3/15 to 6/15. This would result in a reduction of impacts to soils and potential relinquishment of four allotments in ACECs.

The permitted level for burros in the 75,350-acre Clark Mountain herd management area would be reduced to zero and the HMA would be eliminated. The Appropriate Management Level for this herd has never been met, and excess burros have resulted in impacts to soils in Shadow Valley for more than twenty years. The elimination of burros would reduce loss of vegetative cover and litter that protect soil from erosive processes, and to some degree, soil compaction which channels and concentrates storm water runoff.

Soil disturbances would occur during development of range improvements with implementation of the grazing strategy. Under this alternative, impacts from development of range improvements would be similar in type and amount of impacts indicated in the No Action Alternative. The cessation of perennial grazing use in ACECs each spring when ephemeral forage is insufficient would provide maximum availability of ephemeral growth to foraging tortoises.

Improving vegetative conditions for natural communities such as springs and seeps, dunes, and playas would benefit soil quality by improving protective ground cover, water holding capacity, and soil retention. Vegetation is a key component of a healthy watershed and as a result of improved dissipation of energy associated with storm water runoff, erosion and soil loss would be minimized.

Water: Impacts would be the same as Alternative 2: water quality and quantity would not be affected by the adoption of this alternative for desert tortoise and recovery, except as identified in 4.1.2, implementation of regional standards.

Air: Impacts would be the same as Alternative 2: air quality would not be appreciably affected by the adoption of this alternative for desert tortoise and recovery.

Impacts to Wilderness

Impacts would be similar to Alternative 3. Actions specific to recovery of the desert tortoise via relinquishment of cattle grazing and burro management in Shadow Valley ACEC would result in localized beneficial impacts to native vegetation, biological crusts, soils, and wildlife forage values within wilderness, primarily north of the Boulder Corridor, but also along the western front of the Dead Mountains. By the exclusion of 12,700 acres of western Shadow Valley from the proposed ACEC, the proposed plan would not provide a small area of Hollow Hills Wilderness beneficial impacts from modified grazing practices that occur within ACECs, which are provided under Alternative 3.

Impacts to Cultural and Native American Values

Impacts would be essentially the same as Alternative 3. There would be no substantial change in the acreage covered by additional protection, which would be 312,000 acres instead of 325,190. Vehicle management, analysis and effects would be the same as Alternative 3. Approximately 80.7 percent of the routes would be designated open in the desert tortoise subregions, and 19.3 percent of the routes of travel would be designated closed or limited. Therefore, under this alternative, approximately 6.6 percent of the routes would no longer be available for use by the public that are currently available, and another 7.0 percent would be additionally limited in some way, including associated parking stopping and camping along those routes. Stopping, parking, and camping activities would be authorized within 100' of centerline, and major washes could be designated open or limited.

The proposed plan would adopt Alternative 3 provisions as modified, and would provide for the voluntary relinquishment of grazing leases and related authorizations. The loss of cattle grazing on 20,145 acres in the Piute Valley ephemeral allotment, and the potential for an additional 278,549 acres as no longer available in years when ephemeral forage production is less than 230 pounds per acre for the period from 3/15 to 6/15 in the ACECs would somewhat reduce threats to cultural resources from cattle in the ACECs. The elimination of the Clark Mountain Herd Management Area from the Shadow Valley ACEC would likewise greatly reduce threats to cultural resources from the wild horse and burro herds in the Shadow Valley and Northern Ivanpah areas.

Impacts to Wild Horses and Burros

Impacts to wild horses and burros would be the same as Alternative 2: This alternative would continue to reduce the burro population and eliminate the Clark Mountain Herd Management Area. The Animal Management Levels in Shadow Valley and associated forage allocation would be zero for burros. Burros would be completely removed from the Shadow Valley ACEC for the conservation of the desert tortoise and from the eastern portion of Clark Mountains per the existing Herd Management Area Plan. This would result in the loss of approximately 75,350 acres of the Clark Mountain Herd Management Area and 44 AML from burro management in the CDCA. All burro removal and adoption impacts would be the same as the No Action Alternative.

Impacts to Cattle Grazing and Allotments

Impacts would be similar to Alternative 3, except for a reduction in the seasonal exclusion period in the ACECs: Alternative 3 would affect five grazing allotments within three ACECs of the two DWMAAs proposed for desert tortoise conservation and recovery. Under this alternative, the ephemeral classified Piute Valley Allotment would no longer be available for grazing use and would devote habitat within the allotment primarily to desert tortoise recovery. The lessee has not used the BLM portion of the allotment for many years. Under the BLM decision based on the Biological Opinion associated with critical habitat designation, the BLM portion is currently precluded from grazing use.

Grazing found on the portions of Valley View, Jean Lake, Kessler Springs, and Valley Wells Allotments that overlap the ACECs, as prescribed by a grazing strategy, would have to meet minimum ephemeral forage allocations of 230 pounds by air-dry weight per acre prior to grazing. Development of a strategy to mitigate cattle impacts to tortoises and their habitats would impact year-to-year continuous grazing. In an estimated four years out of every ten, grazing in the ACECs would be substantially removed from March 15 to June 15, based on ephemeral forage production of 230 pounds of air-dry weight per acre and a written grazing strategy. The development of a written grazing strategy by the lessee, BLM, and FWS, would require the lessee to attend coordination meetings. Grazing use would be substantially removed from the prescribed area during dry years, usually at lower elevations in desert tortoise habitat. However, an absence of grazing over successive dry years during the spring would heavily impact the calving season, and directly reduce calving.

Under Alternative 3, lessees may voluntarily relinquish grazing use and related authorizations. Their written request would initiate a grazing decision from the manager to exclude grazing use in the area of the allotment, all forage allocations, and all range improvement projects on BLM lands. This Alternative would authorize grazing until the lessee desires to relinquish the lease. Then the habitat could be allocated solely for the recovery of the desert tortoise. Based on past events, grazing leases have been sold just prior to being relinquished. If that should occur, lessees would be reasonably compensated for financial investment in the allotments.

Management would make the area of the allotment unavailable for use and related authorizations after a lessee voluntarily relinquishes the lease. Existing range improvements would soon fall into disrepair and eventually be abandoned unless the BLM, or a cooperator assumes maintenance responsibilities. Some abandoned projects would become a safety hazard and would require complete or partial removal.

Additional range improvements would be needed to implement this alternative. Grazing management would be difficult and ineffective for the lessee without installation of proposed improvements.

As with Alternatives 2 and 3, the 12 allotments not affected by this alternative would continue being managed as prescribed under the No Action Alternative. There may be indirect regional affects through an increased overall demand on forage through subleasing of allotment pastures outside of critical desert tortoise habitat, in years when forage base is below 230 lbs/acre within one or more ACECs.

Impacts to Utilities

Impacts would be the same as Alternative 3. Non-emergency actions would be subject to additional limitations on new access and mitigation and analysis to limit surface disturbances, including seasonal limitations for surface disturbances under the programmatic Biological Opinion, which would incorporate and utilize existing programmatic agreements, to the extent they are still applicable (e.g., small mining, small disturbance, dualsport, electrical utilities, pipeline maintenance). Substantial effects based on the cumulative disturbance limitations for the foreseeable future would be unlikely. Seasonal limitations would generally result in higher business costs due to delays, or additional coordination of construction timeframes during the hibernation of the desert tortoise. See Appendix A for project reporting requirements to assure cumulative thresholds are not exceeded, and timeframes for any supplemental analyses. Supplemental or tiered, expedited biological opinions would not be standard under this alternative.

Impacts to Recreation Resources and Activities

Impacts would be the same as for Alternative 3.

Motor-Vehicle Access-Related Activities: Under this alternative, 80.7 percent of the routes would be open in the desert tortoise subregions, including some washes. This is approximately 7 percent more open routes than Alternative 2, and 13.6 percent fewer routes than Alternative 1. Opportunities for motorized recreational activities would decrease to some extent because BLM would apply the CDCA Plan's route approval process to "existing" routes (1979 maps) in all Category I desert tortoise habitat, using Alternative 2 criteria (Chapter 2, Section 2.10.2). The proposed plan Routes of Travel network has a 6.6 percent increase in the amount of closed routes, a 7.0 percent increase in the amount of limited routes, and a 13.6 percent decrease in the amount of open routes as compared to Alternative 1.

Opportunities for these activities would not be affected by limiting parking and camping to within 100 feet both ways from access route centerline because, with few exceptions, such activities do not include parking and camping in the ordinary sense of those terms. Signs would be posted in some areas soliciting cooperation. In some cases, fencing may be used to prevent unintentional impacts. In addition, interpretive signing and informational kiosks would promote visitor use consistent with management objectives.

Dualsport and other organized, permitted noncompetitive motorized activities would continue to be permitted on open and limited routes, except where the route is specifically precluded from such events. Programmatic mitigation measures and a standard compensation ratio (5 to 1 in Category I habitat/ACECs. would be used under this Alternative). As with the no action alternative, organized motorized competitive events would not be authorized in desert tortoise Category I or critical habitats.

Other Recreation Activities: Impacts would be the same as Alternative 3, and similar to Alternative 2. Overall, opportunities for non-motorized activities would diminish somewhat but be less impacting than Alternative 2. Non-motorized activities would be disrupted, displaced (in time or geography), or rendered impractical or infeasible by the application of routes of travel designation and the resulting decrease in motor-vehicle access to specific locations or trailheads. For the same reason, some non-motorized recreational activities, such as viewing certain species of wildlife, would also benefit somewhat from the proposed plan to the extent that they respond positively to isolation from humans or motor-vehicles, but not to the extent these benefits would occur in Alternative 2. Overall, the route network continues to provide for access throughout the desert tortoise Category I subregions, and impacts are minor.

Opportunities for non-motorized recreation activities related to camping and parking off of open routes would occur relative to the existing situation but not be as great as for Alternative 2 because parking and camping would be allowed within 100 feet both ways of open route centerlines, and would be allowed within the banks of open routes that are desert washes. This would reduce negative impacts to group campers and recreational vehicle campers--impacts that would be possible under Alternative 2.

Opportunities for specific recreational groups are more affected by route closures when they occur (see Alternative 3). These groups are moderately affected by the proposed plan.

Impacts to Minerals and Mining

Impacts would be 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 would be similar to Alternative 3, except that 30,010 acres would be reclassified from MUC M to L instead of 42,710 acres in the 312,000 acre ACECs. The Proposed Plan would be similar to Alternative 1 in the Northern Ivanpah Valley area and the western portion of Shadow Valley, where the area would be continue to be zoned MUC Moderate and outside of ACEC boundaries. Cumulative disturbances in the ACECs would be the same as Alternative 2 as would the impacts (1%). Consultation limits within the Piute-Fenner, Ivanpah and Shadow Valley ACECs would be 100 acres. As with Alternative 2 this is expected to expedite the approval process for operations up to that size provided an EIS is not determined to be necessary.

This alternative would also convert the public lands in 42,295 acres of BLM Category I Habitat to Category III Habitat (i.e., the Northern Ivanpah Valley area, western Shadow Valley, and a small area in Ivanpah Valley), which would result in fewer restrictions and an average of 500 percent less compensation for activities. In addition, mining activities under 100 acres in desert tortoise habitat would not require further consultation with USFWS in Category III habitat.

Impacts to Vehicle Access

Impacts are the same as Alternative 3. Additional criteria have been applied with the criteria of Section 2.10.2 to meet desert tortoise recovery goals and objectives, which also provide for consideration of uses and recreational destinations consistent with the Section 2.10.2 criteria. As a result, to protect biological values within the desert tortoise subregions the following routes of travel designations would be made. Approximately 80.7 percent of "existing" routes would be open in the desert tortoise subregions; 5.1 percent of these would be major washes. An additional 11.1 percent of "existing" routes would be closed, and 8.2 percent of "existing" routes would be limited with almost 1 percent of the limited routes washes. Opportunities for casual use motorized touring and non-competitive OHV events would be similar to Alternative 2, except the loss of access to specific locations would be 7.1 percent lower under the Proposed Plan. The availability of major washes for casual use lessens impacts on hunters and other users somewhat, but these users are still impacted by the loss of secondary washes, which are treated as non-routes in the inventory and are closed in the desert tortoise subregions, based on the inventory and route criteria.

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) in order to meet Chapter 1 purpose and need for this species. These recommendations would be adopted for all proposed Amargosa vole ACEC areas, except where noted otherwise. (Refer to Chapter 8, Figures 9a - 9e for maps of the areas).

4.3.1 Alternative 1 (No Action) - Amargosa Vole

Impacts to Vegetation

General Vegetation: Riparian and wetland plant communities would be enhanced and protected by strategies and measures prescribed in existing management plans for Amargosa Canyon Natural Area and Grimshaw Lake Natural Area ACECs. Specifically, closure of routes and removal of exotic tamarisk would protect and enhance the wetland and riparian areas (see also the discussion for Riparian/Wetland below).

Some indirect impacts may occur to habitat from development on adjacent private lands, including proliferation of routes. These are anticipated to be minor.

Special Status Plants: Tecopa birdsbeak, a BLM California sensitive plant, occurs in the Grimshaw Lake Natural Area ACEC. Within the ACEC it receives protection through management prescriptions in the existing management plan. However, other important populations on BLM lands in the vicinity are not included in the ACEC and would be subject to habitat disturbing activities. No other special status plants are known from the existing ACECs.

Biological Soil Crusts: Biological soil crusts would continue to be protected from surface disturbances within the two ACECS due to strategies and measures in existing management plans for the ACECs. Restricting vehicle access limits disturbance of biological soil crusts.

Riparian/Wetlands: Riparian and wetland plant communities including cottonwood/ willow, emergent wetland, alkaline marsh, and mesquite *bosque* on affected public lands would continue to be managed according to management plans for the two ACECS.

Riparian restoration on public lands in China Ranch Wash, Amargosa Canyon ACEC, and Grimshaw Lake ACEC would continue, but would not be expanded northward along the Amargosa River. The restoration efforts are focused on the removal of tamarisk and the reestablishment of native willows and cottonwoods. Tamarisk replaces native trees and shrubs and eliminates ground cover by exuding toxic salts onto the soil surface (Lovich and DeGouvenain 1998). It also can reduce surface flow of water and lower the water table. Tamarisk displacing native vegetation on private lands within the Shoshone stretch of the Amargosa River would not be removed, except if initiated by private landowners. Tamarisk in this area would continue to serve as a seed source for further invasions downstream in the two existing ACECs (Lovich and DeGouvenain 1998). This reseeding would slow efforts to control tamarisk in the ACECs.

Noxious Weeds: Refer to the discussion above on removal of tamarisk in Riparian/Wetlands.

Impacts to Wildlife

General Wildlife: Neotropical migrating birds and wetland and riparian obligate bird species use the Amargosa River and wetlands at Grimshaw Marsh for breeding, wintering, and migration. Habitats on public lands would continue to improve because of tamarisk control and replanting native trees (e.g., willows and cottonwoods) (Egan, undated). Tamarisk removal on adjacent private lands would be unlikely, and wildlife habitat values would continue to decline as tamarisk infestations spread. Tamarisk has little forage value and provides little nesting or cover value (Lovich and DeGouvenain 1998).

Special Status Animals: Federal actions that may affect the Amargosa vole or its habitat, as well as other federally listed species, would continue to receive review by US Fish and Wildlife Service 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 of the CDCA Plan and the Endangered Species Act, the two existing ACECs provide strategic guidance and prescriptions for BLM management of Amargosa vole habitat in Amargosa Canyon and in Grimshaw Marsh. Tamarisk removal aid in maintaining water levels and flows in Grimshaw Marsh and the Amargosa River in Amargosa Canyon (Lovich and DeGouvenain 1998, Sala *et al.* 1996, Egan undated). Two parcels and one state lands section in Amargosa Canyon contain vole habitat. They were identified for acquisition in the Amargosa Natural Area ACEC. These lands are scheduled to be acquired, based on funding and owner agreements.

However, recovery efforts for Amargosa vole are restricted to the two ACECs.

Other public lands located north of the Grimshaw Lake ACEC and north to the town of Shoshone support a small strip of riparian habitat suitable for the Amargosa vole. They would not receive strategic guidance and management prescriptions through ACEC designation. Other private lands upriver that support extensive riparian and wetland habitat used by Amargosa vole would not be identified for possible acquisition from willing landowners and for management of the vole.

Indirect impacts from development on adjacent private lands could include killing or injuring voles or losing or degradation their habitats downstream. In addition, impacts to vole habitat associated with activities on nearby public lands would include casual recreational use, proliferation of routes, and illegal dumping.

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

Habitat for the California BLM sensitive Shoshone Cave whip scorpion, located north of Shoshone, would continue under prescriptions in the existing Shoshone Cave Whip Scorpion Habitat Management Plan. The cave would be managed apart from the downstream Amargosa Canyon and Grimshaw Lake ACECs, and there would be no consideration for this species as part of an Amargosa River watershed strategy.

Habitats for two California BLM sensitive fish – the Amargosa pupfish and Nevada speckled dace – would be managed under MUC Limited Use guidelines and BLM's Special Status Fishes Strategy. They do not occur in either of the existing ACECs, and habitat in nearby reaches of the Amargosa River would not receive strategic guidance or special management through ACEC designation.

Impacts to Soil, Water and Air Resources

Soil: The current rates of soil erosion from wind and water would continue. Some indirect impacts may occur to soils from development on adjacent private lands, including proliferation of routes.

Water: Impacts from the No Action Alternative represent non-point-source impacts, which would be controlled by appropriate management practices. Portions of the MUC and ACEC guidance for the CDCA Plan and specific management actions in the Amargosa and/or Grimshaw Natural Area ACEC represent a sound approach 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 ground waters, applying for public water resources and providing hydrologist review of projects. This process reduces sedimentation and increases infiltration rates. This is desirable, and would represent 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 would provide some beneficial impacts to water quality.

Air: Alternative 1 would not affect air quality 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 approximately twenty miles of the Amargosa River that will subsequently be evaluated for suitability in the National Wild and Scenic Rivers System, biological, geologic, physiographic, recreational, scenic and wilderness values would receive additional protection and management. This would preserve the river's free-flowing character and unique features. Remarkable values of the river are described in more detail in Appendix O. Existing strategies identified for the vole and its habitat would benefit these values. Plans include managing exotic invasive species and implementing standards, including maintaining proper functioning conditions in riparian and wetland habitats.

Impacts to Cultural and Native American Values

Proposed actions for this alternative would be administrative. There would be no specific actions that would affect cultural resources. Actions specific to the management of special status animals and habitat that might affect cultural resources include riparian restoration, construction, improvement, and maintenance of natural and artificial water sources, and construction of animal exclosures. Under the No Action Alternative, proposed actions would continue to be reviewed in accordance with Section 106 of NHPA, as implemented in the BLM Statewide Protocol and the 1980 CDCA Programmatic Agreement. There would be no substantial change in the level of threat or impacts to cultural resources.

Impacts to Wild Horses and Burros

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

Impacts to Cattle Grazing and Allotments

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

Impacts to Recreation Resources and Activities

If Alternative 1 (No Action) is selected, special management actions would be applied to achieve the recovery criteria defined in the U.S. Fish and Wildlife Service Recovery Plan for the Amargosa vole, provided as terms and conditions of the biological opinion. 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, the special actions would result in minor positive impacts for low-impact recreation activities. Routes of travel designation would occur throughout the planning area by mid-2004 under all alternatives, and areas with sensitive resources receive special consideration, consistent with 43 CFR 8342.1 criteria.

Motor-Vehicle Access-Related Activities: Under the existing ACEC plans, public use of motor vehicles is to remain outside the Grimshaw Lake and Amargosa Canyon ACECs. As a result, opportunities for use of motorized vehicles within the ACECs do not currently exist, and have not existed since 1974. A portion of the southern end of the Amargosa ACEC is also within the Kingston Wilderness, and would not be available for consideration of motorized access in the reasonably foreseeable future. Impacts to opportunities for motor-vehicle access have been previously analyzed in the CDCA Plan and the ACEC Plans. It is analyzed in this document in the context of cumulative impacts (see 4.12).

Other Recreation Activities: In the Grimshaw Lake and Amargosa Canyon ACECs, opportunities for non-motorized recreation would not change. Actions in the ACEC Plans for hiking trail building and maintenance would continue. The impacts of these actions are generally beneficial and have been previously analyzed in the ACEC Plans (which see).

Impacts to Minerals and Mining

Public Land Order 5537 currently withdraws approximately 1,130 acres of public lands having potential for geothermal resources for the Natural Area. A greater amount is withdrawn under the Kingston Range Wilderness Area. The amount of critical vole habitat on public lands within the geothermal-potential zone is about 2,280 acres, and this would not be restricted or withdrawn from geothermal leasing and other mineral entry under Alternative 1. Geothermal leasing is a discretionary action and BLM would be unlikely to approve a lease in critical habitat for a listed species.

The impacts to mineral development from current and probable future actions would be deemed to be minimal because, with the exception of geothermal resources, the potential for mineral occurrence is low in this part of the plan area. 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 would be anticipated to be small, however, because the geothermal water temperature limits use to such things as heating bathhouses and buildings. The cost of mitigation for vole habitat, assuming a non-jeopardy opinion could be obtained from FWS, would make exploration and development of geothermal resources almost cost-prohibitive.

Impacts to Vehicle Access

Routes of travel designation would occur throughout the planning area by mid-2004 under all alternatives, and areas with sensitive resources receive special consideration, consistent with 43 CFR 8342.1 criteria. Opportunities for use of motorized vehicles within the ACECs would not be available or change from the existing situation. A portion of the southern end of the Amargosa ACEC is also within the Kingston Wilderness, and would not be available for consideration of motorized access. Impacts to opportunities for motor-vehicle access have been previously analyzed in the CDCA Plan and the ACEC Plans, and the access in this area has not changed in the last twenty-five years, since prior to adoption of the CDCA Plan. It is analyzed in this document in the context of cumulative impacts (see 4.12).

Impacts to Land Uses

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

4.3.2 Alternative 2 - Amargosa Vole

Impacts to Vegetation

General Vegetation: Riparian and wetland plant communities would be enhanced and protected on 10,450 additional acres of public lands in Alternative 2 for the expanded ACEC and up to 1,750 acres of private and State lands could subsequently receive increased enhancement in the reasonably foreseeable future, if acquired. The new ACEC would provide an increased capability to manage wetland and riparian areas on a watershed basis. Supplemental route designation scheduled to occur by 2004, and associated supplemental route closures, and removal of exotic tamarisk would protect and enhance a greater extent of wetland and riparian areas (Egan undated) than the No Action Alternative. The discussion on riparian/wetland impacts below provides additional information. See also the General Vegetation discussion under 4.4.2 for Carson Slough. Some indirect negative impacts may occur to habitat from development on adjacent private lands, including proliferation of routes. These are anticipated to be minor.

Special Status Plants: One additional population of Tecopa birdsbeak a few miles south of Shoshone would be included in the expanded ACEC, and would receive protection under ACEC management. No other special status plants would be included within the expanded ACEC.

Biological Soil Crusts: Impacts are similar to those described for Alternative 1, except that the public lands receiving increased protection from surface disturbing activities would be increased by 10,450 acres and up to 1,750 acres of private and State lands could subsequently receive increased protection in the reasonably foreseeable future, if acquired.

Riparian/Wetland: Riparian and wetland plant communities, including cottonwood/ willow, emergent wetland, alkaline marsh, and mesquite *bosque* communities would be protected and enhanced under one set of integrated ACEC management plans covering most of the watershed. Riparian restoration activities (e.g., tamarisk control) to benefit water, soil, vegetation, and wildlife on public lands in the China Ranch Wash, Amargosa Canyon ACEC, and Grimshaw Lake ACEC areas, would continue and expand northward along the Amargosa River beyond Shoshone.

Noxious Weeds: As lands in the expanded ACEC are consolidated into federal ownership, tamarisk occurring on lands within the Shoshone stretch of the Amargosa River would be removed, enhancing riparian habitats. The deposition of tamarisk seeds and vegetative material into upstream stretches of the Amargosa River would be reduced or eliminated. Reduced seed dispersal and decreased regrowth of tamarisk in the Amargosa Canyon and Grimshaw Lake areas would improve habitats. (Lovich and DeGouvenain 1998)

Impacts to Wildlife

General Wildlife: Wildlife habitats within the expanded ACEC in this Alternative 2 for the Amargosa vole would receive additional protection from disturbances through land acquisition, plus wider applications of Amargosa vole recovery strategies, and watershed management measures than identified in the single ACEC plans. Management actions would be directed toward the continued viability of endemic species, including spring-dependent macro-invertebrates and special status animals. Public lands north of Grimshaw Lake ACEC and south of the town of Shoshone that support a biologically important ribbon of riparian habitat would be given special management through the watershed-based plan. New areas included in the expanded ACEC would receive additional monitoring and emphasis.

Special Status Animals: Alternative 2 would have the largest amount of Amargosa vole habitats within an ACEC. Public lands on approximately 10,450 additional public land acres (19,760 total public land acres within a potential 21,510-acre boundary), 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. Prescriptions would focus on vole population inventories and monitoring plus habitat maintenance and improvement. Riparian habitat would be restored by controlling tamarisk, identifying and protecting key features, and acquiring interspersed private lands.

The acquisition and consolidation of riparian and watershed resources in the enlarged ACEC would result in improved habitat (e.g., tamarisk removal, restrictions on water diversions) for other threatened and endangered species, including the 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. Inclusion of Shoshone Cave in the ACEC, and preparation of a coordinated watershed strategy would help protect Shoshone Cave whip-scorpion habitats. In addition to species recovery, management actions would improve watershed planning and increase partnerships with local jurisdictions, and neighboring landowners and agencies.

Impacts to Soil, Water and Air Resources

Soil: Impacts to soil quality would be similar to the No Action Alternative. Soil erosion and disturbances would be reduced from isolated areas of private lands, as uses would be eliminated or reduced after acquisition to federal ownership.

Water: The Amargosa watershed would derive increased benefits from coordinated watershed protection and increased monitoring. Other beneficial impacts would be the result of implementation of regional standards, as identified in 4.1.2.

Air: Impacts would be similar to Alternative 1, except beneficial impacts would cover a larger ACEC area and would be the result of implementation of regional standards, as identified in 4.1.2.

Impacts to Wild and Scenic Rivers

Impacts would be similar to Alternative 1. Additional strategies to enhance vole habitat and watershed coordination would benefit Wild and Scenic Rivers.

Impacts to Cultural and Native American Values

Proposed actions for this Alternative would be administrative in nature. The Alternative would designate the Amargosa River ACEC (19,760 total public land acres within a potential 21,510-acre boundary), and identify approximately 2890³ acres of State and Private lands for acquisition from willing sellers. The proposed ACEC boundaries would encompass significant prehistoric and historic cultural resources with important Native American values. Designation of these areas within the Amargosa River ACEC would substantially improve the preservation and protection of cultural resources by limiting and conditioning activities. Actions specific to the management of special status animals and habitats that might affect cultural resources would include riparian restoration, construction, improvement, and maintenance of natural and artificial water sources, land tenure adjustments, and construction of animal enclosures. Under this alternative, specific actions proposed would continue to be reviewed in accordance with Section 106 of NHPA, as implemented in the BLM Statewide Protocol and the 1980 CDCA Programmatic Agreement.

Impacts to Wild Horses and Burros

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

Impacts to Recreation Resources and Activities

Motor-Vehicle Access-Related Activities: Impacts would be the same as Alternative 1 within the existing ACEC boundaries. Routes are to be designated in the rest of the planning area, and areas within an expanded ACEC would have greater restrictions on motor-vehicle access to protect T&E values. The impacts would not be great, because the area identified is primarily inclusive of the riparian corridor, and few routes exist along the corridor. An additional public lands section of the Tonapah and Tidewater railroad may not be accessible by motorized vehicle north of the existing section that is now a hiking trail through the existing ACEC. This is an historic touring route for aficionados of the T&T railroad. Side-washes from the Amargosa River that are interesting explorations would also become potentially unavailable by motor-vehicle. Some routes may be closed to protect listed plants in the Carson Slough area, based on analysis and plant surveys. Public input and review would occur in conjunction with route designations in the watershed, whether within or outside of ACEC boundaries

Other Recreation Activities: This alternative would have a positive benefit to recreation resources and activities. The recreation experience depends on the condition of the environment. Where the actions in this alternative improve natural resources, they also improve the setting for nature-based recreation experiences. ACEC management planning would integrate vole protection strategies, vegetation management strategies, and recreational management strategies. Recreational strategies can be anticipated to include additional trails, trail improvements, interpretive opportunities and other activities that would enhance visitor experiences and increase partnerships with local communities. Visitors would benefit from the combining of existing separate management units into one, easy to identify destination.

³ Some of these lands had been previously identified in the Amargosa ACEC Plan for possible acquisition.

Impacts to Minerals and Mining

Impacts would be the same as Alternative 1 except this Alternative could limit the potential expansion of an existing sand and gravel mining operation located east of Highway 127 and north of Furnace Creek Road (NW1/4 Sec. 29, T.21 N., R.7 E.). The existing pit is located within the boundary of the ACEC under alternative 2, and this could interfere with its expansion as the existing pit is depleted. The need to look elsewhere for sand and gravel as the existing pit is depleted, in turn could significantly increase costs to Inyo County for maintaining roads in the vicinity of Tecopa and Shoshone. The cost of importing aggregate from a remote source would delay road repairs and adversely affect the local community.

The Southern Clay Products' hectorite mine is located more than 1000 feet from the Amargosa River, upriver from the Central Amargosa and Carson Slough. Direct impacts to the riparian area would be minimal. 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 reduce water quality.

Regarding Wild and Scenic River designations, the only eligible wild segment of the Amargosa River already runs primarily through wilderness. It is estimated that no more than a mile of additional eligible riparian length is outside of wilderness and this is east of the potential geothermal area.

Small mining projects could also potentially be affected. Under Alternative 2, new locatable mining activities in the 10,450 expanded area of public lands would require a plan of operations with environmental assessment(s) and biological consultation consistent with ACEC parameters, regardless of size. Under Alternative 1, small proposals (under 1,000 tons) could be covered by a notice and the programmatic biological opinion unless there is a "may affect" to a critical element of the environment—including T&E species, and larger proposals (over 1,000 tons) would require a plan of operations with environmental assessment, and they might be covered by the programmatic biological consultation for small mining actions (under 10 acres) or require separate consultation. ACEC management may identify additional factors for surface disturbing activities.

Impacts to Vehicle Access

Impacts would be similar to Alternative 1 within the existing ACEC boundaries. Routes are to be designated in the rest of the NEMO planning area outside of the desert tortoise subregions, and areas within an expanded ACEC would have greater restrictions on motor-vehicle access to protect T&E values. The impacts would not be great, because the area identified is primarily inclusive of the riparian corridor, and few routes exist along the corridor. An additional public lands section of the Tonapah and Tidewater railroad may not be accessible by motorized vehicle north of the current section that is now a hiking trail through the existing ACEC. The T&T is an historic touring route for aficionados of the T&T railroad, and potentially eligible for the National Register of Historic Places in certain locations. Side-washes from the Amargosa River that are interesting explorations would also become potentially unavailable by motor-vehicle. Some routes may be closed to protect listed plants in the Carson Slough area, based on analysis and plant surveys. Public input and review would occur in conjunction with route designations in the watershed, whether within or outside of ACEC boundaries

Impacts to Land Uses

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

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 (Proposed Plan Amendment) - Amargosa Vole

Impacts to Vegetation

General Vegetation: The alternative proposes designation of an ACEC and various levels of prescriptions that would lead to beneficial impacts to general vegetation, special status plants, biological soil crusts, riparian and wetland areas, and noxious weeds. The positive benefits of Alternative 3, the Proposed Plan Amendment would be similar to those described for Alternative 2 except that the ACEC area in the proposed Plan Amendment, and therefore the associated area of increased benefits to previously mentioned resources, would be approximately 2,400 acres smaller than Alternative 2, but would include 8,050 more acres of public lands than Alternative 1, and identify approximately 2,040 acres of additional State and private lands for potential acquisition, in an overall ACEC of 19,130 acres within the Central Amargosa. Management actions (e.g., removal of tamarisk, restrictions on water diversions, etc.) would be proportionately reduced from Alternative 2. The capability to prevent the reinfestation of tamarisk in Amargosa Canyon and Grimshaw Lake would be reduced because the upper stretches of the Amargosa River around Shoshone would not be added to the ACEC, and the capability of removing tamarisk there would be reduced, or partnership strategies would have to be developed.

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

Biological Soil Crusts: See General Vegetation write-up above.

Riparian/Wetland: See General Vegetation write-up above.

Noxious Weeds: See General Vegetation write-up above.

Impacts to Wildlife

General Wildlife: The alternatives involve primarily the designation of ACEC(s) and prescriptions. Impacts to general wildlife and wildlife habitat as a result of the Proposed Plan Amendment would be similar to those described for Alternative 2, except the ACEC area would be smaller by 2,400 acres but 8,050 public land acres larger than Alternative 1. Protective actions would be the same as but cover proportionately less area relative to Alternative 2. Effects of those actions could have somewhat less timely benefits relative to native species habitat restoration, based on general vegetation discussion above.

Special Status Animals: Impacts to Amargosa vole would be similar to those described in Alternative 2 except the expanded ACEC area would be smaller by 2,400 acres. All critical habitat plus other vole habitat would be within the new Amargosa River ACEC. The 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. Effects of actions could have somewhat less timely benefits relative to migratory bird species habitat restoration, based on general vegetation discussion above.

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, and would include increased benefits from coordinated watershed protection, increased monitoring, and implementation of regional standards as identified in Section 4.1.2.

Air: Impacts would be the same as Alternative 1, except beneficial impacts would cover a larger ACEC area and would be the result of implementation of regional standards as identified in Section 4.1.2.

Impacts to Wild and Scenic Rivers

Impacts would be similar to Alternative 1. As with Alternative 2, additional strategies to enhance vole habitat and watershed coordination would benefit Wild and Scenic Rivers, but would cover a slightly smaller area.

Impacts to Cultural and Native American Values

Analysis and effects would be substantially the same as Alternative 2, except this alternative would designate the Amargosa River ACEC with 8,050 additional public land acres (17,360 total public land acres within a potential 19,130-acre boundary) and identify approximately 2,040 acres of late and private lands for acquisition from willing sellers. The differences between this Alternative and Alternative 2 would not cause negative impacts to cultural resources. The proposed ACEC boundaries would encompass significant prehistoric and historic cultural resources and sites with important Native American values. Designation of these areas within the Amargosa River ACEC would substantially improve their preservation and protection by limiting and conditioning activities. There would be no change in the management or impacts to cultural resources outside the ACEC from the No Action Alternative.

Impacts to Wild Horses and Burros

Impacts would be the same as Alternative 2.

Impacts to Cattle Grazing and Allotments

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

Impacts to Recreation Resources and Activities

Impacts of Alternative 3 (Proposed Plan) would be the same as Alternative 2. The difference in acreage would not appreciably change impacts to recreation resources and activities. Areas in the Central Amargosa, which are within the Alternative 2 ACEC boundary and excluded from this alternative are primarily private lands or permitted activity lands, which would not be subject to route designations.

Impacts to Minerals and Mining

Impacts to minerals and mining would be the same as Alternative 1. The amount of critical habitat, equal for all alternatives, is the factor most likely to affect potential mineral exploration and geothermal energy development.

Compared with Alternative 2, road improvements would be facilitated by continuing to make the Furnace Creek Road/Highway 127 gravel pit available as an aggregate supply.

Impacts from potential suitability designation as a Wild and Scenic River would be the same as in Alternative 2, with no known impact on mineral development.

Impacts to Vehicle Access

Impacts would be similar to Alternative 1 and the same as Alternative 2 within the existing ACEC boundaries. Routes are to be designated in the rest of the NEMO planning area outside of the desert tortoise subregions, and areas within an expanded ACEC would have greater restrictions on motor-vehicle access to protect T&E values. The impacts would not be great, because the area identified is primarily inclusive of the riparian corridor, and few routes exist along the corridor. An additional public lands section of the Tonapah and Tidewater railroad may not be accessible by motorized vehicle north of the current section that is now a hiking trail through the existing ACEC. The T&T is an historic touring route for aficionados of the T&T railroad, and potentially eligible for the National Register of Historic Places in certain locations. Side-washes from the Amargosa River that are interesting explorations would also become potentially unavailable by motor-vehicle. Some routes may be closed to protect listed plants in the Carson Slough area, based on analysis and plant surveys. Public input and review would occur in conjunction with route designations in the watershed, whether within or outside of ACEC boundaries.

Impacts to Land Uses

Impacts to land use would be similar in scope as Alternative 2, except about 2,400 acres less than Alternative 2 would be potentially affected by new development.

4.3.4 Alternative 4 - Amargosa Vole

Impacts to Vegetation

General Vegetation: The alternative proposes designation of an ACEC and various levels of prescriptions that would lead to beneficial impacts to general vegetation, special status plants, biological soil crusts, riparian and wetland areas, and noxious weeds. The positive benefits of Alternative 4 would be similar to those described for Alternative 2 except that the scope of the new benefits would be substantially smaller. The ACEC area, and therefore the associated area of increased benefits to previously mentioned resources, would be approximately 7,680 acres smaller than Alternative 2, 5,300 acres smaller than Alternative 3, and would include 3,310 more acres of public lands than Alternative 1. It also would identify approximately 480 acres of additional State and private lands for potential acquisition. Protective actions including removal of tamarisk, and restrictions on water diversions would be proportionately increased relative to Alternative 1. ACEC management would be contiguous, from the three Grimshaw Lake, Amargosa Vole, and Amargosa Canyon ACECs, increasing protective or focused management of a larger portion of the watershed. Capabilities to remove tamarisk throughout the watershed would be proportionately lower than Alternative 2 or 3.

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

Biological Soil Crusts: See general vegetation discussion above.

Riparian/Wetlands: See general vegetation discussion above.

Noxious Weeds: See general vegetation discussion above.

Impacts to Wildlife

General Wildlife: Impacts to wildlife populations in general would be similar to those described for Alternative 1, except that the new ACEC public land acreage would be greater by 3,310 acres. Protective actions would be proportionately increased. Important riparian habitat along the Amargosa River north of the ACEC that provides habitat for neotropical migratory birds would be outside of the new Amargosa vole ACEC, and would not receive special ACEC management. Hence, degradation of this habitat is likely through vegetation removal, tamarisk, invasions and diversion of the stream course.

Special Status Animals: Impacts to Amargosa vole would be similar to those described in Alternative 3 but over an area 5,300 acres smaller. As in Alternative 3, all critical habitats 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 capability for species recovery would be limited by not including suitable habitat to the north along the Amargosa River.

Impacts to Soil, Water and Air Resources

Soil: Impacts would be similar to Alternative 1. Beneficial impacts would result from the implementation of regional standards as identified in Section 4.1.2.

Water: Impacts would be similar to Alternative 1. Beneficial impacts would result from the implementation of regional standards as identified in Section 4.1.2.

Air: Impacts would be similar to Alternative 1. Beneficial impacts would result from the implementation of regional standards as identified in Section 4.1.2.

Impacts to Wild and Scenic Rivers

Impacts would be the same as Alternative 1. Additional strategies to enhance vole habitat would benefit Wild and Scenic Rivers.

Impacts to Cultural and Native American Values

Proposed Management Options: Analysis and effects would be substantially the same as Alternatives 2 and 3, except Alternative 4 would designate 4,520 acres of public lands for the Amargosa Vole ACEC and identify approximately 480 acres of state and private lands for acquisition from willing sellers. The differences between alternatives would not be consequential for impacts to cultural resources. Although the ACEC is approximately 50 percent smaller than proposed in Alternative 2, the proposed ACEC boundaries would still encompass significant prehistoric and historic cultural resources and sites having important Native American values. Designation of these areas in the Amargosa River ACEC would substantially improve the preservation and protection of the cultural resources by limiting and conditioning activities that would be authorized to occur. There would be no change in the management or impacts to cultural resources outside the ACEC from the No Action Alternative.

Impacts to Wild Horses and Burros

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).

Impacts to Recreation Resources and Activities

The impacts of Alternative 4 would be similar to Alternative 1 (No Action). Recreation uses may be impacted within the ACEC, just as they may in current critical habitat. Recreation would not receive focus in the ACEC management planning, so it would be less enhanced in this ACEC than other alternatives.

Impacts to Minerals and Mining

Impacts regarding critical habitat and the ACEC would be the same as Alternative 1 (No Action). Impacts from potential suitability designation as a Wild and Scenic River would be the same as in Alternatives 2 and 3 (no known impact on mineral development).

Impacts to Vehicle Access

Impacts to vehicle use would be the same as Alternative 2.

Impacts to Land Uses

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

4.4 Threatened And Endangered Species Conservation: Threatened and Endangered 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; the Amargosa niterwort, Ash Meadows gumplant, and spring-loving centaury. No recovery plans have yet been developed for these species. 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 8, Figure 10 for a demarcation of the identified areas).

4.4.1 Alternative 1 (No Action) – Threatened and Endangered Plants

Impacts to Vegetation

General Vegetation: The Carson Slough area has numerous plant communities of interest, including riparian, alkali marsh, and mesquite *bosque* associations. Due to lack of access and low mining potential, impacts to vegetation should be very low on public lands located north of Ash Meadows Road. Activities that disturb vegetation or alter surface water flows would be greater on public lands located south of Ash Meadows Road due to moderate potential for mining activities. Vegetation would be lost to new access roads and project site development. Public lands on both sides of Ash Meadows Road would continue to receive management attention because it is a Salt and Brackish Water Unusual Plant Assemblage (UPA). The recently installed fencing along both sides of Ash Meadows Road, which passes through the area, would reduce off-highway travel into wetland areas, especially south of the road.

Increases in wild horses and burros from present estimates of 4 each to as many as 28 each or more before removals would be undertaken, would result in loss of vegetation due to foraging, trailing, and play.

Special Status Plants: Under the No Action Alternative, activities would be evaluated on a case-by-case basis, as they are proposed or a threat to sensitive species in the area. No specific management actions for recovery of Amargosa niterwort, Ash Meadows gumplant or spring-loving centaury would be identified at this time. 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. Any proposed project or activity that would adversely affect one or more of the three species would receive review by US Fish and Wildlife Service under the consultation procedures of the Endangered Species Act.

Increases in wild horses and burros from present estimates of 4 each to as many as 28 each or more before removals would be undertaken, would result in trampling of listed plants and alterations of listed plant habitat due to burro activities.

Biological Soil Crusts: Impacts would be similar to those described for General Vegetation described above. Various components of the biological soil crust would respond differently to activities that disturb the surface or alter water flows. Mitigation measures minimizing the area of disturbance or degree of soil disturbance would limit crust impacts.

Increases in wild horses and burros from present estimates would result in damage to biological soil crusts.

Riparian/Wetland: Because the plant communities in this area are wetlands, impacts would be the same as described for General Vegetation.

Noxious Weeds: Efforts to reduce tamarisk infestations would continue. Tamarisk can reduce surface water flow, lower the water table, and bring toxic salts to the surface (Sala *et al.* 1996, Lovich and DeGouvenain 1998).

Impacts to Wildlife

General Wildlife: Riparian, alkali marsh, and mesquite *bosque* communities are uncommon in the desert and provide dense cover and overstory important for some species, such as neotropical migrant birds in spring and fall. Under this alternative, no management actions to protect or enhance the area would be implemented.

Wildlife habitat would be degraded by changes in water flow and loss of vegetative cover from project activities in the area, such as mining. Degraded habitat would support reduced wildlife populations. There would be not many surface disturbing project activities in the area.

Increases in wild horses and burros from present estimates of 4 each to as many as 28 each would result in habitat degradation.

Special Status Animals: No special status animals have been recorded in this area.

Impacts to Soil, Water and Air Resources

Soil: Under this No Action Alternative, wild horses would continue to compact and disturb soils in the area of the slough. Most wild horse use has been identified west of this area near the small community of Death Valley Junction (Sam Fitton, BLM, pers. com.). There would be increased erosion when heavy rainfalls quickly channel over compacted clay or clay-like soils, and the water is not readily absorbed. Wild burros have not been observed in the area.

Water: Impacts from the No Action Alternative represent non-point-source impacts that would be controlled by appropriate management practices. Portions of the MUC guidance for the CDCA Plan and specific management actions in the Carson Slough area and the UPA comply with 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 hydrological review of projects. The Best Management Practices reduce sedimentation and increase infiltration rates. They are desirable and would be positive steps toward solving the impaired watershed classifications, which occur in portions of this watershed. In addition, implementation of fallback standards as identified in 4.1.1 would provide some beneficial impacts to water quality and quantity.

Air: The No Action Alternative would not affect air quality 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 would not impact the wild horse herd in this area. Monitoring and surveys would evaluate strategies to protect listed plants from trampling. 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 species.

Impacts to Cultural and Native American Values

Existing CDCA management direction for critical habitat would be applied for T & E plant conservation on 1,540 acres. There would be no specific actions proposed in this alternative that would affect cultural resources. Actions specific to the management of special status animals and habitat that might affect cultural resources include: riparian restoration, construction, improvement, and maintenance of natural and artificial water sources, and construction of animal exclosures. Under the No Action Alternative, specific actions that would be proposed would continue to be reviewed in accordance with Section 106 of NHPA, as implemented in the BLM Statewide Protocol and the 1980 CDCA Programmatic Agreement. There would be no substantial change in the level of threat or impacts to cultural resources from this Alternative.

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 Unusual Plant Assemblages and riparian areas. Application of existing CDCA plan route designation to conserve special status species and natural communities would result in minor impacts to vehicular access, and therefore, to recreation. Routes of travel designation would occur throughout the planning area by mid-2004 under all alternatives, and areas with sensitive resources receive special consideration, consistent with 43 CFR 8342.1 criteria.

If the “No Action” Alternative were selected, special management actions would 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 would result in minor positive impacts for low-impact recreation activities. No irreversible and irretrievable commitment of recreation resources would 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 disturbances 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 by this alternative.

Impacts to Vehicle Access

Routes of travel designation would occur throughout the planning area by mid-2004 under all alternatives, and areas with sensitive resources receive special consideration, consistent with 43 CFR 8342.1 criteria. There would be minimal additional impacts anticipated to vehicle access under this alternative. Much of the playa is already closed to vehicular use. Supplemental route closure may occur north of Ash Meadows road to protect sensitive soils, riparian areas, and T&E plants. Generally, existing routes would continue to be used south of Ash Meadows Road in the affected area, unless specific T&E plants would be at risk. Two routes were closed in the area more than a decade ago to protect plant populations, and these would probably remain closed, consistent with risk. The area is managed under special plant and riparian protection policies.

4.4.2 Alternative 2 (Proposed Plan) – Threatened and Endangered Plants

Impacts to Vegetation

General Vegetation: Riparian, alkali marsh, and mesquite *bosque* communities on 4,340 acres of public lands would be included in the Lower Carson Slough ACEC. This would include vegetation and lands within and around much of the Salt and Brackish Water Marsh Unusual Plant Assemblage (UPA). Management actions to monitor and protect this assemblage and plant communities would result in reduced activities that disturb the surface or alter water flows. Additional coordination with upstream landowners in Upper Carson Slough and along the upper Amargosa River would promote conservation of riparian and wetland communities and other vegetation present on both sides of the state border. This planning would promote preservation and enhancement of existing water flows throughout the watershed.

Increases could occur in wild horses from present estimates of 4 horses to as many as 12 before removals would be undertaken, but would be offset by the elimination of all burros. Presence of wild horses and burros would result in loss of vegetation due to foraging, trailing, and play. Loss of vegetation would be less than the No Action Alternative because of lower burro numbers. The same situation would apply for special status plants.

Special Status Plants: Amargosa niterwort, Ash Meadows gumplant, and, perhaps, spring-loving centaury as well as critical habitat for the first two species, would be included within the new Lower Carson Slough ACECs. Plant population inventory and monitoring proposed for the ACEC would identify critical areas requiring protection. Additional management emphasis would be added to address the relationship of listed plants to the entire Amargosa River watershed. As a result, the overall likelihood of disturbance of listed plant populations would be reduced.

Biological Soil Crusts: Because impacts would result from project activities, impacts from the Proposed Plan would be the same as in the No Action Alternative.

Riparian/Wetland: Because virtually all of the plant communities in this area would be wetlands, impacts would be the same as described for General Vegetation.

Noxious Weeds: Because tamarisk removal is a continuing program, impacts would be the same as those described for the No Action Alternative.

Impacts to Wildlife

General Wildlife and Special Status Animals: Management on a watershed basis in the Proposed Plan would aid in maintaining the functioning condition of the Amargosa River and associated wetland areas. ACEC prescriptions would reduce changes in vegetative cover and water flows. Habitat for wildlife species dependent upon wetland and riparian ecosystems (e.g., neotropical migrant birds, riparian songbirds, waterfowl, shorebirds, bats, small mammals, etc.) would not diminish through time.

Potential for increases in wild horses from present estimates, but offset by the elimination of all burros, would result in no net changes to degraded habitat or corresponding changes in wildlife populations. Degradation of habitat and loss of wildlife would be less than Alternative 1 because of the lack of burros and smaller potential for growth of wild horse herd.

Impacts to Soil, Water and Air Resources

Soil: There would be a 57 percent reduction in the appropriate management level for wild horses, and this would reduce the herd from 28 to 12 horses in the Chicago Valley Herd Management Area (HMA). Wild burros would be reduced from 28 to 0 burros in the Chicago Valley HMA. Wild burros have not been seen in the area for many years and probably would not affect the soils in the area under consideration unless a herd was moved into the area. There would be a reduction in soil compaction, especially wet soils in the vicinity of the slough with a decrease in horses. The use of existing horse trails and preferred grazing areas would continue, but at a reduced level.

Water: Impacts would be similar to Alternative 1. Additional benefits to water resources would result because of 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 regional standards and guidelines.

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

Impacts to Wild Horses and Burros

This alternative would adjust the Appropriate Management Level for the Chicago Valley Herd Management Area 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 has been zeroed out due to public lands transferred to the U.S. Fish and Wildlife Service. The probability of wild horses moving into Nevada therefore necessitates removals, as their populations increase. There are currently removals of the younger siblings, which are placed in the BLM Wild Horse and Burro Adoption Program. New mares are periodically introduced into the herd to prevent inbreeding and increase the genetic health of the herd.

There would be no direct impact to burro populations, because there are not any known to be present in the herd area. Any burros located in the herd area would be removed and placed into the BLM' Adopt - A - Horse or Burro program. Impacts from removal of burros are similar to the actions described in Section 4.2 for alternatives related to desert tortoise conservation and recovery

Impacts to Cultural and Native American Values

Analysis and effects of the Proposed Plan would be similar to the No Action Alternative, except that critical habitats for T & E plant conservation would be combined and include potential habitat lands in between (4,340 acres) and managed as an ACEC. Proposed actions would be administrative. There would be no specific actions that affect cultural resources. Actions specific to the management of special status animals and habitat that might affect cultural resources include riparian restoration, construction, improvement and maintenance of natural and artificial water sources, and construction of animal enclosures. Specific actions would continue to be reviewed in accordance with Section 106 of NHPA, as implemented in the BLM Statewide Protocol and the 1980 CDCA Programmatic Agreement. There would be no substantial change in the level of threat or impacts to cultural resources.

Impacts to Recreation Resources and Activities

Impacts of the Proposed Plan would be similar to the No Action Alternative. Designation of routes of travel using 43 CFR 8342.1 criteria to conserve special status species and natural communities during the 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 improved riparian system. No irreversible and irretrievable commitment of recreation resources is anticipated.

Consistent with FLPMA and the CDCA Plan, there would be opportunities for interested and potentially impacted groups and individuals to participate in the development of the route designations and ACEC activity plan for this area. The activity plan would 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, and would develop strategies to pursue compatible uses.

Impacts to Minerals and Mining

Impacts would be similar to the No Action Alternative, because the only difference would be the result of a MUC change (1,290 acres of public lands south of Ash Meadows Road that is currently MUC moderate). In this area new exploration operations sampling less than 1,000 tons would be subject to a 30-day period (under a plan of operations) in MUC L or an ACEC instead of the 15-day waiting period (under a notice) that occurs in the existing MUC M zoning, before operations could start. The ACEC Plan may impose additional restrictions in this area when it is developed. Expansion of the zeolite mine east of Death Valley Junction would require a plan of operations regardless of the multiple-use class.

Impacts to Vehicle Access

Impacts would be similar to Alternative 1. Routes of travel designation would occur throughout the planning area by mid-2004 under all alternatives, and areas with sensitive resources receive special consideration, consistent with 43 CFR 8342.1 criteria. Route designations would 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 would occur in conjunction with site-specific route designation.

4.4.3 Alternative 3 – Threatened and Endangered Plants

Impacts to Vegetation

General Vegetation: Because both Alternatives 3 and 2 above involve designation and management of ACECs, impacts under this alternative would be similar to those described for Alternative 2, but only on the 1,540 acres designated as critical habitat for the niterwort and gumplant. The resulting beneficial effects of ACEC designation described in Alternative 3 would occur on 2,800 acres less than in Alternative 2.

Special Status Plants: Both Alternative 3 and the Proposed Plan (Alternative 2) involve designation and management of ACECs. Impacts would be similar to those described for special status plants in Alternative 2. Niterwort and gumplant populations not included in critical habitat would not be included in the ACEC nor be addressed in the ACEC management plan. The ACEC management plan would focus on listed plant conservation, monitoring, and endangered plant recovery with reduced emphasis on watershed management.

Biological Soil Crusts: Impacts would be similar to those described for Alternative 1.

Riparian/Wetland: Because virtually all of the plant communities in this area are wetlands, impacts would be the same as described for General Vegetation.

Noxious Weeds: Tamarisk removal is a continuing process. Impacts would be the same as those described for Alternative 1.

Impacts to Wildlife

General Wildlife and Special Status Animals: Impacts of Alternative 3 would be similar to those described for wildlife in Alternative 2. The benefits of ACEC management planning would apply to a reduced area compared to Alternative 2.

Impacts to Soil, Water and Air Resources

Soil: Beneficial impacts would be the same as Alternative 2 but affect 2,800 acres less. There would be a 57 percent reduction in the appropriate management level for wild horses, and this would reduce the herd from 28 to 12 horses in the Chicago Valley Herd Management Area (HMA). Wild burros would be reduced from 28 to 0 burros in the Chicago Valley HMA. Wild burros have not been seen in the area for many years and probably would not affect the soils in the area under consideration unless a herd was moved into the area. There would be a reduction in soil compaction, especially wet soils in the vicinity of the slough with a decrease in horses. The use of existing horse trails and preferred grazing areas would continue, but at a reduced level.

Water: Impacts would be similar to Alternative 1. Additional benefits to water resources would result because of 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 regional standards and guidelines. Positive impacts would affect 2,800 acres less than Alternative 2.

Air: Alternative 3 for T&E plant conservation and recovery would not affect air quality except as identified in 4.1.2, implementation of regional standards.

Impacts to Wild Horses and Burros

Impacts would be the same as Alternative 2. There would be no direct impacts. See Alternative 2 for further discussion.

Impacts to Cultural and Native American Values

Impacts would be the same as Alternative 2. Analysis and effects of Alternative 3 would be similar to the No Action Alternative, except that critical habitats for T & E plant conservation would be managed as an ACEC. Proposed actions would be administrative. There would be no specific actions that affect cultural resources. Actions specific to the management of special status animals and habitat that might affect cultural resources include riparian restoration, construction, improvement and maintenance of natural and artificial water sources, and construction of animal enclosures. Specific actions would continue to be reviewed in accordance with Section 106 of NHPA, as implemented in the BLM Statewide Protocol and the 1980 CDCA Programmatic Agreement. There would be no substantial change in the level of threat or impacts to cultural resources.

Impacts to Recreation Resources and Activities

Impacts of the Proposed Plan would be similar to the No Action Alternative. Designation of routes of travel using 43 CFR 8342.1 criteria to conserve special status species and natural communities during the 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 improved riparian system. No irreversible and irretrievable commitment of recreation resources is anticipated.

Consistent with FLPMA and the CDCA Plan, there would be opportunities for interested and potentially impacted groups and individuals to participate in the development of the route designations and ACEC activity plan for this area. The activity plan would 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, and would develop strategies to pursue compatible uses.

Impacts to Minerals and Mining

Impacts would be similar to Alternative 2. Issues and management would be the same as Alternative 2. Compared with Alternative 2, the acreage for special protective status, 1,540 acres, would be only about half as much. Approximately one-third of this acreage would be excluded from the requirements for plans of operations for sampling 1,000 tons or less.

Impacts to Vehicle Access

Impacts would be the same as Alternative 2. Routes of travel designation would occur throughout the planning area by mid-2004 under all alternatives, and areas with sensitive resources receive special consideration, consistent with 43 CFR 8342.1 criteria. Route designations would 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 would occur in conjunction with site-specific route designation.

4.5 Bat Conservation In The Silurian Hills

This amendment was developed to provide a strategy to manage representative habitats on public lands for sensitive bat species in the Silurian Hills. (Refer to Chapter 8, Figure 11 for a map of the 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 the guidelines for Multiple-Use Class (MUC) Moderate-Use. These guidelines would be based on a balance between high 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.

When mining activities are less than 1000 tons, in MUC Moderate Use areas, and are not in habitats of a listed or proposed species, they may proceed after 15 days notice. There would be little time for staff to conduct field examinations or site-specific mitigations on mining activities in old mines. Habitats of cave and mine dwelling species, such as striped skunk and ringtail cat could be disturbed without inventory or appropriate mitigations.

Special Status Animals: Nine bat species occur in the planning area. Townsend's western big-eared bat and California leaf-nosed bat are cave/mine dependent, and the pallid bat and fringed myotis commonly use mines. (Altenbach and Pierson 1995). These four species are BLM California sensitive species. The bat species are sensitive to human presence and may abandon nursing, hibernating, or roosting habitat when disturbed (Tuttle and Taylor 1994). Because the suitability of bat habitat is controlled by critical air temperature and circulation, modifications to mines may result in death of young bats or abandonment of roosts or hibernaculae (Tuttle and Taylor 1994). Protection of BLM sensitive bat species known to roost, hibernate, or rear young in 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 sensitive bats and other mine-dwelling wildlife would continue (see discussion above for General Wildlife).

Impacts to Cultural and Native American Values

No Action Alternative actions would be administrative. Existing CDCA management direction for habitats would be applied for bat conservation on 7,400 acres. There would be no specific actions proposed that would affect cultural resources. Actions for the management of special status animals and habitat that might affect cultural resources include route restoration, construction, improvement, and maintenance of natural and artificial water sources, and construction of animal exclosures. Under the No Action Alternative, actions would continue to be reviewed in accordance with Section 106 of NHPA, as implemented in the BLM Statewide Protocol and the 1980 CDCA Programmatic Agreement.

Impacts to Recreation Resources and Activities

Motor-Vehicle Access-Related Activities: Route designation would occur consistent with 43 CFR 8342.1 guidelines. Opportunities for casual use and permitted events would not substantially change because, per current MUC "M" guidelines, BLM would apply the route approval process to allow use of "existing" routes [CDCA Plan, 1982 Amendment #3]. Some limitations may be imposed for sensitive resources. All such routes may be evaluated for non-competitive and competitive events, consistent with other guidelines within the CDCA Plan and current policies. A programmatic dualsport biological opinion, and past environmental analyses currently exist which would cover some routes in the general vicinity. Short-term limitations have been placed on specific routes in the past, in the immediate vicinity of known maternity roosts.

Other Recreation Activities: Opportunities for non-motorized are not likely to be substantially affected except where/when disrupted, displaced (in time or geography), and rendered infeasible or impractical by the opening or closure of particular routes or caves, either where providing motorized access to, or isolation is in the interest of promoting the activity. Caving is the recreational pursuit most likely to be affected: some cave explorers may prefer motorized access to their caves, while others may prefer not to have routes to them, so they are not as readily “discovered”. Some specific caves with maternity roosts would not be accessible to cavers or hikers to protect bat maternity roosts. Bat grates are the current preferred strategy in known maternity roosts when risk of access and disturbance is likely during breeding and roosting season.

Impacts to Minerals and Mining

Currently, mining may occur on public lands in the affected area under MUC Moderate guidelines. Under this classification, mining or sampling over 1,000 tons may be done under a plan of operations that requires a processing time of 30 days and posting a financial assurance. Sampling less than 1,000 tons may be done under a Notice, i.e., within 15 days if no “may affect” to critical resources would occur, but still requires a financial assurance.

Impacts to Vehicle Access

This No Action Alternative for bat conservation consists of activities already identified in the CDCA Plan for the conservation and recovery of special status species and in implementations for sensitive wildlife, including bats. The same criteria proposed through the NEMO plan to conserve special status bats and their natural communities would be applied during the route designation process.

4.5.2 Alternative 2 - Bat Conservation

Impacts to Wildlife

General Wildlife: Species that inhabit caves and abandoned mines would receive added habitat protection through mitigation measures, route designations, and other management actions to be developed in the habitat management plan prior to future project proposals. These measures would aid in reducing adverse impacts from mining proposed in abandoned mines. Abandoned mines are rare niches that are regularly used by such uncommon species as ringtail, spotted skunk, chuckwalla, and some invertebrates.

Special Status Animals: A habitat management plan would be developed that implements management directions provided in existing BLM bat management policies. The habitat management plan would identify mitigations for proposed mining and other surface disturbing activities and changes in route use (e.g., seasonal closures) to benefit bats and mine-dwelling wildlife. Disturbances of bats and their habitats would be reduced or eliminated as inventories and monitoring could be conducted and mitigation measures identified before projects were proposed for abandoned mines.

The review period for field assessment and application of mitigation measures for bats would be increased from 15 days (under a notice) to 30 days under a plan of operation, as required in MUC Limited Use. This would give added time for field examinations and the application of effective measures described in the habitat management plan.

Impacts to Cultural and Native American Values

Alternative 2 Actions would be administrative. Existing CDCA management direction for habitat management planning would be applied for bat conservation on 7,400 acres. There would be no specific actions proposed that would affect cultural resources. Actions for the management of special status animals and habitat that might affect cultural resources include route restoration, construction, improvement, and maintenance of natural and artificial water sources, and construction of animal enclosures. Under Alternative 2, actions would continue to be reviewed in accordance with Section 106 of NHPA, as implemented in the BLM Statewide Protocol and the 1980 CDCA Programmatic Agreement.

Impacts to Recreation Resources and Activities

Motor-Vehicle Access-Related Activities: Route designation would occur consistent with 43 CFR 8342.1 guidelines. Opportunities for casual use and permitted events would be limited in areas with bat maternity roosts or for other sensitive resources, consistent with the route designation criteria. All such routes may be evaluated for non-competitive and competitive events, consistent with other guidelines within the CDCA Plan and current policies. Limitations have been placed on specific routes in the past, in the immediate vicinity of known maternity roosts. Primary access routes intended for regular use and for linking desert attractions for the general public as well as secondary access routes intended to meet specific user needs would be addressed during the route designation process.

Other Recreation Activities: Opportunities for non-motorized recreation including horseback riding, hiking, caving, rock hounding and shooting are not likely to be substantially affected except where/when disrupted, displaced (in time or geography), and rendered infeasible or impractical by the opening or closure of particular routes or caves, either where providing motorized access to, or isolation is in the interest of promoting the activity. Caving is the recreational pursuit most likely to be affected: some cave explorers may prefer motorized access to their caves, while others may prefer not to have routes to them, so they are not as readily “discovered”. Some specific caves with maternity roosts would not be accessible to cavers or hikers to protect bat maternity roosts. Bat gates are the current preferred strategy in known maternity roosts when risk of access and disturbance is likely during breeding and roosting season.

Impacts to Minerals and Mining

Impacts would be similar to Alternative 1. Mitigation coming out of the Habitat Management Planning process, including follow-up under the NEPA process, is not anticipated to significantly affect the cost or processing time for a plan of operations. Unless a threatened or endangered species or other significant impact is involved, mitigation cannot be imposed that would significantly affect the economics of the operation. Therefore, the surface managing agency generally conducts surveys and removes bats within regulatory time frames. Seasonal use restrictions are applied with discretion.

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. Mining activity is expected to continue in the area.

Impacts to Vehicle Access

Route designation would occur consistent with 43 CFR 8342.1 guidelines. The same criteria proposed through the NEMO plan to conserve special status bats and their natural communities would be applied during the route designation process. Alternative 2 would consider activities already identified in the CDCA Plan for the conservation and recovery of special status species and in implementations for sensitive wildlife, including bats, as well as supplemental measures of the HCP planning process.

The Bat Conservation Alternative 2 would result in minor to moderate negative impacts 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 (Proposed Plan) - Bat Conservation

Impacts to Wildlife

Impacts of this Proposed Plan Amendment would be the same as the No Action Alternative 1 except that the change to MUC Limited Use on 7,400 acres would allow the review period for field assessment and application of mitigation measures for bats and other cave-dwelling animals to be increased from 15 days (under a notice) to 30 days under a plan of operation, as required in MUC Limited Use. This would provide some additional time for field examinations and development of mitigations.

Impacts to Cultural and Native American Values

Analysis and effects of the Proposed Plan is similar to the No Action Alternative. Proposed actions would be administrative. There would be no specific actions proposed that affect cultural resources. Actions specific to the management of special status animals and habitat that might affect cultural resources include: construction, improvement, and building animal enclosures. Under the Proposed Plan Amendment, specific actions would continue to be reviewed in accord with Section 106 of NHPA, as implemented in the BLM Statewide Protocol and the 1980 CDCA Programmatic Agreement.

Impacts to Recreation Resources and Activities

Impacts would be the same as Alternative 2.

Motor-Vehicle Access-Related Activities: Route designation would occur consistent with 43 CFR 8342.1 guidelines. Opportunities for casual use and permitted events would be limited in areas with bat maternity roosts or for other sensitive resources, consistent with the route designation criteria. All such routes may be evaluated for non-competitive and competitive events, consistent with other guidelines within the CDCA Plan and current policies. Limitations have been placed on specific routes in the past, in the immediate vicinity of known maternity roosts. Primary access routes intended for regular use and for linking desert attractions for the general public as well as secondary access routes intended to meet specific user needs would be addressed during the route designation process.

Other Recreation Activities: Opportunities for non-motorized recreation including horseback riding, hiking, caving, rock hounding and shooting are not likely to be substantially affected except where/when disrupted, displaced (in time or geography), and rendered infeasible or impractical by the opening or closure of particular routes or caves, either where providing motorized access to, or isolation is in the interest of promoting the activity. Caving is the recreational pursuit most likely to be affected: some cave explorers may prefer motorized access to their caves, while others may prefer not to have routes to them, so they are not as readily “discovered”. Some specific caves with maternity roosts would not be accessible to cavers or hikers to protect bat maternity roosts. Bat grates are the current preferred strategy in known maternity roosts when risk of access and disturbance is likely during breeding and roosting season.

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 increased processing time from 15 to 30 days for sampling less than 1,000 tons. Otherwise, the impact is expected to be not significantly different from the No Action Alternative, because bat gates are currently required if necessary to protect bats.

Impacts to Vehicle Access

Impacts would be similar to Alternative 2 but may be less restrictive since route designation would not be looked at through an HMP. Route designation would occur consistent with 43 CFR 8342.1 guidelines. The same criteria proposed through the NEMO plan to conserve special status bats and their natural communities would be applied during the route designation process. Alternative 3 would consider activities already identified in the CDCA Plan for the conservation and recovery of special status species and in implementations for sensitive wildlife, including bats, consistent with MUC “limited” guidelines.

Alternative 3 would result in minor to moderate negative impacts to vehicle access based on analysis and route closures and seasonal limitations identified during route designation using 43 CFR 8342.1 criteria. Other resource values and uses would be considered during the route designation process and additional public input and review would occur of route-specific designations.

4.6 Released Lands: Multiple Use Class of Released Wilderness Study Areas

4.6.1 Alternative 1 (No Action) - Released Lands

All lands addressed in this alternative would be managed as either MUC Limited Use (315,950 acres) or MUC Moderate Use (152,350 acres).

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 Amendment (September, 1980), according to planning area. The Land Use plan map 1 with the CDCA Plan for Planning Area that describes boundaries and designations. The No Action Alternative would result in a mixed pattern of approximately 315,950 acres managed under MUC Limited guidance and 152,350 acres managed under MUC Moderate guidance. (Chapter 8, Figure 5a).

Impacts to Vegetation

Notices in the CDCA would be uncommon because so much of the public land in the CDCA is in MUC Limited use or MUC Controlled use (i.e., wilderness), and so much land is occupied by listed species (e.g., desert tortoise). However, where a notice may occur (i.e., a mining proposal up to 1,000 tons of disturbance) in small or potential habitats such as caves, abandoned mines or dunes, the effects could be significant.

There would be no direct impacts to vegetation from MUC management. Impacts described from MUC management would be indirect. No released lands addressed in this amendment were originally assigned MUC Intensive. The differences in alternatives would be between different mixes of MUC Limited and Moderate categories. The major effect on vegetation is based on the handling of small mining notices. Within MUC M, exploratory (as opposed to development) notices under 1,000 tons would be not a federal action, whereas in 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 prevention of the spread of exotic invasive weeds. Under the No Action Alternative, potential for negative impacts would continue at the same level. Some vegetation may continue to receive impacts without the opportunity for mitigation, and potential for beneficial impacts from avoidance and other mitigation would continue for activities that are larger than 1,000 tons.

There would be some indirect beneficial impacts to resources from route designation under MUC L parameters. These impacts would be analyzed on a site-specific basis and cannot be readily quantified with some exceptions. In the case of 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, the No Action Alternative cumulatively would be less favorable than other alternatives that provide 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

Releasing lands from wilderness study status in conformance with the California Desert Protection Act is a plan conformance and maintenance action that would not affect cultural resources. MUC designations for released lands would return to designations in place at the time of the CDCA Plan. In six small wilderness study area released lands previously designated as MUC C and totaling approximately 17,500, more widespread and severe impacts might be expected from higher levels of vehicle use, and from shorter time limits for responses to mining proposals under all other MUC.

Impacts to Utilities

There would be no measurable impacts to utilities from the No Action Alternative, because almost all activities would be focused in established utility corridors. In the California Desert Conservation Area, activities involving major utilities must occur in these corridors unless a plan amendment is obtained, and the uses and constraints on uses would be not be different in MUC L, M, or I areas, based on MUC. Therefore, utilities would not be appreciably affected, regardless of MUC identified on released lands. This is the same for all alternatives.

Impacts to Minerals and Mining

Under the No Action Alternative, potential for negative impacts and for mitigation would continue at the same levels. From the standpoint of exploration and mining, the No Action Alternative cumulatively would be more favorable than Alternative 2 or 3. Fewer released polygons would return to MUC M under the other alternatives. The advantage would be the greater applicability of notice level activity sampling less than 1,000 tons in MUC Moderate.

Impacts to Vehicle Access

The major effect on access that may occur as a result of the no Action Alternative 1 is the increased area of MUC M, relative to MUC L. Within MUC M, consistent with 43 CFR 8342.1 criteria, existing routes would be designated open unless specifically closed, whereas within MUC L, an approved route network would be identified. 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, topography, and the limited number of existing routes restrict access options. Where flexibility exists, MUC M could provide additional access. Within MUC M areas, motorized access in washes may be greater. Generally, the NEMO planning area does not have a substantial wash route network, but there would be released lands where washes do provide access, particularly in the lower elevations that connect to the larger riparian features. On a site-specific basis, 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 would be designated, consistent with the original CDCA Plan-, except in 17 locations where the MUC of the surrounding lands has been redesignated differently than the original MUC (the strategy for all lands under 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 and their Multiple Use Class by Alternative.

Impacts to Vegetation

Impacts would be similar to those described for Alternative 1 (No Action), except that 85,450 acres less would be assigned to MUC Moderate use. Thus, a notice in a small or rare habitat is less likely to occur than under Alternative 1.

Impacts to Wildlife

As with Alternative 1, 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 under Alternative 1. The differences between Alternative 1 and Alternative 2 are based on the relative size of MUC Moderate, where notices may be approved for smaller disturbances up to 1000 tons (see vegetation discussion above).

Impacts to Cultural Resources and Native American Values

Releasing lands from wilderness study status in conformance with the California Desert Protection Act is a plan conformance and maintenance action that would not affect cultural resources. MUC designations for released lands would return to designations in place at the time of the CDCA Plan, except for seventeen locations where the MUC would be redesignated consistent with surrounding lands or changes in circumstances. These changes include protection of sensitive cultural resources on lands, including locations that are part of a National Historic District. On 85,450 acres, reduced threats would occur relative to Alternative 1 due to the elimination of potential notice-level activities.

Impacts to Utilities

Impacts to utilities in the “Released Lands” Alternative would be the same as for the No Action Alternative (see 4.6.1.5).

Impacts to Minerals and Mining

Impacts would be similar to the No Action Alternative 1, because a change in multiple-use class would only affect notice-level activity involving sampling less than 1,000 tons. Under Alternative 2, an additional 85,450 acres in MUC L would result in an increased processing time (from 15 to 30 days) for sampling less than 1,000 tons. Operations proposing removal of more than 1,000 tons would be unaffected.

Impacts to Vehicle Access

Impacts of Alternative 2 would be the same as the No Action Alternative, except that the addition of 85,450 acres in MUC L could result in potential for additional limitations to access during route designation on those lands, consistent with 43 CFR 8342.1 criteria. On a parcel-by-parcel basis, this alternative would provide more access in 8 areas, and partially so in another 2 areas. It would provide less access in 5 areas, and partially so in another 2 areas.

4.6.3 Alternative 3. Proposed Plan - Released Lands

Released lands would be designated consistent with the original CDCA Plan, except in 11 locations where the MUC of the surrounding lands has 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. Table 2-10 in Chapter 2 lists the 41 released areas and the 11 that would be affected by the Proposed Plan.

Impacts to Vegetation

All lands addressed in the Proposed Plan would be managed as either MUC Limited use (392,920 acres) or MUC Moderate use (75,380 acres).

Impacts would be similar to those described for Alternative 1 (No Action) except that 76,970 acres less would be assigned to MUC Moderate Use. Thus, a notice in a small or rare habitat, and the potential vegetation, soils and habitat disturbance from such a notice (up to 1,000 tons of material may be removed), is proportionately less likely than under Alternative 1.

Impacts to Wildlife

As with Alternative 1 and 2, there would be no direct impacts to wildlife. For indirect impacts to habitat, 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

Analysis and effects would be similar to the No Action Alternative. Releasing lands from wilderness study status in conformance with the California Desert Protection Act is a plan conformance and maintenance action that would not affect cultural resources. MUC designations for released lands would return to designations in place at the time of the CDCA Plan, except for eleven locations where the MUC would be redesignated consistent with surrounding lands or changes in circumstances. These changes include protection of sensitive cultural resources on lands, including locations that are part of a National Historic District. On 76,970 acres, reduced threats would occur relative to Alternative 1 due to the elimination of potential notice-level activities.

Impacts to Utilities

Impacts from the Proposed Plan Amendment would be the same as for the No Action Alternative.

Impacts to Minerals and Mining

A change in multiple-use class would only affect notice-level activity (involving sampling under 1,000 tons). Under the Proposed Plan, an additional 76,970 acres in MUC L would result in an increased processing time (from 15 to 30 days) for sampling less than 1,000 tons. Operations proposing removal of more than 1,000 tons would be unaffected.

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 and Alternative 2. 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

The No Action Alternative would maintain 820 acres of BLM lands as a cultural ACEC with management continuing to follow prescriptions in the ACEC management plan. Cultural resources would continue to be managed for preservation and protection under the ACEC Management Plan, which, in addition to targeting specific locations outside of this area, includes general provisions for the documentation of resources, prohibition of camping, barrier erection, fire management, site monitoring and ranger patrol. There would be no effect on known significant cultural resources from this alternative.

Impacts to Recreation Resources and Activities

This No Action Alternative would not affect motorized touring, since the area contains very few routes of travel. The area would continue to be managed as an ACEC. The alternative includes a prohibition on camping within the ACEC, affecting overnight use and use adjacent to open routes. Some potential for this type of recreation exists, since it is located next to and north of Death Valley National Park.

Impacts to Minerals and Mining

The impacts to exploration and mining under the No Action Alternative would be similar to MUC Limited lands because the ACEC has not been withdrawn from mining. Specific measures may be added to prevent impact to cultural resources within the ACEC boundaries. The area in question has moderate potential for borates and zeolites, and current interest is high. Most cultural sites have been excluded from the ACEC with the passage of the California Desert Protection Act. Under ACEC guidelines, mining activity requires a plan of operations and minimum requirements of a 30-day processing time and posting a bond.

4.7.2 Alternative 2 (Proposed Plan Amendment) - Greenwater

Impacts to Cultural and Native American Values

Analysis and effects would be similar to the No Action Alternative. Alternative 2 would delete the Greenwater Canyon Cultural ACEC. The remaining 820 acres of BLM lands would be managed according to MUC "L" guidelines. Cultural resources would continue to be managed for preservation and protection, but would not be managed using a specific ACEC management plan. There would be no substantial change in effects on cultural resources with the Proposed Plan. However, resources (for survey, documentation, monitoring, protective measures, and other strategies) would not be committed to this area unless cultural resources are uncovered, such as during project evaluation, and could be redirected to areas that are known sensitive areas and are more at risk.

Impacts to Recreation Resources and Activities

Deleting Greenwater Canyon as an ACEC would result in somewhat increased recreational opportunity. The area would be managed under MUC Limited guidelines. The prohibition on overnight camping in the area would no longer be in effect and there would be increased camping opportunities since stopping, parking and camping would be allowed within 300 feet of routes (CDCA Plan Amendment, 1982).

Impacts to Minerals and Mining

Impacts would be slightly improved over the No Action Alternative 1. Both Alternatives (ACEC status and MUC L) have the same requirement of a plan of operations for activity beyond casual use, but this alternative would not require additional measures consistent with the ACEC Plan. Lands requiring special mitigation strategies in the ACEC plan to prevent impacts to important cultural or natural resources (that would have affected mining) would be now located within Death Valley National Park boundaries. Under Class L guidelines of this Alternative, mining activity requires a plan of operations and associated requirements of a 30-day processing time and posting a bond. Mining activities may be somewhat expedited without ACEC provisions to consider.

4.8 Organized Competitive Vehicle Events

4.8.1 Alternative 1 (No Action)

The No Action Alternative assumes that, for non-wilderness public lands outside of OHV areas designated “open”, BLM would continue to consider applications for “point-to-point” organized competitive vehicle events concerning MUC I, M and L lands. Approvals would be subject to provisions and stipulations. Figure 14 in Chapter 8, locates routes for race events of all alternatives. BLM would consider applications for the Barstow-to-Vegas racecourse shown on the Land Use Map for the California Desert Conservation Area Plan (CDCA Plan, 1980, as amended).⁴ Although the CDCA Plan names point-to-point events other than the B-to-V, those events do not fall within the NEMO planning area. For provisions, refer to the Recreation Element of the CDCA Plan, 1980, as amended, under “Organized Competitive Vehicle Events”.

In 1989, a Barstow-to-Vegas Race was conducted subject to special stipulations. In the history of this event, the 1989 race was the most carefully planned. A post race analysis of impacts was completed that focused on course width restrictions, spectator control, special flagging, and disqualification procedures. The post-event report found that, of 97 special stipulations in effect, 23 (24%) were not met (1989 Barstow to Vegas Post Race Report 1/25/90; see also EA CA-060-EA-90-01, Appendix II: Summary Monitoring Report Covering Races Held from 1983 through 1988).

Post-event monitoring indicated that non-compliance had impacted numerous resources directly, indirectly, and substantially; desert tortoise burrows included. The stipulated course through desert tortoise habitat was 25 feet wide. Monitoring showed that the average width of the disturbed area in tortoise habitat was 55 feet - or 6.6 acres disturbed per mile. Race vehicle straying off the course in tortoise habitat averaged 30 feet from the corridor boundaries (data from transects). Transect analysis, photographs, and direct BLM staff observations indicated that corridor flagging was not effective at minimizing the straying of racing vehicles.

One independent observer monitored the B-to-V event since 1974. In 1989, making no special search for them, six tortoise burrows were observed along a 3.8 mile cross-country racecourse segment in desert tortoise habitat (USGS 7.5-minute quadrangles Baker, Calif., West of Baker, Calif., Turquoise Mountain, Calif., Solomon Knob, Calif., and Valley Wells, Calif.). No burrows had been flagged. Three burrows seemed active, and one was within ten feet of the main race route (Personal observations, H. Wilshire (USGS), before, during and after the Nov. 25, 1989 race).

BLM can exercise its discretion to deny applications, particularly if the circumstances that led to the establishment of a competitive event course have changed. (U. S. District Court, SA CV 90-267-JSL). Formal and anecdotal evidence indicates that race events result in significant impacts to sensitive wildlife species and are inconsistent with the management objectives, responsibilities, or programs for the impacted lands. This evidence also indicates that anticipated impacts of such events, including cumulative effects from holding the events in previous years, would be unacceptably detrimental to threatened species and their habitats. (IBLA 91-155).

⁴ This alignment is no longer feasible due to the T&E listing of the desert tortoise and establishment of the Mojave National Preserve. These 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).

Impacts to Vegetation

General Vegetation: The EIS for the Proposed Barstow-Las Vegas Motorcycle Race (BLM 1974) described impacts on vegetation. The EIS referred to field studies that listed impacts to vegetation as; a) reductions in shrub density, b) reductions in shrub diversity, c) reductions in annual plant germination and flowering, d) reductions in annual plant diversity, and e) increases in noxious weeds. Through repeated use, competitive event courses substantially widen as a result of racers straying from the course (BLM 1990). Hall in 1980 reviewed the effects of off-road vehicle travel on vegetation. The mechanisms for vegetation change would be direct impacts, such as crushing of plants, and indirect impacts, such as compaction and movement of soil, promotion of weedy species through surface disturbance, soil erosion after loss of soil-holding cryptogamic crusts, loss of seeds in the soil, and reduction of soil moisture through compaction. Adams and Endo (1980), using serial photos and 26 sample plots found that after the 1974 Barstow-Las Vegas race, in the area of impact, 40% of the ground was covered by tracks. The area of disturbance had increased by 31% that year.

Impacts would be greatest at start and pit areas where there would be many spectators and support personnel in vehicles. However, spectators would be often widely dispersed along the course. Driving vehicles off authorized route networks would result in disturbances of vegetation over a wider area. Based on past races, it is likely that many riders would visit the race area and practice on the course in the weeks before a race. Event stipulations to limit cross-country travel could not be enforced at this time (BLM 1990).

Although most of these impacts, including soil profile disruption and compaction, germination and cover site modification, annual plant and shrub 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. Invasive annual plants common to the region also pose an increased potential for larger fires. Large and repeated fires in an area would result in vegetative type conversion, with shrub lands eventually becoming grasslands that can foster a regular fire regime.

In particular, based on monitoring after the 1989 Barstow to Las Vegas Event, straying and course widening occurred in areas outside desert tortoise habitat where the permitted course width was 100 feet. For example, the course width in the area to the west of a pit area was measured at 260 feet and near Solomon's Knob at several transects there were 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 Wander Mine has numerous large folds, 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 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. Motorcycles climbing the wash bank cut slots up to 8 inches wide and 10 inches deep. 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).

Special status plants: Commonly applied mitigation measures would prevent races on routes traversing known habitats of special status plants. Inventories of special status plants are incomplete.

Biological Soil Crusts: Compression and shear forces from vehicle tires of racers and spectators would disturb soil crusts. The crust response to these disturbances is variable, depending on soil moisture and depth of disturbance. Moist crusts would be 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 cyanobacteria. The overall result of burial would be a greatly degraded and simplified soil crust community. Because soil crusts would be absent in the roadway proper, the greatest impacts to crusts would occur where racers stray from the traveled route and where spectators and support vehicles travel off established roads.

Riparian/Wetland: Commonly applied mitigation measures would prevent 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: See the discussion above for General Vegetation.

Impacts to Wildlife

General Wildlife: Disturbances to vegetation would result in loss of forage, changes in forage species composition, and loss of cover from predators and weather (see discussion of impacts to General Vegetation above). In addition, animals could be run over above ground or crushed below ground in burrows. Soil compaction disrupts burrow suitability. In general, biodiversity would be reduced along race routes where vegetation and soil disturbances and changes occur.

Wildlife activities (e.g., foraging) would be disrupted by the noise and race activity. Disruptions would take place during the race event and during pre-race practice. The disrupting effects on animals would be largely related to the season. The effects of disruption would be most important in the spring and summer when animals are breeding, nesting, and rearing young and restricted to their territories. Displacement during these seasons could result in reproductive failure for that year. Changes in behavior could occur at any season. Such changes could include departure from or avoidance of the area.

Wildlife may be injured or killed by participant motorcycles or support vehicles during the races. Individual animals may be killed on roads leading to the start, finish, pits, and spectator areas by increased traffic. Large species, such as coyotes and kit foxes, would be temporarily displaced. Less mobile species, such as rodents or species inactive at this time of the year including many reptiles, would be vulnerable to crushing or entombment due to burrow collapse.

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

Special Status Animals: Where racing events pass through habitats of the desert tortoise, there is the potential for a killing or injuring them. The tortoise has the most extensive range of any listed species in the desert, and its habitat is difficult to avoid in course selection. The B-to-V passes through extensive portions of Category I desert tortoise habitat, much of which is also critical habitat. Other areas of tortoise habitat serve as linkages between tortoise populations.

Habitat loss, such as reduction of shrub cover by vehicular traffic, would make tortoises, especially hatchlings and juveniles, more susceptible to predation and death from exposure. This would reduce tortoise recruitment and eventually tortoise density.

Desert tortoises would be subject to both direct and indirect impacts associated with race activities. 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, but this would be unlikely, because races would be held during the tortoise aestivation season. The potential for tortoise activity during this time of year is low, but could occur if temperatures are unseasonably warm or if rainfall occurs immediately prior to the race. Tortoises active at the time of the event would be subject to vandalism or collection.

Mitigations to minimize killing or injuring listed animals (especially for desert tortoise) have included rider and spectator education, course marking, habitat damage reclamation, seasonal restrictions and physically removing tortoises from the racecourse immediately before and during the event by biologists. Sometimes spectators have been 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 riding in and around the course before the races. (BLM 1990)

Tortoises may also be crushed by the collapse of burrows. Flagging around tortoise burrows located in pre-event surveys would reduce direct impacts to burrows. However, such measures would not assure the prevention of direct impacts to burrows and possibly tortoises. For example, in the 1989 B-to-V race, racers impacted three of twelve burrows flagged in Nevada, but none of the flagged burrows in California (BLM 1990). There is concern that, despite pre-race inspections, all burrows potentially at risk would not be discovered and flagged. Several unflagged burrows were discovered during the 1989 post-race monitoring (BLM 1990). H. Wilshire (1989) made the following observation, "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) Mr. Wilshire 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 Mountain, Solomon's Knob, and Valley Wells 7.5' quadrangles.)

The extent of habitat disturbance is a key consideration in assessing the impacts of the B-to V race on the desert tortoise. The No Action Alternative would permit the race corridor to be 100 feet wide, except in areas where there is evidence of desert tortoise, and on roads and through washes. A 60-foot wide 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 disturbed per mile. (BLM 1990) An analysis of the monitoring data (transect data, photographs, and BLM staff observations) showed that flagging the race corridor in areas of tortoise presence, as determined by pre-event surveys, was not effective in minimizing the straying of vehicles. Racers did not remain within the corridor flagging. The resulting course at the end of the race was two to three times the stipulated width, with additional trails and individual tracks established well outside the main trail. Based on these monitoring results, it is likely that impacts to the desert tortoise and its habitat by straying and course widening would occur. The increased width would encourage future OHV use, which would result in additional take of tortoises and further degradation of habitats

Effects on other special status species would depend upon species' biology and behavior and race factors, such as season, number of participants, and speed. Sensitive species such as bighorn sheep, burrowing owls, and bats, would likely be affected by temporary displacement. This effect is more likely to be significant when the course approaches springs, yucca stands, boulder fields, caves, mines, and other rare special habitats. For bats and bighorn sheep, all seasons would be critical.

Impacts to Soil, Water and Air Resources

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

Vehicles would cause surface compaction and displacement of surface soils along the course and at all pits. Soil impacts associated with past events reduced desert pavement and increased development of soft, powder-like materials susceptible to erosion. Field investigations indicate that about 2,000 acres of desert habitat have been disturbed annually over the years the B to V race has been run. Some of this disturbance is to new areas because of course changes, but the majority of impacts happened on the existing course. Soil nutrient levels would be expected to decrease over the long term, due to the removal of the vegetative cover, from the churning of the soil by race traffic, and through the mixing of nutrient poor soils with 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. Refer to section 4.8.1.1 for detailed impacts of OHVs to soils.

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

Air quality 24-hour (PM₁₀) standards would be exceeded, based on measurements of particulates. The degree and length of the exceedance is based on 5 factors, the speed of the vehicles, the type of the vehicles, the soil type, the dryness of the area or surface, and the wind. Exposed bare ground, and long stretches of unpaved routes that run directionally coincident with the predominant wind direction will enhance wind erosion. 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 would be 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 would be 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. When corrective actions are taken, reductions in particulate (PM₁₀) emissions would result, consistent with current State Implementation Plans for areas not in conformity with standards of the Clean Air Act. The benefits accrue in particularly to the very young, elderly, and those with respiratory ailments, who are more sensitive to short-term exceedances in the standards. Dust was also found to be a major contributor to off-course straying due to impairment of rider visibility. Considerable dust raised by the passage of motorcycles and ATVs and subsequent settling of the dust up to 150 yards from the course was apparent in the Kingston wash area. In areas 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 could include speed limits, limits to the type of vehicles (lighter vehicles and fewer tires is better), and limiting dryness of the surface (either with water or other materials that temporarily bind the road surface, mandating the use of existing routes within the racecourse for events, active rehabilitation of straying and erosion impacts following events and maintenance of a single course within the racecourse for events.

Impacts to Cultural and Native American Values

In the No Action Alternative, competitive off-highway vehicle events would continue to be allowed on competitive recreation routes established through the CDCA Plan. Competitive races would threaten cultural resources, especially archaeological sites, through damage to artifacts and site integrity resulting from the breakage, chipping, horizontal movement, and vertical displacement of artifacts by the tires of off-road vehicles. This damage would also compromise the context and information potential about discrete use areas of a site. Event-specific NEPA analysis would be required prior to proposed competitive off-road vehicle events. Under the No Action Alternative, BLM would continue to review all projects for effects to cultural resources in accordance with the CDCA Programmatic Agreement and the Protocol at the time they would be proposed.

The Barstow to Las Vegas race corridor would continue to be available for competitive race events. Survey and cultural resource information for the race corridor is limited, and there are no recorded cultural resources located along the route. There would be no material change in the threat to, or preservation and protection of, cultural resources in this alternative. Cultural resources would continue to be threatened in areas authorized for competitive vehicle events, but there would be no significant reduction or increase in immediate threats to these resources. Over time, it is presumed that cultural resources would continue to be affected by on-going use from competitive events. There would be no measurable affect on some resources while others would experience a cumulative degrading of integrity and context over time. In this alternative, adverse effects to historic properties, as they would be identified, would be resolved in accordance with procedures outlined in the proposed amendment to the CDCA Programmatic Agreement. Event-specific EAs would be required for future competitive off-road vehicle events. The events would be reviewed in accordance with Section 106 of NHPA, as implemented in the BLM Statewide Protocol.

Impacts to Cattle Grazing and Allotments

There may be short-term disruption of on-going grazing activities in areas where races would be authorized through lease areas. The potential effect would depend upon level of and types of concurrent grazing activities. The use of range improvements by cattle 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 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

Motor-Vehicle Access-related Recreation: Recreation opportunities related to organized events of including the B-to-V race, would continue to be available along existing routes of travel in MUC I and M lands, subject to BLM designation of start, finish and spectator areas, and on MUC L routes subject to the parameters in the CDCA Plan, and specific mitigations of the permit. Pending BLM identification of “approved” routes of travel, and subject to CDCA provisions, stipulations and mitigations (see 2.9.1), such opportunities are limited to paved or maintained roads in MUC L lands. For recreation opportunity discussions, BLM currently makes no distinction between participants and spectators.

BLM would continue to consider applications for competitive use of the Barstow-to-Vegas racecourse shown on the Land Use Map (LUP) for the California Desert Conservation Area Plan (1980), exclusive of National Park Service lands⁵. Although the CDCA Plan names point-to-point events other than the B-to-V, those events are not in the NEMO planning area (See Chapter 8, Figure 14 for a map of B-to-V route alternatives, and, for provisions, see the Recreation Element of the CDCA Plan, 1980, as amended, under “Organized Competitive Vehicle Events”).

BLM can currently exercise its discretion to deny applications, particularly if circumstances that led to the establishment of a course have changed. (U. S. District Court, SA CV 90-267-JSL). The circumstances include those where an event(s) results in significant impacts to sensitive wildlife species and is inconsistent with the management objectives, responsibilities, or programs for the impacted lands. Such circumstances also include those in which it can be shown that the anticipated impacts of an event, including cumulative effects from holding the event in previous years, are unacceptably detrimental to a threatened species and its habitat. (IBLA 91-155).

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.

Other motor-vehicle related casual use and permitted recreation would be somewhat affected by competitive events, but the effects would not restrict long-term access to the planning area. The casual user may find that they do not have access to a particular route for a particular specified timeframe on a particular day, while a racing event is occurring. Other motor-vehicle related event permits would not be available on public lands in the vicinity of competitive course alignments and access routes to those alignments on that same day. These limitations are short-term, infrequent, and widely spaced over the planning area, and create an opportunity to watch the event, if the recreationist is interested in doing so. They tend to occur on well-publicized and holiday weekends. Routes identified for competitive events also experience increased use-levels and therefore may degrade somewhat, relative to other backcountry routes recreationists find in the planning area. Additional folding and widening in heavily used competitive routes has been documented in post race reports, and may make them less attractive to other recreationists.

Other Recreation Activities: These impacts are similar to those for the motorized recreationist. In the vicinity of course alignments and access routes for competitive events,, non-commercial and commercial non-motorized recreational activities on public lands would temporarily be unavailable, because competitive events would displace them, require them to be rescheduled, or render them impractical or infeasible. On affected public lands, opportunities for casual and dispersed recreation use include unimpeded hiking and horseback riding, the enjoyment of natural scenery, solitude, wildlife photography, and group ‘retreat ‘camping, as well as the ability to access desert sites. In some areas within a few miles of the course, noise levels from the race would disturb the solitude. Dust pollution may deter scenic values for the duration of the event, and camping may be more crowded in the vicinity of Clark Mountain and Valley Wells/Cima area. If permits are not issued for competitive motorized events, no displacement would occur.

⁵ 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)

Impacts to Vehicle Access

No additional vehicle access would be provided with the No Action Alternative. The condition of some open routes used for transportation purposes located in proximity to, or forming, a racecourse 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 racecourse size, specific racecourse 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.

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 used 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. Route designation in the desert tortoise subregions occurred, consistent with 43 CFR 8342.1, considering this information.

Impacts to Wilderness

Unanticipated impacts have affected Wilderness Study Areas during past Barstow-to-Vegas events and could impact adjacent designated wilderness areas if it were run today. These impacts have been in the form of shortcutting and intrusion in areas where the course used roads along the boundaries of WSAs. For example, the area outside of Pit 1 had 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.

Socioeconomic Impacts

Adverse socioeconomic impacts from Alternative 1 (No Action) would be 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. The past events attracted up to 4,000 to 5,000 people. A similar economic benefit is currently provided with non-competitive dual sport events. A slight degree of increased economic benefit over the current baseline from the sale of goods and services would likely be provided with this alternative.

Contacts with city governments and local businesses in the affected environment indicate few adverse impacts. The city of Barstow 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 much of their income is 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 of the year.

District 37 estimates that each racer spends approximately \$910 on this event, much but not all in adjacent communities. Expenditures are for bike race preparation, entry fees, fuel, lodging, food and gambling. Pit crew members are estimated to spend about \$600 each on food, fuel, lodging and gambling.

4.8.2 Alternative 2

Under Alternative 2, BLM would allow competitive events only in MUC I areas with an area designation of "OHV Open".

Impacts to Vegetation

General Vegetation: Changes in cover, density, and species composition resulting from disturbance and compaction of soil, destruction of microbiotic soil crusts, disruption of the seedbed, introduction of weedy plant species, and subsequent increases in fire frequency and size due to racing events (see Alternative 1 discussion) would only occur in OHV open areas and not in areas with other MUC classifications, because competitive vehicle events would not be permitted.

Special Status Plants: Damage to special status plants or their habitat from riders, support personnel, spectators, and pre-event riders outside of OHV open areas would not occur. Commonly applied mitigation measures would prevent races on routes traversing known habitats of special status plants within OHV Areas. Inventories of special status plant are incomplete.

Biological Soil Crusts: Disturbance of soil crusts from riders, support personnel, spectators, and pre-event riders would not occur, except on OHV open lands.

Riparian/Wetland: No impacts to riparian or wetland areas would occur because there are minimal riparian areas or wetlands present. If avoidance is not feasible, mitigation would be utilized consistent with regional standards.

Noxious Weeds: Noxious weeds would be promoted by racing activities only in OHV open areas.

Impacts to Wildlife

General Wildlife: There would be no disturbance, direct mortality, or habitat loss for wildlife as described in the No Action Alternative from the events and associated spectator and pre-riding activities outside of OHV open areas. Although it may take decades, soils and vegetation would eventually recover from past racing. These and other effects described more fully in Alternative 1 would not occur outside of OHV open areas. Some increase in disturbance of wildlife and habitat might occur in OHV open areas if more races would be added there. However, wildlife values would be low in OHV open areas.

Special Status Animals: Alternative 2 would benefit the desert tortoise and possibly other special status animals by removing potential for direct mortality from runovers, and by facilitating continued soil and vegetative recovery in areas without an OHV “open” designation. 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.

Impacts to Soil, Water and Air Resources

By removing the possibility of permitting race events outside of designated OHV open use areas, soil improvement would continue to occur unimpeded along the designated competitive racecourse. Some areas of the B-to-V course may need active reclamation 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 (see Alternative 1 discussion).

Impacts to Cultural and Native American Values

Alternative 2 would eliminate threats to cultural resources that are -located along the Barstow to Las Vegas race corridor, and confine cultural resource threats to MUC “I” areas designated open. This alternative would substantially reduce the threats to cultural resources from competitive vehicle events outside of OHV Open Areas. Cultural resources would continue to be threatened in OHV areas authorized for competitive vehicle events, but there would be no significant reduction or increase in immediate threats to these resources. Over time, it is presumed that cultural resources would continue to be affected by on-going use patterns from competitive vehicle events and other activities allowed within MUC “I” open areas. There would be no measurable effects on some resources, while others would experience a cumulative degrading of integrity and context over time. In this alternative, adverse effects to historic properties, as they are identified would be resolved in accordance with procedures outlined in the proposed amendment to the CDCA Programmatic Agreement.

Impacts to Cattle Grazing and Allotments

No impacts to grazing and allotments are anticipated from Alternative 2 because races would not occur on the allotments.

Impacts to Recreation Resources and Activities

Under Alternative 2, BLM would allow competitive events only in MUC I areas with an area designation of “open”.

Motor-Vehicle Access-related Recreation Activities: Competitive-events related opportunities would be impacted by Alternative 2. The Barstow-to-Vegas motorcycle race and other competitive events that may be applied for, consistent with CDCA Plan criteria, have not been run in the Northern and Eastern Mojave planning area since the listing of the desert tortoise in 1989. The opportunity to apply for such a race would be precluded under this alternative outside of OHV Open Areas (Dumont Dunes in the planning area). Negative impacts to other motor-vehicle recreationists would generally not occur, except for the potential of others being precluded as incidental spectators at these events. Opportunities for non-competitive events would continue to be somewhat higher outside of OHV Open areas, particularly on busy and popular holiday weekends. There will continue to be more users competing for same number of permits within all of the OHV Open areas. The impacts of Alternative 2 within the Dumont Dunes OHV Open area would increase because this would be the only nearby area available for OHV events.

Other Recreation Activities: Impacts to non-motorized recreationists would not occur in the vicinity of course alignments and access routes during and immediately preceding competitive-events, outside of OHV Open Areas.

Impacts to Vehicle Access

Impacts would be similar to the No Action Alternative, except the degree of route degradation and open route maintenance located in proximity to the B-to-V racecourse is anticipated to be lowest of all alternatives presented, because the racecourse would be limited to OHV open areas. Additional maintenance needs may be expected in OHV Open areas on routes with intense use for competitive events.

Impacts to Wilderness

Potential for unanticipated impacts that have affected Wilderness Study Areas during past Barstow-to-Vegas events and could impact adjacent designated wilderness areas would be substantially reduced. These impacts have been in the form of shortcutting and intrusion in areas where the course used roads along the boundaries of WSAs. If competitive events are limited to OHV Open areas, only WSAs and wilderness areas adjacent to OHV open areas with routes near their boundaries would be potentially at risk.

Socioeconomic Impacts

Communities along racecourses, particularly Barstow and Baker, would lose some economic benefit from the sale of goods and services. When it was run prior to 1990, the largest event, the B-to-V, attracted 4,000 to 5,000 individuals (see discussion under Alternative 1).

4.8.3 Alternative 3

This action would amend the Multiple Use Class Guidelines and the Recreation Element of the CDCA Plan to include additional criteria for point-to-point motorized vehicle events on all lands outside of OHV open areas (See 2.9.3). These criteria would be similar to the existing criteria in the CDCA Plan, and expand them to cover all MUC outside of OHV Open Areas, rather than just the MUC Limited areas.

Impacts to Vegetation

General Vegetation: Within DWMAAs (i.e., desert tortoise ACECs), impacts would be the same as Alternative 2, because racing would not be allowed in ACECs. Impacts would be similar to those described in Alternative 1 outside of ACECs, but important sensitive plant communities (e.g., riparian, playas) would be avoided: changes in cover, density, and species composition resulting from disturbance and compaction of soil, destruction of microbiotic soil crusts, disruption of the seedbed, introduction of weedy plant species, and subsequent increases in fire frequency and size due to racing events would occur (see Alternative 1 discussion).

The criteria for any competitive event outside of an OHV open area 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 vegetation and soils along segments of the B-to-V course that meet these criteria would be slowed, halted or reversed with renewed competitive event use.

Special Status Plants: Within desert tortoise and other ACECs, impacts would be the same as Alternative 2, because there would be no racing in ACECs. Outside of ACECs, critical habitat of listed plants and known habitat of all special status plants, to the extent known, would be avoided in course selection and other commonly applied mitigation measures. Inventories of special status plant are incomplete.

Biological Soil Crusts: Impacts would be similar to those described in Alternative 1, but they would occur outside of desert tortoise and other ACECs. They include disturbance of soil crusts from riders, support personnel, spectators, and pre-event riders.

Riparian/Wetland: Riparian and wetland areas would be avoided in course selection, if feasible. If avoidance is not feasible, mitigation would be utilized consistent with regional standards.

Noxious Weeds: Impacts from Alternative 3 would be similar to those described in Alternative 1, but they would occur outside of desert tortoise and other ACECs. Noxious weeds would be promoted by racing activities where racing occurs (see Alternative 1 discussion under General Vegetation).

Impacts to Wildlife

General Wildlife: Within DWMAAs (i.e., desert tortoise ACECs), impacts would be the same as Alternative 2 because racing would not be allowed in ACECs, and similar to Alternative 1 in the rest of the planning area in MUC I, M, and L, consistent with the criteria. There would be no disturbance, direct mortality, or habitat loss for wildlife as described in the No Action Alternative from the events and associated spectator and pre-riding activities in ACECs. Although it may take decades, soils and vegetation would eventually recover from past racing. These and other effects described more fully in Alternative 1 would not occur in ACECs. Impacts would be similar to those described in Alternative 1 (No Action Alternative) outside of ACECs but important sensitive wildlife habitats (e.g., bighorn lambing and watering areas) would be avoided.

Special Status Animals: Within DWMAAs (i.e., desert tortoise ACECs), impacts would be the same as Alternative 2, because racing would not be allowed in ACECs, and the same as Alternative 1 in the rest of the planning area in MUC I, M, and L, consistent with the criteria. This would benefit the desert tortoise and possibly other special status animals by removing potential for direct mortality from runovers, and by facilitating continued soil and vegetative recovery in desert tortoise ACECs. 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. Outside of ACECs areas of lower tortoise density, including linkages between desert tortoise ACECs would continue to receive impacts as described in Alternative 1. Special habitat features (e.g., caves, abandoned mines) that have not been identified would remain at risk.

The criteria for any competitive event outside of an OHV open area 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.

Impacts to Soil, Water and Air Resources

Impacts under Alternative 3 would be the same as Alternative 1. Soil damage, increased erosion potential, gullies, and soil loss caused by the loss of vegetative cover would continue to occur, or not be repaired in areas where races are permitted. Moderate increases in short-term air quality impacts would be anticipated outside of desert tortoise and other ACECs as a result of racing activity (see Alternative 1 discussion).

Impacts to Cultural and Native American Values

Under Alternative 3, the Barstow to Las Vegas race course would be eliminated. This alternative would reduce threats to cultural resources located along the Barstow to Las Vegas race course to the extent that portions of the course no longer meet the criteria for a competitive event. Other portions of the existing B-to-V course could meet the criteria, and be used as portions of an overall criteria-based course. Elimination of the Barstow to Las Vegas race course would not measurably reduce the threats to cultural resources from competitive vehicle events. Cultural resources would continue to be threatened in all areas authorized for competitive vehicle events. There would be no significant reduction or increase in immediate threats to these resources. Over time, it is presumed that cultural resources would continue to be affected by on-going use patterns from competitive vehicle events and other activities. There would be no measurable affect on some resources, while others would experience a cumulative degrading of integrity and context over time. In Alternative 3, adverse effects to historic properties as they would be identified would be resolved in accordance with procedures outlined in the proposed amendment to the CDCA Programmatic Agreement.

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: There may be short-term disruption of on-going grazing activities in areas where races would be authorized through lease areas. The potential effect would depend upon level of and types of concurrent grazing activities. The use of range improvements by cattle 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 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

Motor-Vehicle Access-related Recreation Activities: Opportunities for competitive events would continue, as they are now in OHV open areas, and on all lands outside of open areas, regardless of MUC, except in sensitive areas such as desert tortoise ACECs and other ACECs. In actual practice, it may become easier to site a race under this alternative than under Alternative 1, if an adequate route network exists and when the completion of routes of travel designation in the planning area is accomplished, by 2004. BLM would allow such events to be conducted on routes designated as "open", subject to specific criteria. Racecourse use would be limited to "existing" route widths, specific starting areas within MUC "I" "open" areas, with defined finish and spectator sites within MUC "M" or "I" areas. Only support crews would be allowed in the pit areas. Restrictions include; participation being limited to 500 entrants, motorcycles and ATVs, timed-start conditions would prevail, and 100 entrants maximum would be allowed per starting wave.

Other motor-vehicle related casual use and permitted recreation would be somewhat affected by competitive events, but the effects would not restrict long-term access to the planning area. The casual user may find that they do not have access to a particular route for a particular specified timeframe on a particular day, while a racing event is occurring. Other motor-vehicle related event permits would not be available on public lands in the vicinity of competitive course alignments and access routes to those alignments on that same day. These limitations are short-term, infrequent, and widely spaced over the planning area, and create an opportunity to watch the event, if the recreationist is interested in doing so. They tend to occur on well-publicized and holiday weekends. Routes identified for competitive events also experience increased use-levels and therefore may degrade somewhat, relative to other backcountry routes recreationists find in the planning area. Additional folding and widening in heavily used competitive routes has been documented in post race reports, and may make them less attractive to other recreationists.

Other Recreation Activities: These impacts are similar to those for the motorized recreationist. In the vicinity of course alignments and access routes for competitive events, non-commercial and commercial non-motorized recreational activities on public lands would temporarily be unavailable, because competitive events would displace them, require them to be rescheduled, or render them impractical or infeasible. On affected public lands, opportunities for casual and dispersed recreation use include unimpeded hiking and horseback riding, the enjoyment of natural scenery, solitude, wildlife photography, and group 'retreat 'camping, as well as the ability to access desert sites. In some areas within a few miles of the course, noise levels from the race would disturb the solitude. Dust pollution may deter scenic values for the duration of the event, and camping may be more crowded in the vicinity of Clark Mountain and Valley Wells/Cima area. If permits-are not issued for competitive motorized events, no displacement would occur.

Impacts to Vehicle Access

Impacts are similar to the No Action Alternative 1. No additional vehicle access would be provided. If this alternative is selected, this use would be considered in conjunction with subregion route designations as they proceed, in locations where it is appropriate to do so, consistent with 43 CFR 8342.1. The condition of open routes used for transportation purposes located in proximity to, or forming, the race courses, could become degraded over time as a result of competitive events and spectator impacts. The severity of impacts would depend upon the nature of the competitive events, i.e., motorcycle or ATV quad, allowed course size, specific course segment, frequency and timing. The degree of open route maintenance associated with this alternative is anticipated to be higher than Alternative 2 and 4.

Impacts to Wilderness

Impacts are the same as the No Action Alternative. Unanticipated impacts have affected Wilderness Study Areas during past Barstow-to-Vegas events and could impact adjacent designated wilderness areas under this alternative. These impacts have been in the form of shortcutting and intrusion in areas where the course used roads along the boundaries of WSAs. Measures would be in place to avoid impacts to designated wilderness areas.

Socioeconomic Impacts

Impacts would be the same as Alternative 1. The past events attracted up to 4,000 to 5,000 people, and it is anticipated that with 500 participants and ancillary support personnel, and spectators, races could attract that many on holiday weekends again.

4.8.4 ALTERNATIVE 4

Under this alternative, in accordance with 43 CFR 8342.1, to promote the safety of all users of the public lands, minimize conflicts among various users of the public lands, minimize damage to resources of the public lands, minimize significant disruption of wildlife habitats, and minimize conflicts between OHV use and other existing or proposed recreational uses of the same or neighboring public lands, BLM would “designate” a replacement Barstow-to-Vegas race course and allow one such event per year. An attendant agency liability exposure (participant, spectator and unassociated public visitors) would be implicit in such a designation.

Consistent with Alternative 3 criteria, the event would avoid critical desert tortoise habitat, ACECs, wilderness areas and other sensitive resources. Instead of the traditional B-to-V alignment, the replacement course alignment would include a portion of an east-west travel corridor legislated for vehicle travel by the California Desert Protection Act. For its full length, the corridor is bordered on both sides by the Kingston Range Wilderness, including a portion in Kingston Wash. Through its requirement to set wilderness boundary locations, applying standard policy criteria, BLM has offset wilderness boundaries 30 feet both ways from centerline of the corridor.

In a departure from the Alternative 3 criteria, for all point-to-point competitive events, BLM would have the discretion to expand the course width to as much as 100 feet where the Authorized Officer finds no evidence of sensitive resources in areas identified and so specified in the permit for the event.

In a second departure from the Alternative 3, for all point-to-point competitive events, BLM would allow the course to pass through an ACEC on a route designated as “open” if the applicable ACEC management plan clearly states that the route may be used for the named event, and all other conditions identified in the ACEC management plan are met. If the ACEC lands concerned also fall within the boundary of a wilderness study area, approval of a competitive event course using such lands remains subject to public lands withdrawal provisions of the California Desert Protection Act (1994, Sec. 104 (c)), and to regulations requiring that wilderness suitability not be impaired (43 CFR 8342.1(a)).

Impacts to Vegetation

General Vegetation: Impacts would be similar to those described for Alternative 3, because some events would still be held outside of OHV open areas.

Special Status Plants: Impacts would be similar to those described for Alternative 3, because some events would still be held outside of OHV open areas.

Biological Soil Crusts: Impacts would be similar to those described for Alternative 3, because some events would still be held outside of OHV open areas.

Riparian/Wetland: Racing in Kingston Wash would disturb riparian habitat, and possibly reduce the vertical vegetative structure that is important for neotropical migrant birds.

Noxious Weeds: Impacts would be similar to those described for Alternative 3, because some events would still be held outside of OHV open areas.

Impacts to Wildlife

General Wildlife: Effects would be similar to Alternative 3 because some events would still be held outside of OHV open areas. However, with placement of a race in Kingston Wash, additional impacts to riparian habitat in Kingston Wash would be likely.

Special Status Animals: Impacts would be similar to those described for Alternative 3, because some events would still be held outside of OHV open areas. With Alternative 4, there is a likelihood of direct tortoise mortality and burrow crushing by competitive events held in a narrow wash like Kingston Wash.

Impacts to Soil, Water and Air Resources

Impacts would be similar to Alternative 3. Kingston Wash soils have a relatively low potential for wind erosion and general lower suspension potential based on their larger size (higher sand vs. silt component) in comparison to the original Barstow-to-Vegas course, along the Boulder utility corridor. Therefore, in this area, air quality impacts would be lower.

Impacts to Cultural and Native American Values

Under Alternative 4, most portions of the Barstow to Las Vegas race course would be eliminated (some of the course outside of desert tortoise critical habitat and outside of the planning area would not be eliminated), and an alternative route would be developed through the Kingston Wash wilderness north of the current race course. Alternative 4 would greatly reduce threats to cultural resources that would be located along the Barstow to Las Vegas race course in the planning area, but would increase threats to cultural resources in the newly proposed course. The Kingston Wash corridor, which is included in the course, contains two recorded significant cultural resources that appear to qualify for inclusion on the National Register of Historic Places.

Cultural resources would continue to be threatened in all areas authorized for competitive vehicle events, but there would be no substantial change from the No Action Alternative in the nature and level of threats to these resources. Over time, it is presumed that cultural resources would continue to be affected by use from competitive vehicle events and other activities. There would be no effect on some resources while others would experience a cumulative degrading of integrity and context. In this Alternative 4, adverse effects to historic properties as they are identified would be resolved in accordance with procedures outlined in the proposed amendment to the CDCA Programmatic Agreement.

Impacts to Cattle Grazing and Allotments

This revised alignment would result in less potential disruption to cattle grazing than the current course because it would traverse a smaller portion of active allotments. If permitted, there may be continued disruption of grazing operations and associated activities before, during and after the event.

Impacts to Recreation Resources and Activities

Motor-Vehicle Access-Related Recreation Activities: Alternative 4 is the same as Alternative 3, except that a BLM-designated replacement course for the Barstow-to-Vegas Race would become a component of proposals for a reinstated event by that name. As a result, competitive event-related opportunities accompanying this specific event would increase substantially, rather than for other criteria-based events on designated “open routes” as identified in Alternative 3. BLM’s Authorized Officer would have the discretion to expand alternative course width to as much as 100 feet where there is no evidence of sensitive resources, and may route the event through an ACEC upon approval through an ACEC plan. The affects on other motor-vehicle recreationists would be the same as for Alternative 3, except that an identified route would limit the potential scope of negative impacts to other users.

Other Recreation Activities: Alternative 4 would be the same as for Alternative 3. In the Kingston Wash corridor, and other areas along the replacement course, non-motorized recreation opportunities, could diminish in the short-term because they would be disrupted, displaced in time or geography, and/or rendered impractical or infeasible by incompatible recreation activities inherent in the conduct of competitive motor vehicle events.

Impacts to Vehicle Access

Impacts from Alternative 4 are similar to Alternative 3. 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, since more restrictions or fewer routes to be used are proposed.

Socioeconomic Impacts

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

4.8.5 Alternative 5 (Proposed Plan)

The proposed plan is to limit competitive motor-vehicle events to OHV Open Areas and race courses specified recreation routes delineated and designated in the CDCA Plan 1980. The Barstow-to-Vegas race course would be eliminated. Environmental impacts from the Proposed Plan would be the same as Alternative 2, except that BLM could allow competitive events to be held on specified recreation routes subsequently delineated and designated through the planning process. New proposals are currently being developed for the Barstow-to-Vegas race course. If this, or another course, is designated, impacts along the course would be similar to Alternative 1, depending upon its location.

Impacts to Vegetation

General Vegetation: Changes in cover, density, and species composition resulting from disturbance and compaction of soil, destruction of microbiotic soil crusts, disruption of the seedbed, introduction of weedy plant species, and subsequent increases in fire frequency and size due to racing events (see Alternative 1 discussion) would only occur in OHV open areas and not in areas with other MUC classifications, because competitive vehicle events would not be permitted. If another course is designated through the plan amendment process, impacts along the course would be similar to Alternative 1, depending upon its location.

Special Status Plants: Damage to special status plants or their habitat from riders, support personnel, spectators, and pre-event riders outside of OHV open areas would not occur. Commonly applied mitigation measures would prevent races on routes traversing known habitats of special status plants within OHV Areas. If another course is designated through the plan amendment process, impacts along the course would be similar, depending upon its location.

Biological Soil Crusts: Disturbance of soil crusts from riders, support personnel, spectators, and pre-event riders would not occur, except on OHV open lands.

Riparian/Wetland: No impacts to riparian or wetland areas would occur because there are minimal riparian areas or wetlands present. If avoidance is not feasible, mitigation would be utilized consistent with regional standards.

Noxious Weeds: Noxious weeds would be promoted by racing activities only in OHV open areas.

Impacts to Wildlife

General Wildlife: There would be no disturbance, direct mortality, or habitat loss for wildlife as described in the No Action Alternative from the events and associated spectator and pre-riding activities outside of OHV open areas. Although it may take decades, soils and vegetation would eventually recover from past racing. These and other effects described more fully in Alternative 1 would not occur outside of OHV open areas. Some increase in disturbance of wildlife and habitat might occur in OHV open areas if more races would be added there. However, wildlife values would be low in OHV open areas.

Special Status Animals: Alternative 5 would benefit the desert tortoise and possibly other special status animals by removing potential for direct mortality from runovers, and by facilitating continued soil and vegetative recovery in areas without an OHV “open” designation. 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.

Impacts to Soil, Water and Air Resources

By removing the possibility of permitting race events outside of designated OHV open use areas, soil improvement would continue to occur unimpeded along the designated competitive racecourse. If another course is designated through the plan amendment process, impacts along the course would be the similar to Alternative 1, depending upon its location.

Some areas of the B-to-V course may need active reclamation 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 (see Alternative 1 discussion).

Impacts to Cultural and Native American Values

Alternative 5 would eliminate threats to cultural resources that are -located along the Barstow to Las Vegas race course, and confine cultural resource threats to MUC “I” areas designated open. If another course is designated through the plan amendment process, impacts along the course would be the similar to Alternative 1, depending upon its location.

This alternative would substantially reduce the threats to cultural resources from competitive vehicle events outside of OHV Open Areas. Cultural resources would continue to be threatened in OHV areas authorized for competitive vehicle events, but there would be no significant reduction or increase in immediate threats to these resources. Over time, it is presumed that cultural resources would continue to be affected by on-going use patterns from competitive vehicle events and other activities allowed within MUC “I” open areas. There would be no measurable effects on some resources, while others would experience a cumulative degrading of integrity and context over time. In this alternative, adverse effects to historic properties, as they are identified would be resolved in accordance with procedures outlined in the proposed amendment to the CDCA Programmatic Agreement.

Impacts to Cattle Grazing and Allotments

No impacts to grazing and allotments are anticipated from Alternative 5 because races would not occur on the allotments.

Impacts to Recreation Resources and Activities

Under Alternative 5 BLM would allow competitive events only in MUC I areas with an area designation of “open”.

Motor-Vehicle Access-related Recreation Activities: Competitive-events related opportunities would be impacted by Alternative 5. The Barstow-to-Vegas motorcycle race and other competitive events that may be applied for, consistent with CDCA Plan criteria, have not been run in the Northern and Eastern Mojave planning area since the listing of the desert tortoise in 1989. The opportunity to apply for such a race would be precluded under this alternative. Another course may be designated through the plan amendment process, in which case, impacts to competitive recreation use would be the similar to Alternative 1, depending upon the outcome of the planning process. Negative impacts to other motor-vehicle recreationists would generally not occur, except for the potential of others being precluded as incidental spectators at these events. Opportunities for non-competitive events would continue to be somewhat higher outside of OHV Open areas, particularly on busy and popular holiday weekends. There will continue to be more users competing for same number of permits within all of the OHV Open areas. The impacts of Alternative 5 within the Dumont Dunes OHV Open area would increase because this would be the only nearby area available for OHV events.

Other Recreation Activities: Impacts to non-motorized recreationists would not occur in the vicinity of course alignments and access routes during and immediately preceding competitive-events, outside of OHV Open Areas.

Impacts to Vehicle Access

Impacts would be the same as Alternative 2. The degree of route degradation and open route maintenance located in proximity to the B-to-V racecourse is anticipated to be lowest of all alternatives presented, because the racecourse would be limited to OHV open areas. Additional maintenance needs may be expected in OHV Open areas on routes with intense use for competitive events.

Impacts to Wilderness

Potential for unanticipated impacts that have affected Wilderness Study Areas during past Barstow-to-Vegas events and could impact adjacent designated wilderness areas would be substantially reduced. These impacts have been in the form of shortcutting and intrusion in areas where the course used roads along the boundaries of WSAs. If competitive events are limited to OHV Open areas, only WSAs and wilderness areas adjacent to OHV open areas with routes near their boundaries would be potentially at risk.

Socioeconomic Impacts

Communities along racecourses, particularly Barstow and Baker, would lose some economic benefit from the sale of goods and services. When it was run prior to 1990, the largest event, the B-to-V, attracted 4,000 to 5,000 individuals (see discussion under Alternative 1).

4.9 Motor Vehicle Access: Routes of Travel Designation

4.9.1 Alternative 1 (No Action)

Under this alternative 94.3 percent of the routes on public lands (routes on private lands are unclassified in all alternatives) in a route network of approximately 850 miles would be designated open in the desert tortoise subregions, including major washes. Stopping, parking, and camping would continue to be allowed in disturbed areas within 300 feet of centerline along open routes as a general rule. The Authorized Officer could further limit stopping, parking or camping to 100 feet of centerline in specific sensitive areas, as identified, consistent with the CDCA Plan. Route designation has occurred consistent with CDCA Plan guidance and 43 CFR 8340 *et seq.* and reflects protective closures and decisions for this area that have taken place to date to protect desert tortoise and other biological values. This reflects route designation efforts associated with the CDCA Plan and updates based on the 1982 amendments and reflected in the Desert Access Guides. The decisions reflect the application of route designation criteria in the 1980's, prior to desert tortoise listing, with a goal to minimize conflicts between sensitive resources and maintain consistency with fallback standards. Closed and limited routes consist of previously closed lakebeds to protect other recreational and commercial pursuits and a few routes that have been managed as closed (by Federal Register notice) since 1979, specifically to protect desert tortoise values, and have been shown as closed on DAGs or not shown on inventory or DAG maps at all. These include motorcycle routes and small navigable washes that would not be available in the desert tortoise subregions, based on the goals of the area and consistency with standards. One of these is a relatively well-known motorcycle route that has seen light usage since the Barstow-to-Vegas was discontinued.—Route designation in the remainder of the planning area would be completed by the end of June 2004 or as otherwise agreed to in C-00-0927-WHA and would include additional public input and review.

Impacts to Vegetation

General Vegetation: Plants 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, and activities associated with vehicle travel. Although plants such as creosote, jojoba and yucca are large bushes, unusual plant assemblages or botanical features are often difficult to see. When sensitive vegetation is localized next to routes, a high potential exists for soil and plant damage.

Despite the low use, routes by their very nature have some level of denudation and compacted soils. Although the total area denuded of vegetation by roads may be small, there are a variety of other effects of vehicle use on the vegetation community. Among these are the following:

- Alterations in surface water flow and percolation, especially where the roadbed is not at grade level (Trombulak and Frissell 2000)
- An increase in overall plant height, plant biomass, and foliage arthropods through “water harvesting” adjacent to compacted roadbeds (Johnson *et al.* 1975, Vasek *et al.* 1975b), yielding an overall increase in vegetation production, even after considering the denudation of the roadbed
- Providing a corridor of dispersal for some species of noxious weeds (Trombulak and Frissell 2000)
- Loss of native vegetation due to driving off of roads for camping or parking
- Loss of vegetation due to illegal cross-country travel off of approved routes
- Fires that are started by visitors

Several annotated bibliographies address the effects of roads on vegetation and natural communities; among these are Boarman 1999, Rowland 1980, Spellerberg and Morrison 1989, Webb and Wilshire 1978. Trombulak and Frissell (2000) reviewed the literature on ecological effects of roads, and Lovich and Bainbridge (1999) reviewed a variety of degrading activities, including roads. These bibliographies and literature reviews elaborate on the effects listed above, provide additional literature, and describe other effects of roads.

Future vegetation disturbances to non-route areas in the planning area would be reduced under this alternative. In areas where use increases, advertent and inadvertent route proliferation may result, with accompanying disturbances to vegetation and natural communities. Urban growth adjacent to this area is projected over the next twenty-five years, and establishment of a route network would reduce potential for these additional disturbances.

Special Status Plants: No new negative impacts to sensitive vegetation are anticipated to occur as a result of the No Action Alternative for motor vehicle access. Indirect adverse impacts to sensitive vegetation would include the potential for disturbances from vehicle travel, parking, camping and intentional route proliferation. These activities would cause soil disturbances that over time could affect 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 responses to disturbance are highly variable. Cyanobacteria are the most resistant to disturbances. They are mobile and can recolonize disturbed surfaces rapidly. Lichens vary in resistance, depending on type. Mosses have a high susceptibility to disturbance. Lichens and mosses are susceptible to burial. Disturbances result in a reduced lichen and moss flora, and as a response, cyanobacteria may increase and replace the lichens and mosses reducing species diversity. Biological crusts on sandy soils are less susceptible to disturbances when moist or wet. Clay soils are less susceptible to disturbances when crusts are dry. Site-specific impacts to biological soil crusts may occur. Management mitigations would protect impacted sites.

Riparian/Wetlands: A few springs located throughout the planning area have been influenced over the years by vehicle use, camping, parking and route proliferation.

Noxious Weeds: The only known direct impacts to invasive non-native species as a consequence of the No Action Alternative for vehicle access would be the potential of exotic plants to become established and spread over time along road shoulders. Invasive plant species common to the planning area grow well on disturbed sites. They tend to thrive in high nitrogen soils, but are not completely limited by low-nitrogen. Their seeds are easily transported to new areas. They often become established in low numbers in disturbed soil areas such as road shoulders, spreading rapidly following roads and trails. Often, the invasive plants can out-compete and displace native vegetation. The aggressive ability of these plants to become established along high use routes poses a high potential for exotic plant displacement of native species in the vicinity of heavily used areas. Impacts would be considered negative overall and wide spread in occurrence.

Impacts to Wildlife

General Wildlife: The type, intensity and frequency of vehicle use can result in direct accidental and intentional impacts to wildlife. Adverse impacts to wildlife species residing or traveling near routes may or may not occur over time, and vary in degree, dependent upon route use intensity, as well as species density and season.

Haskell (1999) found that along roads in forests in the Southern Appalachian Mountains, soil macroinvertebrates increased both in abundance and species richness with distance from the road. Macroinvertebrates provide food for snakes, lizards, and birds (e.g., Bendire's thrasher and LeConte's thrasher) and aid in the release of soil nutrients. Similar effects along roads in the desert have not been confirmed, but ecosystem processes in tortoise habitat could be affected by motor vehicle access.

Special Status Animals: The desert tortoise is the only known threatened and endangered 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 sightings of desert tortoises, wildlife and plant communities in the vicinity of 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 wildlife species and habitats.

The simple presence of a vehicle route in desert tortoise habitats does not equate to specific direct impacts, 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 routes can cause accidental or intentional impacts.

Nicholson (1978) and LaRue (1992) found that populations were suppressed along paved highways and that tortoise sign increased with distance from the highway. Recognizably, an individual dirt road or way carries only a fraction of the traffic of a highway, and vehicle speeds are lower. However, the unpaved route network is much larger and includes extensive wash systems in some areas. On compacted roads, water accumulates in depressions, and tortoises are often seen drinking from them during the day. Although not quantified, this makes them more vulnerable to death or injury from run-over after rains.

In addition, there are numerous indirect effects resulting from the use of roads. On his plots alongside highways, LaRue (1992) recorded "detectable disturbances." In this category he found evidence of 1) cross-country travel by vehicles; 2) dogs; 3) humans on foot; 4) trash dumping and litter; 5) shooting [rifle and shotgun shells]; and 6) fires. These "detectable disturbances" can increase, respectively, 1) crushing of tortoises and burrows and loss of vegetation used for food and cover; 2) predation and injury to tortoises; 3) collecting tortoises; 4) raven numbers and predation on tortoises; 5) direct mortality of tortoises from shooting; and 6) direct mortality of tortoises from fire, destruction of tortoise forage and cover, and promotion of less nutritious weedy plants. Boarman (1999) reviewed the literature on the impacts of roads on tortoises. Shooting is one of the factors that does not appear to play much a role in the planning area at this time.

Jennings (1997) studied tortoise use of various habitat strata at the Desert Tortoise Natural Area. He found that tortoises used washes, washlets, and hills almost exclusively, and avoided flats. During each of three plant phenological periods, the primary food of tortoises were found along the margins of washes and washlets, and overall >25% of all the plants on which tortoises fed were in the washes and washlets even though these areas comprised only about 10% of the area. During the third phenological period (1 to 30 June), when the weather was hot and dry, sixty eight percent of the tortoises that were above ground ate mostly along washes and washlets. Overall, of the ten most-preferred plants species, three were largely confined to washes. Jennings concluded that tortoises were vulnerable to negative effects from off-highway vehicle use in washes because of their habitat preferences.

Woodbury and Hardy 1948, Burge 1978, and Baxter 1988 demonstrated that tortoises use washes and washlets for travel, burrowing, nesting, and feeding. The disproportionate time spent in these areas makes tortoises vulnerable to being run over by vehicles that use the washes for travel routes. Off-highway vehicles can also negatively impact washes through disturbances of soil and terrain causing deterioration or denudation of vegetation (Burge 1983, Woodman 1983, Goodlett and Goodlett 1993) and destruction of wash margins as washes are widened over time (Berry *et al.* 1986). These effects reduce the tortoise's preferred food and cover sites.

Therefore, the impact of route designation of washes is somewhat mixed in the desert tortoise subregions. For 55 miles of major washes on the CDCA Plan inventory maps and DAGs, impacts are potentially negative to desert tortoises as the routes were open or limited, consistent with previous designations. However, secondary washes and washlets were not in the inventories in desert tortoise subregions and are therefore non-routes and closed. For these washes and washlets, impacts from route designation on desert tortoise are positive.

Fragmentation of desert tortoise habitats related to the No Action Alternative for vehicle access is thought to be slightly higher than that related to the other alternatives. However, information pertinent to tortoise habitat and population fragmentation related to vehicle and route use is sparse.

Impacts to Soil, Water and Air Resources

OHV impacts to undisturbed soils can occur within relatively short periods. 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 and aeolian erosion rates) within the confines of the now existing routes would be relatively small. Impacts can vary depending on different kinds of vehicles, duration of vehicle use livestock grazing (cattle often trail adjacent to vehicle routes), weather etc.

Some of the "existing" routes in the planning area have been present for 5 to 50 years or more. Further direct soil impacts within the disturbed soil confines of these routes is considered unlikely, though accelerated erosion could occur in the future, dependent on type, intensity and frequency of vehicle use, affected terrain and soil strata, and the season.

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.

Future soil impacts to non-route areas in the planning area would be reduced under this alternative. In areas where use increases, advertent and inadvertent route proliferation may result, with accompanying soil disturbances, erosion, and compaction. Urban growth adjacent to this area is projected over the next twenty-five years, and establishment of a route network would reduce potential for these addition soil impacts.

Impacts to Cultural and Native American Values

Designating a route "open" in the CDCA under the No Action Alternative would create a 600 ft wide Area of Potential Effect (APE) for cultural resources. In ACECs, this area may be limited to 100 ft on either side of the centerline (200 ft wide APE). Casual and non-competitive vehicle activities can adversely affect archaeological and historic resources. Effects range from inadvertent destruction from tires, camping, and other uses, to increased access to sensitive sites, resulting in looting and vandalism of artifacts, rock art, traditional cultural properties, etc.

Under the No Action Alternative for vehicle access, current management prescriptions would continue. Approximately 94.3 percent of routes would be designated “open” in desert tortoise subregions. For the remainder of the planning area, the majority of routes would also be anticipated to be designated open, prior to the end of June 2004, and available for vehicle use until that time. Impacts to cultural resources would be evaluated on a case-by-case basis for each route in accordance with the CDCA Programmatic Agreement and Protocol. The No Action Alternative would result in no significant change in the use or availability of these routes for motor vehicles, nor result in a significant reduction or increase in threats to cultural resources, beyond the conditions that have existed over the past 40 years. It is important to note that almost all of the routes in the planning area were in existence at the time the CDCA Plan was approved, and many of these routes date back to the 1960s, when desert travel became popular with the advent and increasing availability of four-wheel drive vehicles. Adverse effects to historic properties would be resolved in accordance with the CDCA Programmatic Agreement and the Protocol.

To satisfy agency responsibilities under Section 106, BLM would propose and develop, in consultation with the SHPO, a phased inventory and evaluation strategy to address the effects of route designation on historic properties. Since the decisions in the NEMO plan would be amendments to the existing CDCA, and serve to implement planning decisions, BLM would propose to amend the CDCA Programmatic Agreement with SHPO to formalize the implementation of a phased cultural resources strategy for routes of travel within the NEMO planning area. The agreement would define the level of effort necessary to address effects of implementation of route designation decisions, provide for a phased identification and evaluation effort over a specific period of time, provide for consultation with SHPO, interested persons, and tribal entities over the design and implementation of identification efforts, and provide remedies (route closure, mitigation) if eligible cultural resources would be determined to be affected. Implementation of the Amendment to the CDCA Programmatic Agreement would satisfy agency responsibilities under Section 106 of the NHPA. This would be the same for all Alternatives.

Impacts to Utilities

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

Impacts to Recreation

General Recreation impacts related to the No Action Alternative for motor vehicle access would include potential loss of access to 4.5 percent of routes in the desert tortoise subregions-many that are already technically closed and 1.2 percent of routes that are already technically limited, through implementation of active closure or limitation techniques (e.g. reclamation or concealment activities, barriers, signing, etc.), visual effects of supplemental signing in some areas of closed, limited, and open routes as needed, no changes in existing route maintenance levels, increased levels of information on routes of travel network in the planning area as subregions are designated, both on the ground and through maps available for public use.

Overall, recreation users would have access to the same network of routes, except that some motorcycle trails, other minor routes, and secondary washes that would have been considered “navigable” in the past but are not part of the inventory and are not consistent with desert tortoise goals for recovery, are closed; and some closures that have not yet been implemented, will be accomplished on an implementation schedule in desert tortoise subregions to promote desert tortoise recovery. Other subregions within the planning area would be anticipated to provide similar levels or increased access, where sensitive resources do not occur. Some areas with sensitive resources already have completed route designation, or partial route designation in the potential area of affect, and route closures are currently in place in these areas (ACECs and a few other identified routes in critical habitats of listed species). Other sensitive areas and habitat (e.g., ACECs, critical habitat, sites on the national register of historic locations) may be expected to have higher levels of limitations or closures, consistent with existing guidance, particularly where boundaries are well defined. These will be evaluated in subsequent environmental documents, with public input and review.

Motor-Vehicle Access-related Recreation Activities: Opportunities for motorized activities would change with respect to routes that would no longer be in the inventory under the No Action Alternative and all other alternatives. In all other respects, impacts of the No Action Alternative are anticipated to remain the same. Activities would not be disrupted or displaced in time or locations, or rendered impractical or infeasible by the continued route uses enabled through application of the route approval process, except as noted below. Opportunities for casual use motorized touring would not be substantially affected by route designation. MUC “Intensive” (I) open areas (Dumont Dunes OHV Area) in the East Mojave would not be affected by desert tortoise subregion designations, as it is outside of desert tortoise habitat.

Organized, permitted touring and other non-competitive motorized activities would continue to be permitted, on designated open routes using standard mitigation measures and compensation ratios, consistent with the programmatic biological opinion for dualsport events, for any disturbed Category I habitat in the desert tortoise subregions. Activities that use small, yet navigable washes or routes and that were not included on previous inventories would be adversely affected within the desert tortoise subregions, because recreationists would not have motorized-access to these locations in Category I habitat in the future. This would primarily affect technical-four wheel-drive users. Hunters could still use these routes and washes by horseback or foot. The desert tortoise subregion does not include major wash subsystems, but does have some areas with secondary wash systems, that are attractive to desert tortoise and would be unavailable. The desert tortoise subregion does not have major wash subsystems, but does have some areas with secondary washes, that are attractive to desert tortoise and would be unavailable.

Recreation opportunities related to competitive organized events, would continue to be available along existing routes of travel in MUC I and M lands, subject to BLM designation of start, finish and spectator areas, and on MUC L routes subject to the parameters in the CDCA Plan, and specific mitigations of the permit. Pending BLM identification of “approved” routes of travel, and subject to CDCA provisions, stipulations and mitigations (see 2.9.1), such opportunities are limited to paved or maintained roads within MUC L lands.

BLM would continue to consider applications for competitive use of all or portions of the Barstow-to-Vegas racecourse shown on the Land Use Map (LUP) for the California Desert Conservation Area Plan (1980), exclusive of National Park Service lands⁶ and consistent with 43 CFR 8342.1 criteria. BLM may continue to exercise its discretion to deny applications, particularly if circumstances that led to the initial establishment of a course have changed. (U. S. District Court, SA CV 90-267-JSL)⁷. The circumstances include those where an event(s) results in significant impacts to sensitive wildlife species and is inconsistent with the management objectives, responsibilities, or programs for the impacted lands. Such circumstances also include those in which it can be shown that the anticipated impacts of an event, including cumulative effects from holding the event in previous years, are unacceptably detrimental to a threatened species and its habitat. (IBLA 91-155). For a thorough discussion of impacts of past Barstow-to-Vegas race events, see Section 4.8.1 (See Chapter 8, Figure 14 for a map of B-to-V route alternatives, and, for provisions, see the Recreation Element of the CDCA Plan, 1980, as amended, under “Organized Competitive Vehicle Events”).

Other Recreation Activities: Opportunities for non-motorized activities would continue to be enabled throughout the planning area with generally unchanged motor-vehicle access to popular locations for rockhounding, landsailing, camping, hiking birdwatching and other recreational activities that take place in the area. Activities that use small, yet navigable washes or routes and that were not included on previous inventories would be adversely affected within the desert tortoise subregions, because recreationists would not have motorized-access to these locations in Category I habitat in the future. This would primarily affect hunters. Hunters and other recreationists could access these areas by horseback or foot. Some non-motorized recreational activities, such as viewing certain species of wildlife, would have no change to their overall experiences, except in wash habitats, to the extent that they respond positively to isolation from humans or motor-vehicles. Overall, the route network continues to provide for recreational access throughout the desert tortoise Category I subregions. Other subregions within the planning area would be anticipated to provide similar levels or increased access, where sensitive resources do not occur.

Impact to Minerals and Mining

The overall impacts on the availability and development of mineral resources and local economies from the existing route designation are deemed to be low, because access is still potentially available along closed routes or even cross country through a notice or plan of operation, if it is deemed appropriate to the operation. Casual mineral exploration could be adversely affected, the same as other motor vehicle access, within the desert tortoise subregions by the exclusion of vehicular use from navigable washes or routes and that were not included on previous inventories, in the future.

⁶ This alignment is currently not 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)

⁷ Ibid

Impacts to Vehicle Access

All “existing” routes in MUC L and M areas, including navigable washes that have been individually identified on CDCA Plan maps and subsequent DAG maps, would be designated open for motor vehicle use under the No Action Alternative for vehicle access, except where such use has already been limited or prohibited, consistent with 43 CFR 8342.1. This alternative would allow existing access to continue on 94.3 percent of the public lands routes in the 850 miles of the route network that has been inventoried in the southern portion of the planning area. Access would also continue in the route network in the remainder of the planning area, pending route designation in other subregions, to occur by the end of June 2004. Other subregions within the planning area would be anticipated to provide similar levels or increased access, where sensitive resources do not occur. Some areas with sensitive resources already have completed route designation, or partial route designation in the potential area of affect, and route closures are currently in place in these areas (ACECs and a few other identified routes in critical habitats of listed species). Other sensitive areas and habitat (e.g., ACECs, critical habitat, sites on the national register of historic locations) may be expected to have higher levels of limitations or closures, consistent with existing guidance, particularly where boundaries are well defined. These will be evaluated in subsequent environmental documents, with public input and review.

The No Action Alternative would include potential loss of access to 4.5 percent of routes in the desert tortoise subregions-many that are already technically closed and 1.2 percent of routes that are already technically limited, through implementation of active closure or limitation techniques (e.g. reclamation or concealment activities, barriers, signing, etc.), visual effects of supplemental signing in some areas of closed, limited, and open routes as needed, no changes in existing route maintenance levels, increased levels of information on routes of travel network in the planning area as subregions are designated, both on the ground and through maps available for public use. The network of routes available for casual motorized use is anticipated to continue to provide reasonable access through the planning area. Overall, recreation users would have access to the same network of routes, except that some motorcycle trails, other minor routes, and secondary washes that would have been considered “navigable” in the past but are not part of the inventory and are not consistent with desert tortoise goals for recovery, are closed; and some closures that have not yet been implemented, will be accomplished on an implementation schedule in desert tortoise subregions to promote desert tortoise recovery.

4.9.2 Alternative 2 for Vehicular Access

Under this alternative 73.6 percent of the public lands routes in a route network of approximately 850 miles would be designated open in the desert tortoise subregions. Washes in the desert tortoise route subregions (i.e., Category I habitat) would be closed. Stopping, parking, and camping would be allowed in disturbed areas within 50 feet of centerline along open routes. Route designation has occurred under Alternative 2 consistent with CDCA Plan guidance application to “existing” routes using (1979 maps, with DAG map corrections) and 43 CFR 8340 *et.seq.* and reflects protective criteria identified in Chapter 2, Section 2.10.2 to protect desert tortoise and other biological values, with a goal to minimize conflicts between sensitive resources and maintain consistency with fallback standards. Closed and limited routes consist of previously closed lakebeds to protect other recreational and commercial pursuits, routes that have been managed as closed (by Federal Register notice) since 1979, specifically to protect desert tortoise values, and have been shown as closed on DAGs or not shown on inventory or DAG maps at all, and other routes that meet the specific criteria outlined in Chapter 2. Route designation in the remainder of the planning area would be completed by the end of June 2004 or as otherwise agreed to in C-00-0927-WHA and would include additional public input and review.

Impacts to Vegetation

General Vegetation: The implementation of Alternative 2 for vehicle access could create a potential for weed establishment and fire occurrence impacting vegetation adjacent to designated open routes. There is a low potential for large-scale vegetative type conversion affecting identified sensitive vegetation with Alternative 2.

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

Future vegetation disturbances to non-route areas in the planning area would be further reduced under this alternative by the decreased density of the route network, and associated reduced impacts to the planning area from adjacent urban growth/route proliferation.

Special Status Plants: The alternative would result in the closure or limitation of routes within 1/4 mile of known listed T&E plant populations, or those listed in the future. This action would create a positive impact on sensitive vegetation.

Biological Soil Crusts: Impacts for Alternative 2 would be the same as the No Action Alternative.

Riparian/Wetland: Routes within 1/4 mile of a natural or artificial water source (e.g., springs, seeps, streams, guzzlers) would be closed or limited to vehicle access. This action would be a positive benefit to the areas and their vegetation.

Noxious Weeds: Impacts are the same as for the No Action Alternative. Invasive plant species common to the planning area grow well on disturbed sites. They tend to thrive in high nitrogen soils, but are not completely limited by low-nitrogen. Their seeds are easily transported to new areas. They often become established in low numbers in disturbed soil areas such as road shoulders, spreading rapidly following roads and trails. Often, the invasive plants can out-compete and displace native vegetation. The aggressive ability of these plants to become established along high use routes poses a high potential for exotic plant displacement of native species in the vicinity of heavily used areas.

Impacts to Wildlife

General Wildlife: The most substantial direct positive impact to wildlife within this planning area would be due to 183 fewer miles of designated open routes in wildlife habitats, in relation to the current “existing” route network in the desert tortoise subregions, and the anticipated reductions in the rest of the planning area that would occur under this alternative during route designation using the criteria in Chapter 2, Section 2.10.2. Wildlife would benefit from the closure of routes that cause conflicts with roosting, nesting, migration or watering sites.

Special Status Animals: Biological parameters have been applied under Alternative 2 to meet desert tortoise DWMA goals and objectives. Routes have been designated “closed” or “limited” as appropriate, and would result in positive benefits to the desert tortoise and other wildlife.

Impacts to Soil, Water and Air Resources

Since reducing the use of routes proportionately reduces soil disturbances, particularly wash closures, there would be a modest beneficial impact to soil, water and air resources under Alternative 2 for vehicular access.

Impacts to Cultural and Native American Values

Cultural and Native American values would receive additional protection under Alternative 2 for vehicle access. Closure of any route within ¼ mile of a significant sacred site or cultural resource that may be impacted or lost would provide a positive impact to the continued preservation of the integrity of the site or area.

Under Alternative 2, there would be no change to the Cultural Resources Element of the CDCA Plan. The CDCA Programmatic Agreement and Protocol would still govern BLM's implementation of the CDCA Plan for cultural resources and would provide processes for the resolution of effects on significant historic properties. The CDCA Programmatic Agreement would be amended to provide for the phased identification and evaluation of cultural resources.

Analysis and effects would be similar to the No Action Alternative. All routes would be managed according to MUC "L" guidelines. When the route is determined to pose a threat or meet specific conditions within ¼ mile of a threatened and endangered species, natural resource, or sacred sites and cultural resource, the route would be seasonally or permanently closed, depending on the nature of the threat and resource. For the remainder of the planning area, the majority of remaining routes would also be anticipated to be designated open through the route designation process, prior to the end of June 2004, and would be available for motor vehicle use until that time. Cultural resources effects would be evaluated on a case-by-case basis for each route designation in accordance with the CDCA Programmatic Agreement and the Protocol. Alternative 2 would result in decreased use and availability of some routes for motor vehicles.

This, in turn, would eliminate threats to cultural resources along routes that would be closed and reduce threats along routes that would be limited. For routes proposed as "open", there would be no significant reduction or increase in immediate threats to these resources. Over time, it is presumed that cultural resources would continue to be affected by use patterns that have existed over the past century. There would be no measurable affects on some resources, while others would experience a cumulative degrading of integrity and context. In this alternative, adverse effects to historic properties as they are identified, would be resolved in accordance with procedures outlined in the proposed amendment to the CDCA Programmatic Agreement.

Impacts to Recreation Resources and Activities

Motor-Vehicle Access-related Recreation Activities: Under this alternative 73.6 percent of the public lands routes in a route network of approximately 850 miles would be designated open in the desert tortoise subregions. Opportunities for motorized recreational activities would decrease to some extent because BLM would apply the CDCA Plan's route approval process to "existing" routes (1977-1979 maps as updated by the DAGs) in all Category I desert tortoise habitat, using Alternative 2 criteria (Chapter 2, Section 2.10.2). The Alternative 2 Routes of Travel network has a 14.6 percent increase in the amount of closed routes, a 6.1 percent increase in the amount of limited routes, and a 20.7 percent decrease in the amount of open routes as compared to Alternative 1. In the remainder of the planning area, decreases in the open route network would be anticipated based on the 43 CFR 8342.1 and Chapter 2, Section 2.10.2 criteria.

Opportunities for motorized activities would generally not be affected by limiting parking and camping to within 50 feet both ways from access route centerline because, with few exceptions, such activities do not include parking and camping in the ordinary sense of those terms. One exception is large vehicles such as recreational vehicles or groups of such vehicles, which would be impacted by the change. These vehicles could have difficulty finding suitable camping spots with a fifty-foot wide camping distance. The reason for changing the distance from 100 feet to 300 feet in the first place was to allow for recreational vehicle camping in a circle, not a line (CDCA Plan amendment, 1982). This limitation would not apply outside of the desert tortoise subregions, but stopping, parking and camping would be evaluated during route designation process in other subregions and may be limited under this alternative in other areas, particularly where there are routes through sensitive species habitat. This limitation is not a major impact in the planning area, given the low levels of group camping. If adequate demand develops for this service, one or more camping areas may need to be designated.

Signs would be posted in many areas soliciting cooperation with the route network. In some cases, fencing may be used to prevent unintentional impacts. In addition, interpretive signing and informational kiosks would promote visitor use consistent with management objectives in the desert tortoise subregions. In other parts of the planning area, updated network maps may be the primary informational tool.

Competitive-events related opportunities would be impacted by Alternative 2. The Barstow-to-Vegas motorcycle race and other competitive events that may be applied for, consistent with CDCA Plan criteria, would be precluded under this alternative outside of OHV Open Areas (Dumont Dunes in the planning area). Negative impacts to other motor-vehicle recreationists would generally not occur, except for the potential of others being precluded as incidental spectators at these events. There will continue to be more users competing for same number of permits within all of the OHV Open areas. The impacts of Alternative 2 within the Dumont Dunes OHV Open area would increase because this would be the only nearby area available for competitive OHV events. Dualsport and other organized, permitted noncompetitive motorized activities would continue to be permitted on open routes and limited routes, except where such activities are specifically precluded on such routes throughout the planning area. Opportunities for non-competitive events would continue to be somewhat higher outside of OHV Open areas, particularly on busy and popular holiday weekends. Programmatic mitigation measures and a standard compensation ratio (5 to 1 in Category I habitat/ACECs. would be used under this Alternative). As with the no action alternative, organized motorized competitive events would not be authorized in desert tortoise Category I or critical habitats.

There are some segments of the population that are more greatly affected by the increased route closures and limitations. One group is technical four-wheel drive enthusiasts. This group would use routes not as a transportation system but for the challenge of the route itself. Some of those routes would no longer be available under this alternative, and under potentially all alternatives. This alternative also closes redundant routes, some of which are the result of short-cutting, but some of which can also provide different riding experiences for the four-wheeler.

Other Recreation Activities: Opportunities for non-motorized activities would diminish somewhat, because they would be disrupted, displaced (in time or geography), or rendered impractical or infeasible by the application of routes of travel designation and the resulting decrease in motor-vehicle access to specific locations or trailheads. For the same reason, some non-motorized recreational activities, such as viewing certain species of wildlife, would also benefit somewhat from Alternative 2 to the extent that they respond positively to isolation from humans or motor-vehicles. Overall, the route network continues to provide for access throughout the desert tortoise Category I subregions, and impacts are minor.

There are some segments of the population that are more greatly affected by the increased route closures and limitations. The first group is the elderly and handicapped. Generally, this group can still access most of the locations it seeks regularly, but can not explore all areas as readily as others. A second group is hunters, who are the most affected by the designations because of the closure of washes. Gamebird, deer and other hunters drive up washes to find locations at or near waters to find their game. Since washes would only be available by foot or horseback, hunters would find it more difficult to access choice spots to get game in the desert tortoise subregions. These groups are moderately affected by Alternative 2.

Impacts to Utilities

Alternative 2 would have no effect on existing facilities within utility corridors or the maintenance of those corridors. New facilities may be subject to additional parameters in ACECs including limitations on new access (see Appendix A).

Impacts to Minerals and Mining

The elimination of routes in washes would limit potentials for mineral exploration in the southern third of the planning area (354,000 acres). This impact is not expected to have a significant overall effect on mineral development.

Impacts to Vehicle Access

All “existing” routes in MUC L and M areas, that have been individually identified on CDCA Plan maps and subsequent DAG maps, would be designated as either Open Closed or Limited routes of travel for motor vehicle use under Alternative 2 for vehicle access, consistent with 43 CFR 8342.1. This alternative would provide for a primary transportation network in the desert tortoise subregions, on 354,000 acres, and allow existing access to continue on 73.6 percent of the public land routes in 850 miles of the route network in the southern portion of the planning area. Access would also continue in the route network in the remainder of the planning area, pending route designation in other subregions, to occur by the end of June 2004 or a schedule as otherwise agreed to in agreement C-00-0927-WHA.

Other subregions within the planning area would be anticipated to provide similar levels or increased access, where sensitive resources do not occur. Some areas with sensitive resources already have completed route designation, or partial route designation in the potential area of affect, and route closures are currently in place in the areas (ACECs and a few other identified routes in critical habitats of listed species). Other sensitive areas and habitat (e.g., ACECs, critical habitat, sites on the national register of historic locations) may be expected to have higher levels of limitations or closures, consistent with existing guidance (see Chapter 2, Section 2.10.2), particularly where boundaries are well defined. These will be evaluated in subsequent environmental documents, with public input and review.

Alternative 2 would result in the closure or limitation of approximately 223 miles of routes on public lands, and include an additional potential loss of access to 14.6 percent of routes through closure and a loss of an additional 6.1 percent of routes that would be limited in the desert tortoise subregions over the No Action Alternative. Alternative 2, like Alternative 1 would include implementation of active closure or limitation techniques, visual effects of supplemental signing in some areas, no anticipated changes in existing route maintenance levels, and increased levels of information on routes of travel network in the planning area as subregions are designated, both on the ground and through maps available for public use. The network of routes available for casual motorized use is anticipated to continue to provide reasonable access through the planning area. Overall, recreation users would have overall access to the area, but would have somewhat less access to specific locations based on the route closures. Access limitations would affect some users more than others, as discussed under 4.9.2.5, *Impacts to Recreation Resources and Activities*. Other affected users would include casual mineral explorers (i.e., those not filing a notice or plan of operations).

4.9.3 Alternative 3

Under this alternative 80.7 percent of the public lands routes in a route network of approximately 850 miles would be designated open in the desert tortoise subregions, including major washes. Stopping, parking, and camping would be allowed in disturbed areas within 100 feet of centerline along open routes in the ACECs, consistent with the existing CDCA Plan for sensitive areas. Route designation has occurred under Alternative 3 consistent with CDCA Plan guidance application to “existing” routes using (1979 maps, with DAG map corrections) and 43 CFR 8340 *et.seq.* and reflects protective criteria identified in Chapter 2, Section 2.10.2 to protect desert tortoise and other biological values as modified to provide for access to specific recreational destinations, with a goal to minimize conflicts between sensitive resources and maintain consistency with fallback standards. Closed and limited routes consist of previously closed lakebeds to protect other recreational and commercial pursuits, routes that have been managed as closed (by Federal Register notice) since 1979, specifically to protect desert tortoise values, and have been shown as closed on DAGs or not shown on inventory or DAG maps at all, and other routes that meet the specific criteria outlined in Chapter 2. Route designation in the remainder of the planning area would be completed by the end of June 2004 or as otherwise agreed to in C-00-0927-WHA and would include additional public input and review.

Impacts to Vegetation

General Vegetation: In Alternative 3, there would be a potential for weed establishment and fire occurrence that could impact vegetation adjacent to designated open routes. There would be a low potential for large-scale vegetative type conversion affecting sensitive vegetation.

A high potential for additional individual plant damage and loss, where vegetation occurs close to the edges of routes designated as open, as 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 were designated limited or closed.

Future vegetation disturbances to non-route areas in the planning area would be further reduced under this alternative by the decreased density of the route network, but to a lesser extent than Alternative 2, and associated reduced impacts would be anticipated in the planning area from adjacent urban growth/route proliferation.

Special Status Plants: This alternative would result in closure or limitation of routes 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 would be the same as the No Action Alternative.

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

Noxious Weeds: Impacts are the same as the No Action Alternative. Invasive plant species common to the planning area prefer disturbed sites. They tend to thrive in high nitrogen content soils, but are not completely limited by low-nitrogen content soils. Seeds are easily transported from one area to another. They often become established in low numbers in disturbed soil areas like road shoulders, spreading further, invading areas of disturbed soil. The exotic plants often out-compete or displace native vegetation. Together, the invasive traits of these plants and the quantity of high use routes within the route network poses a high potential for non-native plant displacement of native species in the vicinity of heavily used route shoulders.

Impacts to Wildlife

General Wildlife: The most substantial direct positive impact to wildlife within the planning area would result because of having 123 fewer miles of designated open routes in wildlife habitats, in relation to the current “existing” route network, (No Action Alternative) in the desert tortoise subregions, and the anticipated reductions in the rest of the planning area that would occur under this alternative during route designation using the criteria in Chapter 2, Section 2.10.2, as modified under 2.10.3 for Alternative 3.. These benefits would not be as positive to wildlife as Alternative 2, which would have more than 65 miles of additional closures due primarily to the closure of all washes. Wildlife would benefit from the closure of routes that cause conflicts with roosting, nesting and watering sites.

Special Status Animals: Specific biological management tools have been applied under Alternative 3 to meet desert tortoise DWMA goals and objectives. “Closed” or “Limited” routes would have positive benefits to the desert tortoise and other wildlife.

Impacts to Soil, Water and Air Resources

Impacts to soil, water and air resources would be the same as Alternative 2 within desert tortoise ACECs. Outside of ACECs, except when washes would be part of the primary route network, Alternative 3 could be expected to result in fewer impacts than Alternative 1 where washes would be presumed open, but somewhat greater impacts than Alternative 2 where washes would be presumed closed. The exception would be in other sensitive areas such as ACECs, UPAs, etc, where 43 CFR 8342.1 criteria would likely result in additional restrictions.

Impacts to Cultural and Native American Values

Under this Propose Plan, there would be no change to the Cultural Resources Element of the CDCA Plan. The CDCA Programmatic Agreement and Protocol would still govern implementation of the CDCA Plan for cultural resources and would provide processes for the resolution of effects on significant historic properties. Analysis and effects would be the same as Alternative 2, because the route designations of this alternative would not be substantially different. There would be no substantial change in cultural resource management and no measurable effects on their preservation and protection. Under Alternative 3, the CDCA Programmatic Agreement would be amended to provide for the phased identification and evaluation of cultural resources.

Impacts to Recreation Resources and Activities

Motor-Vehicle Access-related Recreation Activities: Under Alternative 3, 80.7 percent of the public lands routes in a route network of approximately 850 miles would be designated open in the desert tortoise subregions. Opportunities for motorized recreational activities would decrease to some extent because BLM would apply the CDCA Plan’s route approval process to “existing” routes (1977-1979 maps as updated by the DAGs) in all Category I desert tortoise habitat, using Alternative 2 criteria (Chapter 2, Section 2.10.2), as modified under Alternative 3 in consideration of recreation users. The Alternative 3 Routes of Travel network has a 6.6 percent increase in the amount of closed routes, a 7.0 percent increase in the amount of limited routes, and a 13.6 percent decrease in the amount of open routes as compared to Alternative 1. In the remainder of the planning area, lesser decreases in the open route network would be anticipated based on the 43 CFR 8342.1 and Chapter 2, Section 2.10.2 criteria, as modified under Alternative 3, except in sensitive areas (e.g,ACECs, other critical habitats for listed species).

Opportunities for motorized activities would generally not be affected by limiting parking and camping to within 100 feet both ways from access route centerline because, with few exceptions, such activities do not include parking and camping in the ordinary sense of those terms. The 100-foot limit would be less impacting to large vehicles such as recreational vehicles or groups of such vehicles, than the 50-foot limit of Alternative 2. The 100-foot limitation would not apply outside of the desert tortoise subregions, which would remain at 300 feet. But stopping, parking and camping would be evaluated during route designation process in other subregions, and other areas may be limited under this alternative, particularly where there are routes through sensitive species habitat, consistent with the CDCA guidance for limitations in sensitive areas to 100 feet.

Signs would be posted in many areas soliciting cooperation with the route network. In some cases, fencing may be used to prevent unintentional impacts. In addition, interpretive signing and informational kiosks would promote visitor use consistent with management objectives in the desert tortoise subregions. In other parts of the planning area, updated network maps may be the primary informational tools.

Competitive-events related opportunities would be impacted by Alternative 3. The Barstow-to-Vegas motorcycle race would be precluded under this alternative. Other competitive events may be applied for on designated open routes, that are not specifically excluded from such use, using criteria identified herein (see Chapter 2, Section 2.9.3) outside of OHV Open Areas. As with the No Action Alternative, organized motorized competitive events would not be authorized in desert tortoise Category I or critical habitats. Routes identified for competitive events also experience increased use-levels and therefore may degrade somewhat, relative to other backcountry routes recreationists find in the planning area.

Dualsport and other organized, permitted noncompetitive motorized activities would continue to be permitted on open routes and limited routes, except where such activities are specifically precluded on such routes throughout the planning area. Opportunities for non-competitive events would continue to be somewhat higher outside of OHV Open areas, particularly on busy and popular holiday weekends. Programmatic mitigation measures and a standard compensation ratio (5 to 1 in Category I habitat/ACECs, would be used under this Alternative). Other motor-vehicle related casual use would be somewhat affected by competitive and non-competitive events, but the effects would not restrict long-term access to the planning area. The casual user may find that they do not have access to a particular route for a particular specified timeframe on a particular day, while a permitted event is occurring. These limitations are short-term, infrequent, and widely spaced over the planning area, and create an opportunity to watch the event, if the recreationist is interested in doing so. They tend to occur on well-publicized and holiday weekends.

The same groups that are more affected by increased route closures and limitations under Alternative 2 are more affected under Alternative 3, to a lesser degree. One group is technical four-wheel drive enthusiasts. This group would use routes not as a transportation system but for the challenge of the route itself. Some of those routes would no longer be available under this alternative, and under potentially all alternatives. This alternative also closes redundant routes, some of which are the result of short-cutting, but some of which can also provide different riding experiences for the four-wheeler.

Other Recreation Activities: Opportunities for non-motorized activities would diminish to a lesser extent than Alternative 2 but a greater extent than Alternative 1, because they would be disrupted, displaced (in time or geography), or rendered impractical or infeasible by the application of routes of travel designation and the resulting decrease in motor-vehicle access to specific locations or trailheads. For the same reason, some non-motorized recreational activities, such as viewing certain species of wildlife, would also benefit somewhat from Alternative 3 to the extent that they respond positively to isolation from humans or motor-vehicles. Overall, the route network continues to provide for access throughout the desert tortoise Category I subregions, and impacts are minor.

As with Alternative 2, some segments of the population are more greatly affected by the increased route closures and limitations, but to a lesser extent under Alternative 3 primarily because some washes would be available for use. Hunters, who are the most affected by the designations because of the closure of washes, would have some wash access. Minor washes would only be available by foot or horseback in the desert tortoise subregions. Therefore, non-motorized recreationists are moderately affected by Alternative 3. In other parts of the planning area, additional access may be provided to meet specific recreation destination needs, depending upon the sensitivity of the area (i.e. consistent with 43 CFR 8342.1).

Impacts to Utilities

Impacts to utilities would be the same as Alternative 2. Alternative 3 would have no effect on existing facilities within utility corridors or the maintenance of facilities within these corridors. New facilities may be subject to additional parameters in ACECs, including limitations on new access (see Appendix A).

Impacts to Minerals and Mining

Impacts to mineral access and mining from Alternative 3 would be somewhat greater than Alternative 1 and less than Alternative 2. Under Alternative 3, approximately the same restrictions and closures for desert tortoise subregions would apply except that major washes would be available for use. The elimination of routes in minor washes would limit potential for mineral exploration in the southern third of the planning area (354,000 acres). This impact is not anticipated to have a significant overall effect on mineral development. There would be fewer closed or limited routes anticipated for other resources outside of desert tortoise subregions under Alternative 3 than under Alternative 2, based on the criteria used in Chapter 2, Section 2.10.2, as modified under Alternative 3. Impacts to minerals and mining would be in the form of the paperwork, financial assurance, and delays required for filing a notice or plan of operations to obtain authorization for access to deposits or mining claims.

Impacts to Vehicle Access

All “existing” routes in MUC L and M areas, that have been individually identified on CDCA Plan maps and subsequent DAG maps, would be designated as either Open Closed or Limited routes of travel for motor vehicle use under Alternative 3 for vehicle access, consistent with 43 CFR 8342.1. This alternative would provide for a primary transportation network and access to recreation destinations in the desert tortoise subregions, on 354,000 acres. Alternative 3 would allow existing access to continue on 80.7 percent of the public land routes in 850 miles of the route network in the southern portion of the planning area. Access would also continue in the route network in the remainder of the planning area, pending route designation in other subregions, to occur by the end of June 2004 or a schedule as otherwise agreed to in agreement C-00-0927-WHA.

Other subregions within the planning area would be anticipated to provide similar levels or increased access, where sensitive resources do not occur. Some areas with sensitive resources already have completed route designation, or partial route designation in the potential area of affect, and route closures are currently in place in the areas (ACECs and a few other identified routes in critical habitats of listed species). Other sensitive areas and habitat (e.g., ACECs, critical habitat, sites on the national register of historic locations) may be expected to have higher levels of limitations or closures, consistent with existing guidance (see Chapter 2, Section 2.10.2), as modified under Alternative 3, particularly where boundaries are well defined. These will be evaluated in subsequent environmental documents, with public input and review.

Alternative 3 would result in the closure or limitation of approximately 163 miles of routes on public lands, and include an additional potential loss of access to 6.6 percent of routes through closure and a loss of an additional 7.0 percent of routes that would be limited in the desert tortoise subregions over the No Action Alternative. Alternative 3, like Alternative 1 would include implementation of active closure or limitation techniques, visual effects of supplemental signing in some areas, no anticipated changes in existing route maintenance levels, and increased levels of information on routes of travel network in the planning area as subregions are designated, both on the ground and through maps available for public use. The network of routes available for casual motorized use is anticipated to continue to provide reasonable access through the planning area. Overall, recreation users would have overall access to the area, but would have somewhat less access to specific locations based on the route closures. Access limitations would affect some users more than others, as discussed under 4.9.3.5, *Impacts to Recreation Resources and Activities*. Other affected users would include casual mineral explorers (i.e., those not filing a notice or plan of operations). These effects would be somewhat less than under Alternative 2.

4.9.4 Alternative 4

Alternative 4 would be similar to Alternative 3 but it would not consider routes for closure based on being “redundant” routes, and may create a small (MUC Limited) to moderate (MUC Moderate) increase in open routes. Impacts to all resources and activities in Alternative 4 would be the same as Alternative 3.

Impacts to Vegetation

General Vegetation: In Alternative 4, there would be a potential for weed establishment and fire occurrence that could impact vegetation adjacent to designated open routes. There would be a low potential for large-scale vegetative type conversion affecting sensitive vegetation.

A high potential for additional individual plant damage and loss, where vegetation occurs close to the edges of routes designated as open, as 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 were designated limited or closed.

Future vegetation disturbances to non-route areas in the planning area would be further reduced under this alternative by the decreased density of the route network, to a lesser extent than Alternative 2 and a similar extent as Alternative 3, and associated reduced impacts would be anticipated in the planning area from adjacent urban growth/route proliferation.

Special Status Plants: This alternative would result in closure or limitation of routes 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 would be the same as the No Action Alternative.

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

Noxious Weeds: Impacts are the same as the No Action Alternative. Invasive plant species common to the planning area prefer disturbed sites. They tend to thrive in high nitrogen content soils, but are not completely limited by low-nitrogen content soils. Seeds are easily transported from one area to another. They often become established in low numbers in disturbed soil areas like road shoulders, spreading further, invading areas of disturbed soil. The exotic plants often out-compete or displace native vegetation. Together, the invasive traits of these plants and the quantity of high use routes within the route network poses a high potential for non-native plant displacement of native species in the vicinity of heavily used route shoulders.

Impacts to Wildlife

General Wildlife: The most substantial direct positive impact to wildlife within the planning area would result because of having 116 fewer miles of designated open routes in wildlife habitats, in relation to the current “existing” route network, (No Action Alternative) in the desert tortoise subregions. The anticipated reductions in the rest of the planning area that would occur under this alternative during route designation using the criteria in Chapter 2, Section 2.10.2, as modified under 2.10.4 for Alternative 4, would be somewhat greater outside of sensitive areas, particularly in MUC moderate. These benefits would not be as positive to wildlife as Alternative 2, which would have approximately 75 miles of additional closures due primarily to the closure of all washes. Wildlife would benefit from the closure of routes that cause conflicts with roosting, nesting and watering sites.

Special Status Animals: Specific biological management tools have been applied under Alternative 4 in the desert tortoise subregions to meet desert tortoise DWMA goals and objectives. “Closed” or “Limited” routes would have positive benefits to the desert tortoise and other wildlife.

Impacts to Soil, Water and Air Resources

Impacts to soil, water and air resources would be the same as Alternative 2 within ACECs. Outside of ACECs, except when washes would be part of the primary route network, Alternative 4 could be expected to result in fewer impacts than Alternative 1 where washes would be presumed open, but somewhat greater impacts than Alternative 2 where washes would be presumed closed, and in slightly greater impacts than Alternative 3, where redundant washes would be presumed closed. The exception would be in sensitive areas such as ACECs, UPAs, etc, where 43 CFR 8342.1 criteria would likely result in additional restrictions.

Impacts to Cultural and Native American Values

Under Alternative 4, there would be no change to the Cultural Resources Element of the CDCA Plan. The CDCA Programmatic Agreement and Protocol would still govern implementation of the CDCA Plan, and would provide processes for the resolution of impacts on significant historic properties. Analysis and effects would be the same as Alternative 2, because the route designations in this alternative would not be substantially different. There would be no substantial change in the management of cultural resources and no measurable effect on the preservation and protection of cultural resources. Under Alternative 4, the CDCA Programmatic Agreement would be amended to provide for the phased identification and evaluation of cultural resources.

Impacts to Recreation Resources and Activities

Motor-Vehicle Access-related Recreation Activities: Under Alternative 4, 81.5 percent of the public lands routes in a route network of approximately 850 miles would be designated open in the desert tortoise subregions. Opportunities for motorized recreational activities would decrease to some extent because BLM would apply the CDCA Plan’s route approval process to “existing” routes (1977-1979 maps as updated by the DAGs) in all Category I desert tortoise habitat, using Alternative 2 criteria (Chapter 2, Section 2.10.2), as modified under Alternative 4 in consideration of recreation users. The Alternative 4 Routes of Travel network has a 5.8 percent increase in the amount of closed routes, a 7.0 percent increase in the amount of limited routes, and a 12.8 percent decrease in the amount of open routes as compared to Alternative 1. In the remainder of the planning area, lesser decreases in the open route network would be anticipated based on the 43 CFR 8342.1 and Chapter 2, Section 2.10.2 criteria, as modified under Alternative 4, except in sensitive areas (e.g,ACECs, other critical habitats for listed species).

Opportunities for motorized activities would generally not be affected by limiting parking and camping to within 100 feet both ways from access route centerline because, with few exceptions, such activities do not include parking and camping in the ordinary sense of those terms. The 100-foot limit is the same as Alternative 3 and the CDCA Plan for sensitive areas. The 100-foot limitation would not apply outside of the desert tortoise subregions, which would remain at 300 feet, and stopping, parking and camping would be evaluated during route designation process in other subregions. Other areas may be limited under this alternative, particularly where there are routes through sensitive species habitat, consistent with the CDCA guidance for limitations in sensitive areas.

Signing, fencing, and outreach strategies would be the same as Alternative 3 (see Appendix A for more information in the desert tortoise subregion). In other parts of the planning area, updated network maps may be the primary informational tool.

Competitive-events related opportunities would be impacted by Alternative 4. The Barstow-to-Vegas motorcycle race would not be precluded under this alternative. Other competitive events could occur in the planning area on designated Open routes where such use has not been precluded, subject to expanded criteria identified herein (see Chapter 2, Section 2.9.3 and 2.9.4). Criteria for course use are modified from Alternative 3 to provide for expansion of route width and potential course use within an ACEC, upon ACEC Plan approval. This would provide for potentially more opportunities and a more cross-country racing experience. As with the No Action Alternative, organized motorized competitive events would not be authorized in desert tortoise Category I or critical habitats. Routes identified for competitive events also experience increased use-levels and therefore may degrade somewhat, relative to other backcountry routes recreationists find in the planning area.

Dualsport and other organized, permitted noncompetitive motorized activities would continue to be permitted on open routes and limited routes, except where such activities are specifically precluded on such routes throughout the planning area. Opportunities for non-competitive events would continue to be somewhat higher outside of OHV Open areas, particularly on busy and popular holiday weekends. Programmatic mitigation measures and a standard compensation ratio (5 to 1 in Category I habitat/ACECs, would be used under this Alternative). Other motor-vehicle related casual use would be somewhat affected by competitive and non-competitive events, but the effects would not restrict long-term access to the planning area. The casual user may find that they do not have access to a particular route for a particular specified timeframe on a particular day, while a permitted event is occurring. These limitations are short-term, infrequent, and widely spaced over the planning area, and create an opportunity to watch the event, if the recreationist is interested in doing so. They tend to occur on well-publicized and holiday weekends.

The effects of Alternative 4 are the same as Alternative 3 relative to effects of closures on recreationists. Some of those routes would no longer be available under this alternative, and under potentially all alternatives. This alternative would not close redundant routes, some of which can provide different riding experiences for the four-wheeler. This could be beneficial particularly in MUC moderate areas.

Other Recreation Activities: Opportunities for non-motorized activities would diminish to a lesser extent than Alternative 2 and a similar extent as Alternative 3, than Alternative 1. Activities would be disrupted, displaced (in time or geography), or rendered impractical or infeasible by the application of routes of travel designation and the resulting decrease in motor-vehicle access to specific locations or trailheads. For the same reason, some non-motorized recreational activities, such as viewing certain species of wildlife, would also benefit somewhat from Alternative 4 to the extent that they respond positively to isolation from humans or motor-vehicles. Overall, the route network continues to provide for access throughout the desert tortoise Category I subregions, and impacts are minor.

As with Alternative 2 and 3, some segments of the population are more greatly affected by the increased route closures and limitations. Hunters, who are the most affected by the designations because of the closure of minor washes, would have some wash access. Minor washes would only be available by foot or horseback in the desert tortoise subregions. Therefore, non-motorized recreationists are moderately affected by Alternative 4. In other parts of the planning area, additional access may be provided to meet specific recreation destination needs, depending upon the sensitivity of the area (i.e. consistent with 43 CFR 8342.1).

Impacts to Utilities

Impacts to utilities would be the same as Alternative 2. Alternative 4 would have no effect on existing facilities within utility corridors or the maintenance of facilities within these corridors. New facilities may be subject to additional parameters in ACECs, including limitations on new access (see Appendix A).

Impacts to Minerals and Mining

Impacts to mineral access and mining from Alternative 4 would be similar to Alternative 3, somewhat greater than Alternative 1 and less than Alternative 2. Under Alternative 4, approximately the same restrictions and closures for desert tortoise subregions would apply except that major washes would be available for use. The elimination of routes in minor washes would limit potential for mineral exploration in the southern third of the planning area (354,000 acres). This impact is not anticipated to have a significant overall effect on mineral development. There would be fewer closed or limited routes anticipated for other resources outside of the desert tortoise subregions under Alternative 4 than under Alternatives 2 or 3, based on the criteria used in Chapter 2, Section 2.10.2, as modified under Alternative 4. Impacts to minerals and mining would be in the form of the paperwork, financial assurance, and delays required for filing a notice or plan of operations to obtain authorization for access to deposits or mining claims.

Impacts to Vehicle Access

All “existing” routes in MUC L and M areas, that have been individually identified on CDCA Plan maps and subsequent DAG maps, would be designated as either Open Closed or Limited routes of travel for motor vehicle use under Alternative 4 for vehicle access, consistent with 43 CFR 8342.1. This alternative would provide for a primary transportation network and access to recreation destinations in the desert tortoise subregions, on 354,000 acres. Alternative 4 would allow existing access to continue on 81.5 percent of the public land routes in 850 miles of the route network in the southern portion of the planning area. Access would also continue in the route network in the remainder of the planning area, pending route designation in other subregions, to occur by the end of June 2004 or a schedule as otherwise agreed to in agreement C-00-0927-WHA.

Other subregions within the planning area would be anticipated to provide similar levels or increased access, where sensitive resources do not occur. Some areas with sensitive resources already have completed route designation, or partial route designation in the potential area of affect, and route closures are currently in place in the areas (ACECs and a few other identified routes in critical habitats of listed species). Other sensitive areas and habitat (e.g., ACECs, critical habitat, sites on the national register of historic locations) may be expected to have higher levels of limitations or closures, consistent with existing guidance (see Chapter 2, Section 2.10.2), as modified under Alternative 4, particularly where boundaries are well defined. These will be evaluated in subsequent environmental documents, with public input and review.

Alternative 4 would result in the closure or limitation of approximately 156 miles of routes on public lands, and would include an additional potential loss of access to 5.8 percent of routes through closure and a loss of an additional 7.0 percent of routes that would be limited in the desert tortoise subregions over the No Action Alternative. Impacts in the desert tortoise subregions would be very similar to Alternative 3, but could result in fewer closures in areas without significant sensitive areas, based on the potential for redundant routes to be open. Alternative 4, like other alternatives, would include implementation of active closure or limitation techniques, visual effects of supplemental signing in some areas, no anticipated changes in existing route maintenance levels, and increased levels of information on routes of travel network in the planning area as subregions are designated, both on the ground and through maps available for public use.

The network of routes available for casual motorized use is anticipated to continue to provide reasonable access through the planning area. Overall, recreation users would have overall access to the area, but would have somewhat less access to specific locations based on the route closures. Access limitations would affect some users more than others, as discussed under 4.9.4.5, *Impacts to Recreation Resources and Activities*. Other affected users would include casual mineral explorers (i.e., those not filing a notice or plan of operations). These effects would be somewhat less than under Alternative 2.

4.9.5 Alternative 5 (Proposed Plan)

Alternative 3 has been selected as the Proposed Plan, without modification (but see also 4.8.5 for Organized Competitive Events: Proposed Plan is Not Alternative 3). It is summarized herein. Under the Proposed Plan 80.7 percent of the public lands routes in a route network of approximately 850 miles would be designated open in the desert tortoise subregions, including major washes. Stopping, parking, and camping would be allowed in disturbed areas within 100 feet of centerline along open routes in the ACECs, consistent with the existing CDCA Plan for sensitive areas. Route designation has occurred under the Proposed Plan consistent with CDCA Plan guidance application to “existing” routes using (1979 maps, with DAG map corrections) and 43 CFR 8340 *et seq.* and reflects protective criteria identified in Chapter 2, Section 2.10.2 to protect desert tortoise and other biological values as modified to provide for access to specific recreational destinations, with a goal to minimize conflicts between sensitive resources and maintain consistency with fallback standards. Closed and limited routes consist of previously closed lakebeds to protect other recreational and commercial pursuits, routes that have been managed as closed (by Federal Register notice) since 1979, specifically to protect desert tortoise values, and have been shown as closed on DAGs or not shown on inventory or DAG maps at all, and other routes that meet the specific criteria outlined in Chapter 2. Route designation in the remainder of the planning area would be completed by the end of June 2004 or as otherwise agreed to in C-00-0927-WHA and would include additional public input and review.

Impacts to Vegetation

General Vegetation: Impacts are the same as Alternative 3. In the Proposed Plan, there would be a potential for weed establishment and fire occurrence that could impact vegetation adjacent to designated open routes. There would be a low potential for large-scale vegetative type conversion affecting sensitive vegetation.

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

Future vegetation disturbances to non-route areas in the planning area would be further reduced under the Proposed Plan by the decreased density of the route network, but to a lesser extent than Alternative 2, and associated reduced impacts would be anticipated in the planning area from adjacent urban growth/route proliferation.

Special Status Plants: Impacts are the same as Alternatives 2, 3 and 4. The Proposed Plan would result in closure or limitation of routes 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 would be the same as the No Action Alternative.

Riparian/Wetlands: Impacts are the same as Alternatives 2, 3, and 4. Routes within 1/4 mile of a natural or artificial water source (e.g., springs, seeps, streams, guzzlers) would be closed or limited to vehicle access. This action would be a positive benefit to the specific areas and the associated habitats and vegetation.

Noxious Weeds: Impacts are the same as the other alternatives. Invasive plant species common to the planning area prefer disturbed sites. They tend to thrive in high nitrogen content soils, but are not completely limited by low-nitrogen content soils. Seeds are easily transported from one area to another. They often become established in low numbers in disturbed soil areas like road shoulders, spreading further, invading areas of disturbed soil. The exotic plants often out-compete or displace native vegetation. Together, the invasive traits of these plants and the quantity of high use routes within the route network poses a high potential for non-native plant displacement of native species in the vicinity of heavily used route shoulders.

Impacts to Wildlife

General Wildlife: Impacts are the same as Alternative 3. The most substantial direct positive impact to wildlife within the planning area would result because of having 123 fewer miles of designated open routes in wildlife habitats, in relation to the current “existing” route network (No Action Alternative) in the desert tortoise subregions, and the anticipated reductions in the rest of the planning area that would occur under the Proposed Plan during route designation using the criteria in Chapter 2, Section 2.10.2, as modified under 2.10.3 for the Proposed Plan (i.e., Alternative 3). These benefits would not be as positive to wildlife as Alternative 2, which would have more than 65 miles of additional closures due primarily to the closure of all washes. Wildlife would benefit from the closure of routes that cause conflicts with roosting, nesting and watering sites.

Special Status Animals: Impacts are the same as Alternative 3. Specific biological management tools have been applied under the Proposed Plan to meet desert tortoise DWMA goals and objectives. “Closed” or “Limited” routes would have positive benefits to the desert tortoise and other wildlife.

Impacts to Soil, Water and Air Resources

Impacts are the same as Alternative 3. Impacts to soil, water and air resources would be the same as Alternative 2 within desert tortoise ACECs. Outside of ACECs, except when washes would be part of the primary route network, the Proposed Plan could be expected to result in fewer impacts than Alternative 1 where washes would be presumed open, but somewhat greater impacts than Alternative 2 where washes would be presumed closed. The exception would be in other sensitive areas such as ACECs, UPAs, etc, where 43 CFR 8342.1 criteria would likely result in additional restrictions.

Impacts to Cultural and Native American Values

Under the Proposed Plan, there would be no change to the Cultural Resources Element of the CDCA Plan. The CDCA Programmatic Agreement and Protocol would still govern implementation of the CDCA Plan for cultural resources and would provide processes for the resolution of effects on significant historic properties. Analysis and effects would be the same as Alternative 2, because the route designations of the Proposed Plan would not be substantially different. There would be no substantial change in cultural resource management and no measurable effects on their preservation and protection. Under the Proposed Plan, the CDCA Programmatic Agreement would be amended to provide for the phased identification and evaluation of cultural resources.

Impacts to Recreation Resources and Activities

Motor-Vehicle Access-related Recreation Activities: Impacts are the same as Alternative 3, as modified. Under the Proposed Plan, 80.7 percent of the public lands routes in a route network of approximately 850 miles would be designated open in the desert tortoise subregions. Opportunities for motorized recreational activities would decrease to some extent. The Proposed Plan Routes of Travel network has a 6.6 percent increase in the amount of closed routes, a 7.0 percent increase in the amount of limited routes, and a 13.6 percent decrease in the amount of open routes as compared to Alternative 1. In the remainder of the planning area, lesser decreases in the open route network would be anticipated based on the 43 CFR 8342.1 and Chapter 2, Section 2.10.2 criteria, as modified under the Proposed Plan (i.e., Alternative 3), except in sensitive areas (e.g., ACECs, other critical habitats for listed species).

Opportunities for motorized activities would generally not be affected by limiting parking and camping to within 100 feet both ways from access route centerline because, with few exceptions, such activities do not include parking and camping in the ordinary sense of those terms. The 100-foot limitation would not apply outside of the desert tortoise subregions, which would remain at 300 feet. Stopping, parking and camping limitations may be evaluated during route designation process in other subregions, and other areas may be limited under the Proposed Plan, particularly where there are routes through sensitive species habitat, consistent with the CDCA guidance for limitations in sensitive areas to 100 feet.

Signs would be posted in many areas soliciting cooperation with the route network, as appropriate. In some cases, fencing, barriers, or natural vegetation may be used to prevent unintentional impacts. In addition, interpretive signing and informational kiosks would promote visitor use consistent with management objectives in the desert tortoise subregions. In other parts of the planning area, updated network maps may be the primary informational tool.

Competitive-events related opportunities would be impacted by the Proposed Plan. The opportunity to apply for the Barstow-to-Vegas motorcycle race and other competitive events that may be applied for, consistent with current CDCA Plan criteria, would be precluded under the Proposed Plan outside of OHV Open Areas. Another course may be designated through the plan amendment process, in which case, impacts to competitive recreation use would be the similar to Alternative 1, depending upon the outcome of the planning process. These events have not been run in the Northern and Eastern Mojave planning area since the listing of the desert tortoise in 1989 (1990 race was proposed and denied, see 4.8 for further discussion), so impacts are in the form of future opportunities foregone or delayed outside of sensitive areas pending the outcome of the plan amendment process, should such races be proposed.

Negative impacts to other motor-vehicle recreationists would generally not occur, except for the potential of others being precluded as incidental spectators at these events. There will continue to be more users competing for same number of permits within all of the OHV Open areas. The impacts of the Proposed Plan within the Dumont Dunes OHV Open area would increase somewhat because this would be the only nearby area available for OHV events. See Chapter 4, Section 4.8. for further discussion on the competitive events alternatives and impacts.

Dualsport and other organized, permitted noncompetitive motorized activities would continue to be permitted on open routes and limited routes, except where such activities are specifically precluded on such routes throughout the planning area. Opportunities for non-competitive events would continue to be somewhat higher outside of OHV Open areas, particularly on busy and popular holiday weekends. Programmatic mitigation measures and a standard compensation ratio (5 to 1 in Category I habitat/ACECs. would be used under the Proposed Plan).

Other motor-vehicle related casual use would be somewhat affected by competitive and non-competitive events, but the effects would not restrict long-term access to the planning area. The casual user may find that they do not have access to a particular route for a particular specified timeframe on a particular day, while a permitted event is occurring. These limitations are short-term, infrequent, and widely spaced over the planning area, and create an opportunity to watch the event, if the recreationist is interested in doing so. They tend to occur on well-publicized and holiday weekends.

The same groups that are more affected by increased route closures and limitations under Alternative 2 are more affected under the Proposed Plan, to a lesser degree. One group is technical four-wheel drive enthusiasts. This group would use routes not as a transportation system but for the challenge of the route itself. Some of those routes would no longer be available under the Proposed Plan, and under potentially all alternatives. The Proposed Plan also closes redundant routes, some of which are the result of short-cutting, but some of which can also provide different riding experiences for the four-wheeler.

Other Recreation Activities: Impacts are the same as Alternative 3. Opportunities for non-motorized activities would diminish to a lesser extent than Alternative 2 but a greater extent than Alternative 1, because they would be disrupted, displaced (in time or geography), or rendered impractical or infeasible by the application of routes of travel designation and the resulting decrease in motor-vehicle access to specific locations or trailheads. For the same reason, some non-motorized recreational activities, such as viewing certain species of wildlife, would also benefit somewhat from the Proposed Plan to the extent that they respond positively to isolation from humans or motor-vehicles. Overall, the route network continues to provide for access throughout the desert tortoise Category I subregions, and impacts are minor.

As with Alternative 2, some segments of the population are more greatly affected by the increased route closures and limitations, but to a lesser extent under the Proposed Plan primarily because some washes would be available for use. Hunters, who are the most affected by the designations because of the closure of washes, would have some wash access. Minor washes would only be available by foot or horseback in the desert tortoise subregions. Therefore, non-motorized recreationists are moderately affected by the Proposed Plan within desert tortoise subregions. In other parts of the planning area, additional access may be provided to meet specific recreation destination needs, depending upon the sensitivity of the area (i.e. consistent with 43 CFR 8342.1).

Impacts to Utilities

Impacts to utilities would be the same as Alternatives 2, 3 and 4. The Proposed Plan would have no effect on existing facilities within utility corridors or the maintenance of facilities within these corridors. New facilities may be subject to additional parameters in ACECs, including limitations on new access (see Appendix A).

Impacts to Minerals and Mining

Impacts to mineral access and mining are the same as Alternative 3. The impacts from Proposed Plan would be somewhat greater than Alternative 1 and less than Alternative 2. Under the Proposed Plan, approximately the same restrictions and closures for desert tortoise subregions would apply except that major washes would be available for use. The elimination of routes in minor washes would limit potential for mineral exploration in the southern third of the planning area (354,000 acres). This impact is not anticipated to have a significant overall effect on mineral development. There would be fewer closed or limited routes anticipated for other resources outside of desert tortoise subregions under the Proposed Plan than under Alternative 2, based on the criteria used in Chapter 2, Section 2.10.2, as modified under the Proposed Plan (i.e., Alternative 3). Impacts to minerals and mining would be in the form of the paperwork, financial assurance, and delays required for filing a notice or plan of operations to obtain authorization for access to deposits or mining claims.

Impacts to Vehicle Access

All “existing” routes in MUC L and M areas, that have been individually identified on CDCA Plan maps and subsequent DAG maps, would be designated as either Open, Closed, or Limited routes of travel for motor vehicle use under the Proposed Plan for vehicle access, consistent with 43 CFR 8342.1. The Proposed Plan would provide for a primary transportation network and access to recreation destinations in the desert tortoise subregions, on 354,000 acres. The Proposed Plan would allow existing access to continue on 80.7 percent of the public land routes in 850 miles of the route network in the southern portion of the planning area. Access would also continue in the route network in the remainder of the planning area, pending route designation in other subregions, to occur by the end of June 2004 or a schedule as otherwise agreed to in agreement C-00-0927-WHA.

Other subregions within the planning area would be anticipated to provide similar levels or increased access, where sensitive resources do not occur. Some areas with sensitive resources already have completed route designation, or partial route designation in the potential area of affect, and route closures are currently in place in the areas (ACECs and a few other identified routes in critical habitats of listed species). Other sensitive areas and habitat (e.g., ACECs, critical habitat, sites on the national register of historic locations) may be expected to have higher levels of limitations or closures, consistent with existing guidance (see Chapter 2, Section 2.10.2), as modified under the Proposed Plan, particularly where boundaries are well defined. These will be evaluated in subsequent environmental documents, with public input and review.

The Proposed Plan would result in the closure or limitation of approximately 163 miles of routes on public lands, and include an additional potential loss of access to 6.6 percent of routes through closure and a loss of an additional 7.0 percent of routes that would be limited in the desert tortoise subregions over the No Action Alternative. The Proposed Plan, like Alternative 1 would include implementation of active closure or limitation techniques, visual effects of supplemental signing in some areas, no anticipated changes in existing route maintenance levels, and increased levels of information on routes of travel network in the planning area as subregions are designated, both on the ground and through maps available for public use. The network of routes available for casual motorized use is anticipated to continue to provide reasonable access through the planning area. Overall, recreation users would have overall access to the area, but would have somewhat less access to specific locations based on the route closures. Access limitations would affect some users more than others, as discussed under 4.9.3.5, *Impacts to Recreation Resources and Activities*. Other affected users would include casual mineral explorers (i.e., those not filing a notice or plan of operations). These effects would be somewhat less than under Alternative 2.

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 29.4 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 foreseeable future and lands would be managed consistent with existing laws, regulations and guidance. Authorized and unauthorized activities inconsistent with policy would be terminated. Leases for operating small landfills would be examined. Existing operations would continue through the life of the lease if in compliance with all terms and conditions. State closure procedures would be initiated at the expiration of the lease. For facilities 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. Unauthorized occupancies in the affected area would be resolved through removal and restoration, consistent with existing policy and procedural guidance. (Refer to Chapter 8, 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 were surface disturbances, disruption and compaction of surface soils, loss of vegetation, and loss of associated resident wildlife on approximately 5 acres of the lease site. These impacts are small, due to small size of the landfill compared to the watershed. Future anticipated impacts such as local dust generation during landfill activities would end after closure.

Environmental impacts associated with the Shoshone landfill have also already occurred. These included surface disturbances, 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. These impacts would be small relative to the size of the watershed. Future anticipated impacts at the Shoshone site would end after closure, including disruption of natural drainage patterns and increased erosion to an adjacent drainage.

Standard quarterly groundwater monitoring began at both sites in 1997. No contamination of groundwater has been observed, and none is expected after closure of the landfills.

Impacts to Recreation Resources and Activities

Currently, lands under the No Action Alternative would be managed under the existing MUC Limited guidelines. Because the affected lands would be managed as landfills, recreational opportunities would be nonexistent. There would be no impacts to recreation.

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 affected, or, if state standards can be met, until the authorization expires in 2007.

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

Indirect impacts from the No Action Alternative at the Shoshone site would occur at a much reduced rate, based on continued use of the existing landfill authorization, until site closure and reclamation. If state standards can be met, use would continue until the authorization expires in 2008.

Impacts to Cultural and Native American Values

There would be no specific actions proposed in the No Action Alternative that would affect cultural resources. There are no known cultural resources located within the sites.

Socioeconomic Impacts

Locally, the No Action Alternative would likely result in higher short-term costs for waste management in eastern Inyo County. Long-term costs would be more difficult to predict. Facilities would be expected to have a limited amount of use in the future. Other options would be being explored as medium and long-term solutions to waste management for the area, such as transfer stations and contracting with other facilities. Actual costs would depend upon the strategies adopted and the timing for closure for each landfill.

4.10.2 Alternative 2 (Proposed Plan) - Landfills

Redesignate Tecopa and Shoshone community landfill sites from MUC “Limited” to “Unclassified” to facilitate conveyance out of federal ownership to Inyo County.

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

Direct impacts would be the same as Alternative 1. MUC change is a zoning change that is administrative relative to landfill operation and transfer potential. The landfills would continue operating while transfer options are being pursued, and closure may still result. After transfer to private ownership should it occur, retention of the Tecopa and Shoshone landfills and details would be under the administration of the County of Inyo. If the landfills continued to operate under County control, local dust generation would continue and natural surface drainage patterns would continue to increase. However, because of the small size of these landfills relative to the size of the airshed and watershed, these effects would be inconsequential.

Standard quarterly groundwater monitoring, begun at both sites in 1997, would continue at both sites.

Impacts to Recreation Resources and Activities

Impacts would be the same as Alternative 1.

Impacts to Land Uses

Impacts would be the same as for the No Action Alternative.

Impacts to Cultural and Native American Values

There would be no specific actions proposed in this alternative that would affect cultural resources.

Socioeconomic Impacts

The socioeconomic impacts would be similar to the No Action Alternative except lower short-term costs for waste management in eastern Inyo County would likely occur. The long-term costs would be difficult to predict. Facilities would get a limited amount of use in the future, and other options would be explored for medium and long-term solutions to waste management. such as transfer stations and contracting with other facilities. Costs would depend upon the strategy adopted and the timing for closure of each landfill.

4.11 Wild and Scenic River Eligibility

The Wild and Scenic River Act and federal guidelines require federal agencies, upon determination of eligibility, to provide interim protection and management for a river's free-flowing character and any identified outstandingly remarkable values, until a suitability study is completed. Existing rights are considered. During this interim period all proposals that could affect the Amargosa River, Cottonwood Creek, and Surprise Canyon Creek and their resources would be evaluated against regulatory criteria. Additional limits on uses may occur. Further analysis of potential impacts to all resources and uses would be evaluated during the suitability analysis. Refer to Appendix O, Appendix S and Appendix T for detailed descriptions of outstanding remarkable values that could benefit by this eligibility determination, and would benefit if segments were found suitable and subsequently classified as part of the Wild and Scenic Rivers System.

4.11.1 Alternative 1 (No Action)

Impacts of Alternative I (No Action) are provided as a baseline, i.e., prior to eligibility determination.

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

The impacts of Alternative 1 (No Action) would be no change from the existing situation. Current levels of use are generally acceptable within the range of fallback standards, with some localized impacts from erosion and sedimentation where motor vehicles, pedestrians, or others cross-riparian areas, and bridges or crossings are not adequate to the level of use. Negative impacts to vegetation, invertebrates, soils, and changes in sedimentation loading and other water quality factors can be expected to increase, concomitant with the level of increasing use. (See Appendices for further resource information).

Impacts to Recreation Resources and Activities

The impacts of Alternative 1 (No Action) would be no change from the existing situation. Currently, Surprise Canyon Creek and the Amargosa River receive relatively high levels of recreational use outside of OHV areas. Surprise Canyon Creek is a corridor through wilderness, and includes ACEC lands and habitat for BLM sensitive and migratory bird and bat species. The recreational use in these areas is balanced with and to some degree limited by the sensitivity of the resources. The central Amargosa Canyon includes designated wilderness, ACEC lands, critical habitat for the federally and state endangered Amargosa vole and habitat for listed migratory bird species, as well as a riparian corridor through OHV Open area lands. The use is focused on specific user groups and include both motor-vehicle based users and non-motorized users. Cottonwood Creek receives somewhat less recreational use, and many of its users come from the north and east (Reno Basin), rather than the south and west (LA basin). All three areas receive some users from the Las Vegas and Pahrump Valley areas.

Motorized users would not be impacted by a finding of not eligible, and route designation would be occurring in these areas through a separate process. Non-motorized users may be affected by a finding of not eligible, either positively or negatively, depending on the activities and uses they partake in, and the values that they seek in these areas. The eventual changes to water quality, riparian and invertebrate habitat, wildlife (including migratory bird) habitat could be adverse, if users are seeking these experiences. Likewise, changes specific to preventing non-impairment of outstandingly remarkable values under the Wild and Scenic Rivers eligibility, may not occur (e.g., a water crossing does not get improved, that results in a more primitive, and more difficult hiking experience) (see Appendices for further resource information).

Impacts to Land Uses

The impacts of Alternative 1 (No Action) would be no change from the existing situation. Currently, Surprise Canyon Creek and the Amargosa River have substantial limitations on land uses, due to designated wilderness, critical habitat and other sensitive habitat, and/or ACEC Plans. In the Amargosa riparian corridor, small-scale geothermal development with an associated lease to the County of Inyo exists for public hot baths. Some short-term commercial filming has occurred. Within the context of existing policies and plans, new land uses would be considered in the six areas. It is likely that new land uses that are not short-term, with readily mitigated impacts would be difficult to site, or would require significant analysis, given the sensitivity of five of these areas. Siting in the Dumont Dunes OHV Open Area could occur, consistent with the OHV Plan and ongoing use, which is increasing.

Impacts to Cultural and Native American Values

Under Alternative I, there would be no change to the Cultural Resources Element of the CDCA Plan. There would be no changes to existing management and therefore no specific actions proposed in this alternative that would affect cultural resources. The CDCA Programmatic Agreement and Protocol would still govern implementation of the CDCA Plan for cultural resources and would provide processes for the resolution of effects on significant historic properties.

Socioeconomic Impacts

There would be no impacts from Alternative 1 (No Action) that can be determined at this time. Some impacts may occur from opportunities foregone, but these impacts have not yet been realized, and are therefore too speculative to be measurable.

4.11.2 Alternative 2 (Proposed Plan)

The Proposed Plan determines 6 segments (see Table 2.24, Chapter 2, Section 2.12.2) eligible for Wild and Scenic Rivers designation, and provides interim protection and management for a river's free-flowing character and any identified outstandingly remarkable values, until a suitability study is completed, consistent with Wild and Scenic Rivers Act guidance.

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

The impacts of the Proposed Plan are anticipated to be similar to Alternative 1, and would result in increased protection of resources until a suitability analysis is completed for eligible segments. If outstandingly remarkable values may be impacted by current or future activities, additional measures would be taken to prevent impairment of outstandingly remarkable values prior to a decision on suitability of segments for the Wild and Scenic Rivers System. Current levels of use have been within the generally acceptable range of fallback standards on a landscape scale, based on overall invertebrate and riparian vegetation health in the systems. There have been some localized impacts from erosion and sedimentation where motor vehicles, pedestrians, or others cross riparian areas, and bridges or crossings are not adequate to the level of use. If negative impacts to vegetation, invertebrates, soils, and increases in sedimentation loading and other water quality factors result in unacceptable changes to water quality or other standards, or indicate trends that would lead to potential deterioration of outstandingly remarkable values, the Proposed Plan would keep impacts to acceptable levels or reduce impacts, as appropriate. (See Appendices for further resource information).

Impacts to Recreation Resources and Activities

The impacts of the Proposed Plan are anticipated to be similar to Alternative 1, but may result in some modifications to activities until a suitability analysis is completed for eligible segments, if outstandingly remarkable values may be impacted by current or future activities (see 4.11.2.1). Currently, Surprise Canyon Creek and the Amargosa River receive relatively high levels of recreational use outside of OHV areas. Surprise Canyon Creek is a corridor through wilderness, and includes ACEC lands. The central Amargosa Canyon includes designated wilderness, ACEC lands, as well as a riparian corridor through OHV Open area lands. The use in these areas is focused on specific user groups and includes both motor-vehicle based users and non-motorized users. Cottonwood Creek receives somewhat less recreational use, and draws many of its users from the north and east (Reno Basin), rather than the south and west (LA basin). All three areas also draw users from the Las Vegas and Pahrump Valley areas in addition to the local communities around them.

With respect to Routes of Travel, motorized users would not be substantially impacted by a finding of eligible for the 6 segments, since route designation would be occurring in all of these areas through a separate process, with a full range of alternatives. Their status as eligible may be a consideration in route designation, but would not be a primary factor, since a suitability analysis, with full range of alternatives, has not yet been completed. The data developed in the eligibility reports would be provided as part of the affected environment for the route designation process. Temporary limitations to motorized use of routes within riparian segments or the building of bridges, crossings, route upgrades or other modifications to prevent significant deterioration of outstandingly remarkable values could occur if a showing of negative impacts to an outstandingly remarkable value or substantial downward trend would result in unacceptable levels in the interim period until a decision is made on suitability.

Non-motorized users may be affected by a finding of eligible, either positively or negatively, depending on the activities and uses they partake in, and the values that they seek in these areas. The eventual changes to water quality, riparian and invertebrate habitat, wildlife (including migratory bird) habitat could be positive, if users are seeking these experiences. Likewise, changes specific to preventing non-impairment of outstandingly remarkable values under the Wild and Scenic Rivers eligibility, may occur (e.g., improvement of a water crossing that results in a less primitive hiking experience) (see Appendices for further resource information).

Impacts to Land Uses

The impacts of the Proposed Plan would be similar to Alternative 1. It is likely that new land uses that are not short-term, with readily mitigated impacts would be difficult to site, or would require significant analysis, given the sensitivity of five of these areas. Siting in the Dumont Dunes OHV Open Area could be more difficult under this alternative, but could occur, consistent with the OHV Plan and ongoing use, which is increasing.

Impacts to Cultural and Native American Values

Under the Proposed Plan, there would be no change to the Cultural Resources Element of the CDCA Plan. The CDCA Programmatic Agreement and Protocol would still govern implementation of the CDCA Plan for cultural resources and would provide processes for the resolution of effects on significant historic properties. Analysis and effects would be the same as Alternative 1, because the Proposed Plan would not be substantially different with respect to cultural resources. Currently, sensitive areas receive a higher level of analysis. There would be no substantial change in cultural resource management and no measurable effects on their preservation and protection with the eligibility determination.

Socioeconomic Impacts

There would be no impacts from the Proposed Plan that can be determined at this time. Some impacts may occur from opportunities foregone, but these impacts have not yet been realized, and are therefore too speculative to be measurable.

4.12 Cumulative Impacts

4.12.1 Introduction

As defined in 40 CFR, Sec. 1508.7, a “Cumulative Impact” is an impact on the environment that results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions, regardless of what agency or person undertakes the other actions. Cumulative impacts can result from individually minor, but collectively significant, actions taking place over time.

The entire California Desert Conservation Area (CDCA), and, if appropriate, a wider regional context, is considered in this analysis. In order to understand the cumulative effects of this plan, previous and current actions and plans are identified in Section 4.12.3 that are discussed in the analysis. The cumulative impacts assessment presents a brief, generally chronological review of major changes in land use management in the CDCA for resources and activities/uses that potentially could experience cumulative effects and relates past, present, and reasonably foreseeable actions to proposed NEMO decisions. These resources and activities/uses include vegetation and wildlife; soil, water and air; wilderness; cultural resources and Native American values; wild horses and burros; cattle grazing and allotments; utilities; recreation resources and activities; minerals and mining; vehicle access; land tenure; and socioeconomic resources.

4.12.2 The 1976 Federal Land Policy and Management Act and the creation of the California Desert Conservation Area

In 1976, Congress passed the Federal Land Policy and Management Act (FLPMA). Up to this time, there was no management mandate or comprehensive land use plan to guide land management across the vast California Desert. FLPMA established the California Desert Conservation Area (CDCA). Congress recognized that the desert contains special values for a number of different interests, had fragile ecosystems, natural resources and cultural values that need to be conserved, and was under significant use pressure from large adjacent population centers in southern California.

BLM was to develop a land use plan (for lands managed by BLM) relying on good science and public participation and was to resolve inherent conflicts with values and uses. FLPMA mandated that BLM administer public lands on the basis of multiple-use management. The BLM completed the CDCA Plan in 1980. A number of management tools were included: programmatic management zones, program elements with specific use allocations, and special management areas. The CDCA Plan allocated uses, brought order and regulation, specified environmental protection and mitigation, and required additional planning for a number of areas and uses - including Routes of Travel designations. Meeting the CDCA multi-use management mandate in FLPMA required across the board compromises.

The CDCA Plan decisions included the following:

- Managing species and habitats through regulated uses, general zoning, and creation of special areas with specific management actions to those areas
- Allocating various shrub lands, dunes, and playas as OHV use areas and closing others
- Designating (to be accomplished later) Routes of Travel in limited use management areas
- Providing for a variety of recreation opportunities including OHV, competitive events, appreciation of natural and cultural values, and hunting
- Conserving cultural/Native American values through preservation, survey of sensitive areas, mitigation, and enhancement actions and protocols
- Proposing 2.1 million acres for wilderness designation (use restrictions) and providing for additional wilderness proposals by the public
- Managing mining and rights-of-way through zoning, corridors, and mitigation measures consistent with state regulations
- Allocating specific areas and levels of grazing to livestock grazing and wild horses and burros
- Designating 73 Areas of Critical Environmental Concern (ACEC) for natural and cultural values
- Providing for amendment of the CDCA Plan as conditions change, to keep the Plan current with science and able to respond to public demands.

4.12.3 Major Past, Present, and Reasonably Foreseeable Actions

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 of the most significant of these follows. Whether or not these are individually mentioned in the sections, they have or have the potential for significant effects, based on the amount of land base they may affect or change in land use they could produce, not only within their boundaries, but regionally (at least indirectly, within other parts of the CDCA).

WEMO – West Mojave, a multi-species habitat conservation planning area bordering the west side of the NEMO Planning Area. WEMO, NECO, NEMO, Coachella Valley, and Imperial Sand Dunes collectively encompass most of the California Desert Conservation Area and are undergoing concurrent plan amendments to the CDCA Plan to address protection of sensitive and listed species, and other goals as identified in each plan.

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.

COACHELLA PLAN – The Coachella Valley, a multispecies habitat conservation planning effort in Riverside County and a small portion of San Bernardino County about 100 miles east of Los Angeles. This area includes the Santa Rosa and San Jacinto Mountains Trail Management Plan and encompasses 1.2 million acres.

IMPERIAL SAND DUNES PLAN – This Recreation Area Management Plan covers 227,000 acres, of which approximately 208,000 acres are managed by the BLM.

WESTERN COLORADO DESERT PLAN – This Routes of Travel designation planning process covers the portion of Imperial County south of the Northern and Eastern Colorado planning area.

LAS VEGAS RMP – A recently completed Resource Management Plan adjacent to the CDCA, covering the area bordering the northeastern portion of the NEMO planning area boundary. Decisions were made that affect desert tortoise recovery and livestock grazing in critical habitat and a grazing allotment partially managed by Nevada and California.

COLORADO RIVER MULTI-SPECIES CONSERVATION PLAN – A multi-species habitat conservation planning effort, adjacent to the CDCA in Arizona

FT. IRWIN NATIONAL TRAINING CENTER EXPANSION – A proposal by the U.S. Army to significantly expand their boundary south, east and west of the existing reserve, by 130,000 acres more or less. BLM administered, state, and private lands would be transferred to the U.S. Army.

MOJAVE NATIONAL PRESERVE GMP/FEIS – A recently published General Management Plan for the management of the 1.6 million-acre preserve in the northern Mojave Desert of California that seeks to provide recreational access and also to protect and perpetuate native species, including the federally-listed desert tortoise, in a self-sustaining environment.

DEATH VALLEY NATIONAL PARK GMP/FEIS – A recently published General Management Plan for the management of the 3.3 million-acre National Park in the northeastern Mojave Desert of California seeks to extend existing management strategies to new lands added with the passage of the California Desert Protection Act, to incorporate the designation of the park, including 95 percent of the park as wilderness into the management approach and also to perpetuate native species in a self-sustaining environment.

JOSHUA TREE NATIONAL PARK GMP – A recently published General Management Plan for the management of the National Park in the northern Colorado Desert of California that seeks to extend existing management strategies to new lands added with the passage of the California Desert Protection Act, to incorporate the designation of park, and some park wilderness into the management approach and also to perpetuate native species in a self-sustaining environment.

CALIFORNIA DESERT PROTECTION ACT OF 1994 (CDPA) – An Act of Congress established 69 wilderness areas, including nearly 3,800,000 acres of BLM managed lands, the Mojave National Preserve (MNP), and expanded Joshua Tree and Death Valley National Monuments and redefined them as National Parks. Approximately 3,500,000 acres were transferred to NPS that were formerly administered by the BLM of the 13,000,000 acres managed by the BLM in the CDCA, and included significant portions of grazing allotments, wild horse and burro Herd Management Areas and Herd Areas, and ACEC's. The wilderness areas established on BLM lands was approximately 40 percent of the remaining lands under BLM jurisdiction, and included almost twice the BLM recommendations from the WSA process. With this act, half of the CDCA was included in military reservations, national parks, or wilderness areas. The remaining lands are equally split between private and BLM-managed public lands.

CALIFORNIA WILD HERITAGE ACT OF 2002 (PENDING S. 2535) – A Senate bill to establish wilderness areas in California, including up to approximately 350,000 acres of lands within the CDCA that are primarily BLM-managed lands,

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

TIMBISHA LEGISLATION – A bill signed in November, 2000 that created a Timbisha Tribe Indian Reservation which authorized transfer of approximately 7,500 acres of lands previously under BLM and NPS administration within and adjacent to the Northern and Eastern Mojave Desert Planning Area (in the CDCA, Death Valley National Park, and on nearby lands in Nevada).

URBAN EXPANSION – The expansion in population and supportive developments within and adjacent to the NEMO planning area. The most notable areas would be Baker, CA; Bullhead City, AZ; Las Vegas, NV; Stateline (Primm), NV and Pahrump, NV.

I-15 EXPANSION – Planned features would be truck passing lanes and an agricultural inspection station.

Cumulatively, these plans will cover nearly the entire 25 million acres of the CDCA as well as the narrow strip between the CDCA and the Colorado River. The first seven update existing land use plans with an emphasis on species and habitats issues, while the three NPS plans primarily focus on general management. The first six plans will amend the CDCA Plan. Three plans - West Mojave, Coachella Valley MSCP, and Colorado River MSCP - will also apply to state and private lands as habitat conservation plans (HCP). The first six plans propose to address the recovery of 30 listed species and the conservation of an additional 120 special status species on a landscape scale. Other plans have mission specific goals, but the National Park Service GMPs also address species conservation.

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

4.12.4 Vegetation And Wildlife

Desert habitats are sensitive to disturbances and have a slow rate of natural recovery. Lovich and Bainbridge (1999) described the processes:

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(s). 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 from the mid-1800s to the 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.

Over the last 20 years, approximately 30 species of plants, amphibians, reptiles, birds, or mammals were listed as threatened or endangered under federal and state endangered species acts (ESA). Habitats for most of these species are localized, but habitats for the desert tortoise, Mohave ground squirrel, and Peninsular bighorn sheep cover millions of acres. An additional 120 species are referred to as Special status species. These listings result from a variety of causes including the following:

- Cumulative habitat loss from a variety of uses on both private and federal lands
- Decline in habitat quality due to a variety of factors such as water diversions, habitat fragmentation, and wild fires
- Diseases
- Changes in ecosystem dynamics such as exotic plant invasions
- Natural rarity combined with any of the above.

For these listed species, the USFWS has designated Critical habitat that covers about 5.5 million acres, 60% of which is located outside military reservations, national parks, and wilderness boundaries. Most critical habitat occurs in lower elevations, while designated wilderness areas generally occur at higher elevations in the desert. Congressional designation areas and sensitive species habitat cover a majority of all federal lands in the CDCA.

The listing of species under the federal ESA required federal land management agencies in the CDCA to consult with the USFWS on the effects of land use plans on the listed species. The plans (or amendments to existing plans in the CDCA) will fulfill this requirement. Until the plans are completed, agencies must consult on a case-by-case basis with the USFWS regarding any use authorizations, which may have an effect on the species involved. Some consultations have resulted in temporary use requirements and restrictions that will remain in place until plans and biological opinions are completed. Some requirements are being brought forward into plan proposals.

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 allocated for tortoise recovery in the Piute-El Dorado Critical Habitat Unit on adjacent lands in Nevada through the Las Vegas Resource Management Plan in 1998. Conservation groups have expressed an interest in buying most cattle allotments and making them no longer available for grazing use 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*. *S. 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 would be 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 cumulative impacts.

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 road kills 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 that developed in the 1960's and 1970's in response to increased development and population growth is a major fragmenting barrier for wildlife, especially for slow moving reptiles such as the desert tortoise. Widening of the Interstate would not significantly increase its function as a barrier, but may allow an opportunity to add fencing thereby reducing road kills. Barrier fences would be 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 would be 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 by toxins from exhausts.

Various 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 would be 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 would 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 over the past 15 years. 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 spread the disease (Jacobson et al 1991). Tortoises with URTD have been found in most regions of the California Desert, including the NEMO planning area. URTD is a highly infectious disease, and increased mortality may continue 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 *S. 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 would be deposited in the environment from motor vehicle emissions, or dispersed during dust storms. Homer et al. (1994, 1996) found potentially toxic metals and minerals in the livers and kidneys of necropsied tortoises.

Urbanization in the planning area is centered around a few rural communities and greater Las Vegas, including the Stateline area. The small communities in the desert have been stable for many decades. The Las Vegas areas have experienced a major expansion and addition of new casinos and major golf courses in the region. To date, loss of desert tortoise 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 habitats. 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 adverse impacts. The removal of burros from public lands would directly benefit wildlife. Elimination of burros on 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 disturbances, results in some loss of wildlife habitat, ground cover, and 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, and is generally not good tortoise habitat, but may affect bats and bighorn sheep. Mineral material sales (e.g., sand, gravel, pumice, etc.) would be located in valley bottoms and on alluvial fans that would generally be more in conflict with tortoise habitat. Renewed mining interest in historic mine complexes has also had an impact on bat species that have colonized 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, Ibez 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 motor vehicles would be virtually eliminated, and other associated multiple uses that require motorized access would be reduced. With prohibition, impacts of motor vehicles on wildlife in wilderness areas would be negligible. Some wilderness study areas were not designated as wilderness, but may be added by Congress. 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 in the MNP.

The BLM has several habitat acquisition efforts underway. Among these are small parcels bought from time to time using compensation funds. The largest 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. An exchange involving Catellus Corporation lands recently added 322,500 acres of public lands, including 98,000 acres of tortoise habitat in the NEMO planning area and adjacent regions. These acquisitions increase the capability of federal and state agencies to manage the lands to conserve T&E species.

The BLM has recently acquired several riparian habitat parcels. The parcels were acquired through exchanges with private landowners and donations from the Nature Conservancy. These negotiations partially fulfill recommended land acquisition actions prescribed in the Amargosa Canyon and Grimshaw Lake ACEC Management Plans. Additional BLM riparian habitat acquisition has been recommended.

There are no military bases in the planning area. China Lake Naval Air Weapons Station, Ft. Irwin, and the Marine Corps Air Combat Center at Twenty-nine Palms are nearby. Ft. Irwin and the Air Combat Center are used extensively for vehicular and airborne maneuvers, and both encompass considerable amounts of desert tortoise habitat. Only Ft. Irwin contains designated 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. Increasing the size of the base by approximately 130,000 acres, more or less, may result in increasing the level of conservation on surrounding public lands in order to adequately conserve the threatened desert tortoise and other listed species. This would be addressed in the West Mojave Plan.

The Las Vegas Resource Management Plan (RMP) and Las Vegas Valley Habitat Conservation Plan (HCP) implemented the Desert Tortoise (Mojave Population) Recovery Plan goals on public lands and private lands, respectively, in Nevada adjacent to the NEMO planning area on the east. To the west, the West Mojave Habitat Conservation Plan (WEMO) is currently in preparation. To the south, the Northern and Eastern Colorado Desert (NECO) bioregional planning effort is in preparation. WEMO and NECO would implement the Desert Tortoise Recovery Plan goals within their respective areas, providing management prescriptions and protection for many T&E and special status plants and animals.

Impacts to wildlife and special status plants from human activities would generally be low in the NEMO planning area. Human impacts would be higher in the adjacent West Mojave and to the east in Las Vegas Valley. A large part of the federally land surrounding the NEMO planning area is in reserves (i.e., Death Valley National Park, Mojave National Preserve, Fort Irwin NTC), as well as the land within NEMO—1.2 million acres of BLM wilderness, and another more than 200,000 acres of WSA). 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, has impacted habitats in Shadow Valley for desert tortoises and other wildlife. Interstate Highways and adjacent corridors fragment habitats, and inhibit animal movements within the planning area and environs. Large mammals, especially bighorn sheep, would be affected.

4.12.5 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 that include management practices that would benefit water quality over the planning area. Several of the ACEC and T&E plant proposals and Wild and Scenic River eligibility would improve riparian habitat 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 would be based on natural conditions.

Air Quality: Air quality has been a problem in most industrial centers since the 1800's, but has continued to decline in the 20th century, as development and population pressures have increased. The Los Angeles Air Basin has consistently been one of the five dirtiest air basins in the country for the last twenty years, and has shared its air quality with inland desert regions as a result of steady marine westerly winds. The cumulative effects of industrialization, growth in our love as a society with the automobile, and development (e.g., elimination of natural ground cover and its innate ability to protect against wind erosion in the desert), in combination with our natural desert environment (windy) resulted, in the 1990's, in most of the Southern California air basins being listed, one after the other, as airsheds not in compliance with various standards of the Clean Air Act. These listings apply to particulate matter smaller than 10 microns (the most widespread pollutant), ozone, and, depending upon the location, various other SOX, NOX and associated industrial pollutants. The result has been a need to develop State Implementation Plans, including strategies on public lands, to maintain current levels of emissions from activities or reduce emissions in order to improve air quality.

OHV use, construction, mineral exploration and other activities would be affected by the NEMO plan. Resulting changes in use and locations would impact local air quality, and changes in use levels would impact regional air quality.

Factors considered in determining significance of effects include:

1. Applicable state or federal ambient air quality standards. Both federal and state standards have been established for criteria air pollutants.
2. An action that would normally have a significant effect on the environment if it violates any ambient air quality standard, contributes substantially to an existing or projected air quality violation, or exposes sensitive receptors to substantial pollution. An action would have a significant effect on the environment if it results in substantial air emissions or deterioration of air quality, creates objectionable odors, or alters air movement, moisture, temperature, or climate.
3. Additional criteria establish significance for specific sensitive airsheds, such as certain national parks and wildernesses (Federal Prevention of Significant Deterioration requirements).
4. There are airsheds within the planning area that have been designated as federal non-attainment areas. Consequently, the impacts analysis must consider an additional requirement. Under the Clean Air Act (176(c)) and 40 CFR part 51 subpart W, a federal agency must make a determination that a federal action affecting such airsheds conforms to the applicable state implementation plan. A State Implementation Plan has been developed for greater San Bernardino County for PM₁₀.

Particulate matter (PM₁₀) is the only air pollutant likely to be affected by the proposed plan or other alternatives. Overall, PM₁₀ emissions would diminish in the planning area with all considered alternatives. The No Action Alternative would result in a reduction in overall emissions. This is the same for all alternatives due to the decrease in the mileage of unpaved roads and the DWMA prescriptions. The DWMA prescriptions include a 1% limit on surface disturbance, seasonal limits on ground disturbances, reclamation requirements, and other strategies that minimize disturbed ground. Exposed bare ground is sensitive to wind erosion, which is a significant source of particulate matter.

The proposed plan amendments would decrease vehicle travel on unpaved public land routes due to route closure and/or rehabilitation. Route closures and rehabilitation, plus restrictions on vehicle-based camping and new mining exploration, would also result in less disturbed surface area exposed to the wind. Vehicle camping would be limited to 100 ft. instead of 300 ft. from roads and mine exploration would require a plan of operations or notice. Improvements in air quality would be partially offset because some of the remaining available public land routes and open areas, including the Dumont Dunes area increased traffic loads. Some other land-disturbing activities would be relocated within the planning area. These shifts would mostly be within San Bernardino County. However, some vehicle travelers may be moving away from the non-attainment area towards toward Inyo County, which is currently in attainment of PM₁₀ standards

Because an overall decline in PM₁₀ emissions is expected to result from the proposed plan amendments, neither a conformity determination with respect to the State Implementation Plans nor a Prevention of Significant Deterioration analysis is necessary.

The proposed plan amendments would have very little impact on PM₁₀ emissions from residential, commercial, or industrial sites, or from the development of sites on private lands, primarily in urban areas. The development expected on private lands is governed by events other than the proposed plan amendments. The proposed plan would have no effect on emissions on military lands. Major transportation corridors through the planning area would be anticipated to expand in the future. These expansions may result in further short- and long-term disturbances within the corridors that contribute to air pollution. Existing and/or expected air quality rules require air quality permits for most major construction/demolition activities, particularly in non-attainment areas.

Impacts to air quality under the No Action Alternative would be somewhat higher than for the proposed plan and other action alternatives, based on relatively higher levels of disturbances and increased vehicular use of unpaved roads. Relative to other regional impacts to air quality, these differences are insignificant. Overall, the PM₁₀ emissions would stay the same or diminish under all alternatives, including the No Action Alternative, based on the factors listed above in the cumulative impacts section, including State Implementation Plan requirements.

The impacts of all alternatives on air quality, when added to other past, present and reasonably foreseeable future actions of other federal or non-federal agencies or persons would not result in significantly negative effects, and actions approved under the Northern and Eastern Mojave Plan would not exceed *de minimus* levels.

4.12.6 Wilderness

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

The Fort Irwin expansion proposal would eliminate four wilderness study areas from further consideration as potential wilderness. This may be offset by new wilderness designations. Congress is currently considering the designation of more wilderness areas (550,000 acres), to resolve current remaining Wilderness Study Areas. Some, but not all, are associated with Fort Irwin alternatives that are not part of the current expansion proposal. This could lead to additional lands with substantial limitations to access and uses within the CDCA. The current strategy is to resolve the WSA issue, one way or another (designate them or release them from further consideration, in the current bill, if the Fort Irwin question gets resolved.)

The designation of additional lands as wilderness would reduce impacts from uses, including livestock grazing, new mining, rights-of-way, and vehicle access. Other uses, such as livestock grazing, wildlife management, and access to and use of private lands require a higher standard of demonstrated need for installation of facilities.

The Wildlands/Catellus Corp. exchange reduced the potential for degradation of wilderness values through development of non-federal lands within wilderness. Population growth in western Nevada, particularly in Primm and Pahrump, could place increased pressure on wilderness use near those areas. If proposals for privatization of lands around the golf course southwest of Primm, NV are accommodated, more use could occur within wilderness. There is an upward trend in the condition of wilderness values within the planning area, which is anticipated to continue.

4.12.7 Cultural Resources And Native American Values

Cumulative impacts from the 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, totaling 140,000 acres, more or less.

In contrast, lands acquired from the Wildlands/Catellus Corp. has resulted in a net gain of cultural resources managed by the BLM, and generally these acquired lands have lower levels of multiple-use (i.e. wilderness or critical habitat for listed species). CDPA, with wilderness designation, would protect cultural resources within 3.8 million acres of designated wilderness, and potentially another half million acres in the current bill under consideration.

Sensitive historic and prehistoric cultural resources within the California Desert District would continue to be impacted by general recreation activities, mineral exploration, grazing, unguided site visitations and vandalism. The incremental loss of cultural resources from these casual use activities has incrementally increased as visitation to the desert and knowledge of sites has increased. There would be continued incremental loss of cultural resources due to inadvertent and authorized actions when mitigation measures result in data collection. Overall, the NEMO plan would have a negligible cumulative effect on cultural resources on public lands within the California desert.

4.12.8 Wild Horses And Burros

The Wild Horse and Burro Act was passed in 1971 for the protection, management and control of wild, free-roaming horses and burros under the administration of the BLM. The policy established in the Act was for the animals to be managed in balance with other uses and the productive capacity of their habitat. Herd range was limited to the habitat they were using at the time of the passage of the Act. Nine herd management areas (HMAs) were established for burros in the CDCA plan to meet the Wild Horse and Burro Act objectives. Five of these have been subsequently eliminated through plan amendments due primarily to conflicts with adjacent land managers (China Lake military base) or resource allocation conflicts (the small Morongo and Coyote Canyon herds).

The passage of the California Desert Protection Act and transfer of lands to the National Park Service affected the status of additional burro HMAs. The Park Service is not governed by the Wild Horse and Burro Act. The CDPA placed the majority of herd management and retention areas for wild horses and burros in the Northern and Eastern Mojave Desert under the management of the National Park Service. Their policy is elimination of feral animals, which include wild horses and burro. The NPS therefore has eliminated burros from the Mojave National Preserve and Death Valley National Park under their GMP documents.

Figure 8b, (Chapter 8) delineates burro ranges that show BLM-managed HMAs prior to the passage of the CDPA. Portions of four HMAs remain within the NEMO planning area, and two HMAs are within the NECO planning area. The elimination of the Chicago Valley burro HMA and the Clark Mountain HMA for burros is an element of the Proposed Plan. Taken together with the previous changes from the time of the first designation of HMAs for wild horse and burros in the CDCA Plan, it contributes to a substantial cumulative reduction in available acreage for burros, although the Appropriate Management Level was not large in these two areas. This leaves a total of 563,492 acres remaining for the management of burros in the California Desert District. The remaining HMAs in the NEMO planning area either do not have populations of burros (Piper Mountain) or can't support year-long burro populations on public lands (Waucoba/Hunter Mtn. and Lee Flat HMAs).

The Chemehuevi and Chocolate-Mule Mountains HMAs within the Northern and Eastern Colorado Desert planning area, would be the two remaining viable burro HMAs within the CDCA with prescribed management levels under the NECO proposed plan of 108 and 120 burros, respectively. The remaining HMAs has appropriate management levels below the genetic effective population size for a wild herd described by Singer and Zeigenfuss (2000) (as currently do Chicago Valley and Clark Mountain). Thus the cumulative effects on burros in the CDCA are that they are systematically being eliminated from most areas by the combination of several factors. These include the higher priority for forage to desert tortoise and, in habitat with limited forage, cattle grazing-which is more readily controlled, on BLM-managed public lands and the CDPA, which transferred non-critical burro habitat to the NPS.

The NEMO plan has a range of alternatives from no changes from the existing situation regarding burro herds remaining on public lands, to the complete elimination of burros in critical desert tortoise habitat in the East Mojave Desert. There would be no substantial difference in the regional cumulative impacts from these alternatives, given the small size of these two herds, and their lack of genetic viability at AML. The limitations to existing herd areas in 1971 imposed by the Wild Horse and Burro Act have not provided the greatest flexibility in the identification of alternatives, as the existing areas have been transferred to other agencies or designated as critical habitat for a listed species. Two year-round burro herd areas and two seasonal herds remain in the CDCA that would be the focus of management efforts of wild burros.

4.12.9 Cattle Grazing (And Allotments)

The CDPA placed some grazing allotments partially or completely within the boundaries of Death Valley National Park and Mojave National Preserve. The Mojave National Preserve administration has sought willing buyers to purchase the allotments within the boundaries of the Preserve. The overall expressed goal identified in the Mojave National Preserve GMP is to retire the allotments within the Mojave National Preserve. The Death Valley National Park is following a similar strategy through acquisition from willing sellers. Four former BLM allotments within MNP have been retired, comprising 65 percent of the grazing on the preserve, or 24,926 AUM. Four allotments remain within the MNP. Under the GMP, the NPS portions of two other allotments would be acquired via third party conservation groups and retired. Cattle grazing would be removed from these areas as well, comprising an additional 1,224 AUM. Three former BLM allotments within DVNP have also been retired. One allotment remains within the DVNP, Hunter Mountain allotment, which may be authorized at up to 1,105 AUM and includes standard access and improvement restrictions based on location of the allotment within wilderness.

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 motor vehicles, equipment and development of new range improvements have made the grazing operation more difficult for the permittees.

The Fort Irwin proposed expansion includes grazing allotments. If the proposed expansion is approved, allotments could be purchased, and grazing relinquished. The livestock industry in the California Desert Conservation Area would be impacted as a whole by the NEMO plan. The NECO and WEMO plans are considering a spectrum of alternatives ranging from no changes in grazing operations, through removal of grazing within critical desert tortoise habitat. No allotments in the NEMO planning area overlap the NECO or WEMO planning areas. The livestock industry in the California Desert Conservation Area is encompassed by the three plans, including NEMO, and would be impacted.

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 drop in stocking levels and seasons of use could occur, depending on the status of desert tortoise recovery.

The Proposed Plan Amendment would result in the loss of potential ephemeral grazing 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 ephemeral forage would be required within DWMA's for spring turnout of livestock. The loss in ephemeral and temporary, non-renewable grazing use would result in the permanent loss of grazing on several allotments. If the Proposed Plan Amendments are chosen in WEMO and NECO, similar losses in grazing could occur.

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

4.12.10 Utilities

There would not be adverse cumulative impacts on utility corridors. Existing programmatic biological opinions, with little change or as updated herein, will continue to provide for projects within corridors that have been approved through the CDCA Plan. Constraints have been placed on the use of existing utility corridors by the CDPA due to wilderness designation, and transfer of lands to the Park Service, and the expansion of Interstate and other highway corridors that are co-located with the utility corridors, the procedures proposed by the NEMO and other bioregional and HCP plans would be insignificant.

4.12.11 Recreation

The California Desert Protection Act (CDPA) created 69 wilderness areas covering approximately 3.8 million acres to be managed by BLM and transferred approximately 1.9 million acres of land to NPS administration within the California Desert, with large areas of the areas transferred to NPS and existing NPS lands in the CDCA also designated as wilderness. Recreation opportunities within designated wilderness and units of the NPS system were moderately to substantially modified, in particular those on wilderness lands.

On the one hand, recreational opportunities for those that seek isolation, and backcountry horseriding and hiking opportunities rose dramatically with the passage of the CDPA. Some of these users may have more difficulty accessing previously used trailheads, via motor vehicle. On the other hand, recreation opportunities traditionally offered to visitors on BLM administered lands that are dependent upon vehicular access, such as backcountry motor-vehicle touring, four-wheel technical driving, and/or involve collection of hobby rocks or biological specimens have been substantially decreased. Recreational opportunities for hunting, birding, wildlife viewing and other wildlife dependent recreational endeavors may be positively or very negatively affected by the changes, depending upon a user's need for motorized access to locations.

The designation of wilderness decreased the potential for siting of competitive and non-competitive event-related recreation under the existing CDCA Plan criteria, because fewer lands are available from which to site, CDCA-wide. Some of the competitive race courses and corridors were also affected. The bioregional plans would affect competitive even-related racing, based additional on resource conflicts. Taken together, the cumulative impacts to competitive event-related recreation, since the late 1980's, is significant, based on these, as well as NEPA analysis of existing races. The effects to non-competitive events are moderate, based on the change in status of these lands from WSA to wilderness. The primary effects have been since the WSA designations, the difficulty in a few areas (e.g., east of Death Valley Junction) in locating an event off-pavement due to the number of now designated wilderness areas. The current wilderness legislation under consideration (SB 2535) would remove motor-vehicle use, including potential dualsport events, along a popular section of the Tonapah and Tidewater Railroad out of the Dumont Dunes OHV Area. The section in question runs from Salt Creek ACEC, south to approximately the Riggs siding.

On balance, opportunities would be cumulatively affected, based on the amount of public lands involved and the affects to the majority of recreational users. These users are heavily dependent on motor-vehicles for access in most desert endeavors and have a limited hiking or horse riding radius based on the climate. This would be the case, whether or not route designation occurs. The relative contributions to the cumulative picture in the CDCA of route designation within the NEMO planning area, and in the NECO planning area to the south are small. Further to the west and southwest, the route designation efforts may have a relatively larger contribution in this regional picture, based on their closer proximity to populated areas and resulting higher conflicts. All opportunities would be further limited if the Ft. Irwin expansion occurs. Also see Vehicle Access discussion in section 4.10.10.

4.12.12 MINERALS AND MINING

Compared with withdrawals from other legislation such as the California Desert Protection Act and the Fort Irwin military land, restrictions from the NEMO plan would be relatively minor. Although Amargosa vole critical habitat and potential designation of Wild-River status could result in a withdrawal under future planning, the impacts on access and development of known mineral resources as well as jobs and local economies would be anticipated to be minor because of the low potential for mineral occurrence and development.

Cumulative effects from CDPA in particular, were substantial. Forty of the forty-nine mineral-commodities with identified mineral potential occurrence in the CDCA have a third to all of their potential occurrence locations in wilderness areas. This potential may be low, moderate or high, and is not a reflection of potential for development. While current and future economic values of minerals in these areas are not known, new mineral exploration, location, and development are not allowed in wilderness areas, except where a validity exam establishes a prior right. A few minerals have known mineral potential and are regionally significant. These would be excluded from exploration and development, except where there are existing claims, and validity exams establish the prior right. Some claims in known mineral areas were filed when the wilderness legislation was being developed, to provide for validity exams. The areas of unknown mineral potential are where development opportunities have been foregone for the reasonably foreseeable future. Wilderness designation is not an irreversible and irretrievable loss.

The CDPA also precluded complete access or motor-vehicle access to half of the most popular rock hounding areas, that are now in NPS lands or within wilderness areas. Hobby rock and mineral collecting is one of the more popular casual recreational uses in the NEMO planning area. It is not allowed in national parks, and in BLM wilderness areas, it is dictated by practicalities of walking distance, temperatures, and the weight of minerals.

Prospecting, because it is dependent on vehicular access, would be discouraged in wilderness and by route closures. This concern is tempered by the fact that route designations and closures would also occur under the No Action Alternative. Vehicular access can be achieved through a plan of operation or mining notice, unless lands are under a withdrawal. 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 are locatable minerals if they occur in National Park Service lands or special management areas such as ACECs. Within desert tortoise ACECs (DWMAs), in the NEMO planning area, gravel operations would be provided for under programmatic consultation.

4.12.13 Vehicle Access

Motor vehicle access and opportunities for recreation are closely linked in the California desert. Route designation in this Proposed Plan to implement the CDCA Plan and 43 CFR 8342.1 would limit vehicular access to some BLM administered lands (e.g., approved routes including washes). Additional route designation closures and limitations in the remainder of the planning area to occur by 2004, using the criteria identified in the Proposed Plan would be expected to have similar results, or be more limited in scope (i.e., result in fewer closures), depending on the sensitivity of resources in the subregions. The incremental decrease proposed in this planning effort is small. However, it would be added to the complete removal of access experienced in recent years in many areas totaling 3.8 million acres due to the passage of the California Desert Protection Act and another potential wilderness designation that is currently being considered on an additional 350,000 acres within the CDCA that is primarily BLM-managed lands. However, much of the acreage affected by the CDPA contained few vehicular access routes, and wilderness corridors have been provided along some of the main transportation arteries that did exist. Similar route designation efforts in the rest of the CDCA to comply with the CDCA Plan will result in some closures and limitations. Although route designations were anticipated by the CDCA Plan, designated wilderness areas were recommended to be about one-half their current levels. High sensitivity zones were recognized for many resources, including sensitive species, but the areal extent of ACECs and HMP Areas was smaller than those being considered under many of the current bioregional plan alternatives, including the NEMO Proposed Plan, based on information on critical habitat designations and/or other biological and impacts information provided since 1980.

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 have occurred by a foreclosure of substantial portions of the public access network on public lands that is no longer available by motor-vehicle or has significant restrictions to access, and route designations further contribute to those impacts by providing some limitations to access on the remaining public route network. These impacts are somewhat offset by the provision of a reasonable public access network, that is usable and meets public needs.

Any restrictions on motor vehicle access – the closure of routes and the establishment of washes closed zones other than primary transportation wash routes in desert tortoise ACECs—cumulatively affect opportunities for motorized recreation. The number of routes on which one may drive for pleasure, or enjoy “touring” activities, would decrease. There is an associated decrease in opportunities for vehicle camping in conjunction with increasing limitations on access. This decrease in vehicle access opportunities as a result of NEMO is not significant because the primary access routes and access to recreation destinations are substantially maintained, and the lands designated as wilderness under CDPA had little existing vehicle access. Route designations particularly affect access by elderly or those with mobility restrictions who cannot walk, ride horses or gain access through other non-mechanical means, hunters, and four-wheel drive enthusiasts. Various alternatives were evaluated in the NEMO Plan in order to take this loss into consideration, consistent with the guidance in 43 CFR 8342.1.

4.12.14 Land Tenure

From the perspective of development, the California Desert remained a desolate area for the first few decades of the 20th century. It was pass-through country for highways, railroad, and utilities and had episodes of mining and grazing in several localities. Natural biotic communities generally flourished. Scattered towns, industrial centers, and infrastructure were established to support trans-desert uses and mining. In the 1930s, Death Valley and Joshua Tree National Monuments (now national parks) were designated. In the 1940s, several large military reservations were created for military training, testing and staging areas. The aggregate of these national monuments and military lands totaled about six million acres, or one-quarter of the CDCA, which encircles about 25 million acres. These designations affected some public uses and access. Until the 1950s, relatively little of the desert had been visited with any intensity by humans for economic or social purposes, except for military uses, livestock grazing and urban areas along rivers. By the 1960s, uses in the desert were increasing, meeting a variety of new demands of adjacent, ever-expanding southern California population centers. A general concern arose over surface disturbances, which lead to losses of natural and cultural values, and tensions developed among various public interests.

Significant changes in land ownership patterns and management have occurred and continue in the planning area. Land exchanges have occurred or would be underway to implement the provisions of the California Desert Protection Act such as acquisition of wilderness. 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) of which 103,000 acres would be in the NEMO planning area. 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, within the planning area. If an expansion of the National Training Center at 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 -the latest proposal is 130,000 acres, more or less. Cumulatively, the effects of the NEMO planning effort land tenure changes as outlined in Appendix N would be 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 potential losses of tax revenues.

4.12.15 Socioeconomic Resources

Implementation of fallback standards has resulted in some socioeconomic impacts to public land users. Lessees with cattle operations would be affected over the long-term with changes in current grazing practices needed to meet standards under all alternatives. As public lands health and forage improves and resource objectives are achieved, benefits from more flexibility in grazing 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 generate additional revenue to communities from visitations. 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 allocated to tortoise conservation in the Piute-El Dorado Critical Habitat Unit in Nevada. The potential elimination of competitive events 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 racecourses. All of these economic effects are not considered to be significant.

The NEMO economic sphere of influence includes the population that resides and works around the 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 area⁸. This would be partially offset by a reduction in jobs and the associated reduced proprietor income from the loss of grazing on allotments, both on public lands and adjacent to the Mojave National Preserve. 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 cattle and travel related services, the positive and negative impacts appear minor relative to total employment in the region, and would be locally focused. 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 foreseeable activities may have substantial economic impacts that cannot be anticipated at this time⁹.

4.12.16 Summary

What follows is a brief summary of cumulative impacts, CDCA-wide. As other plans continue to be developed and the picture becomes further clarified, discussions of cumulative impacts can be updated.

- For urbanizing areas on private lands, areas of development and habitat preserves will be defined and local governments and land owners should benefit from plan-level incidental take permits and find project-level regulatory relief with HCPs. Intermingled public lands in these areas will largely be dedicated to habitat conservation.
- For remote private lands, county governments project little to no growth due to lack of water and infrastructure. Federal lands in key locations such as freeway exits would be made available for development.
- Off Highway Vehicle (OHV) use will continue to be focused in OHV open areas. Access on routes of travel, including navigable washes, will be designated as open, closed, or limited use as required in the CDCA Plan and CFR regulation. The nature and array of designations vary from plan to plan according to routes inventories, access needs of stakeholders, planning criteria, and distributions of sensitive species. Since uses and needs change over time, it does not necessarily follow that all routes are equally needed today. Executive orders and regulations require BLM to make judicious review of access for needs, evaluate conflicts and make decisions. As a result of route designation, the number of currently available routes will probably be reduced by moderate levels. Routes designations do not affect current or future access granted under specific uses authorities. In other areas valued for hobby rock and mineral collecting, camping, and hunting and area near urban centers, washes would be available for motorized-vehicle use. Routes designations made in these plans will not affect the resolution of RS2477 claims. Stopping and parking will continue to be 300' throughout public lands except 100' inside desert tortoise DWMA's and other sensitive areas. There should be no further unauthorized new proliferation of routes on federal lands.
- Opportunities for competitive vehicle events outside open areas will be reduced due to natural resource concerns and cultural values.

⁸ 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 would be anticipated to spur this increased visitation.

⁹ Dean Runyan Associates – Northern and Eastern Mojave Planning Area: Economic Impact Analysis, 24 June 1998, prepared for the National Park Service.

- Mining would be little affected. A 1% surface disturbance limit should not affect uses overall given the reasonable foreseeable future scenario, as long as use applicants and BLM officials are judicious in locating uses, minimizing disturbances, and diligent in disturbance restoration. There should be no negative effects on energy projects.
- The situation for mining also applies to siting future rights-of-way. CDCA Plan utility corridors remain unchanged. In the NEMO planning area, several large utility projects have recently been sited. Similar future projects may arise for water conservation-transfers and energy/petroleum transmission due to increased trade fostered by the North American Free Trade Agreement (NAFTA).
- In the NEMO planning area, the proposed plan would eliminate one herd management area with 44 AML in a desert tortoise DWMA and one herd management area with 0 AML. Three other remaining herd management areas remain in NEMO—one has no burro population at present and the other two cannot support year-round burro populations on public lands (other lands are NPS and they determined in GMP to eliminate). Two herd management areas remain in NECO.
- In DWMA's, most ephemeral forage would be allocated to the desert tortoise and other native species. Livestock grazing lessees would be able to sell their perennial operations, at which time those allotments would be unavailable for livestock grazing. This approach for perennial allotments provides for long-term recovery of the desert tortoise without financial impacts to the livestock operator. Decisions for ephemeral operations would shortly follow the NEMO Record of Decision. Livestock operators would be little affected by ephemeral grazing decisions, since they have no on-site range improvements and permanent herds. The total economic effect of reduced livestock grazing in the CDCA is slight, given the sparse and infrequent nature of available desert forage.
- Land acquisition would continue in order to increase habitat manageability and investment in conservation management areas. Land acquisitions would only occur with willing sellers. This allows private land owners to sell their lands which otherwise would be difficult to sell. Disposal of federal lands will help mitigate, or off-set issues of tax base loss to local governments and encourage growth adjacent to existing areas of development.
- Implementation costs would be relatively high for tortoise fencing on major highways, habitat improvement, installation of access signage, land acquisition, and monitoring commitments for listed species.
- Surface disturbance would be less in desert tortoise ACECs (DWMA's) and investment in restoration would be greater for both new and preexisting disturbance. The cumulative surface disturbance limit in DWMA's will encourage new projects to be located in areas of lower value habitats, thereby supporting conservation and reducing development costs.
- Cultural Resources will be better protected, especially where they are co-located with special status species or located in designated conservation areas. Cultural resources will also be protected by the commitment to end unauthorized proliferation of new routes.

BLM's 1980 CDCA Plan resolved issues of use and protection and continues to guide management in the NEMO planning area. Today, however, large areas of the CDCA have been designated as critical habitat for about 30 species, including the desert tortoise. While designations and current plans have contributed to the conservation of species, fundamental recovery and conservation of a total of 150 species remains to be resolved in further land use planning, CDCA-wide.

The NEMO plan would have a positive impact on the CDCA by protecting three federally and state-listed animals (desert tortoise, Amargosa vole, and least-bells vireo) and two federally listed plants and their habitats, as well as conserving riparian and upland communities and species, including various special status plants and animals. Certain use issues and related problems of land administration would also diminish. These results would be achieved primarily through adoption of standards and guidelines for land health, establishment of desert tortoise ACECs (DWMAs), the Amargosa River ACEC, Carson Slough ACEC, with strict management provisions for land use activities and habitat improvements in ACECs, wild and scenic river eligibility, zone changes in sensitive areas, route designation, and adjustments to current grazing management, wild burro herds, and some other programs. The focus of strategies is on public lands, which comprise approximately 87 percent of the land base.

Many public comments on the draft plan/DEIS indicate that NEMO plan decisions would contribute to significant adverse cumulative effects, particularly to access and use of desert resources. However, in light of past actions and the potential for cumulative change from all current plans, BLM analysis shows that NEMO decisions would be cumulatively small and spread across several programs. With the amount of land withdrawn from mineral and land entry through Congressional designations, NEMO proposes no additional withdrawals and emphasizes addressing impacts through location, design and mitigation. Mitigation and compensation costs would be higher in more sensitive conservation areas and lower in less-sensitive areas.

Based upon the NEMO inventory of routes of travel, a lower proportion were closed in the desert tortoise subregions by the CDPA than in the rest of the planning area because of the relatively lower proportion of wilderness in the desert tortoise ACECs—under 15 percent—vs. 40 percent in the overall planning area. This means that, in considering route designations in the remaining subregions of the planning area, relatively large areas will have been closed as a result of the CDPA, except for any non-wilderness corridors provided in the legislation. The opportunity for competitive vehicle events is reduced with the closure of the Barstow-to-Vegas race course. About 70% of the race course is within a proposed desert tortoise ACEC, and previous monitoring results have shown substantial impacts.

The CDPA placed 10 grazing allotments under the NPS, all of which are proposed to be eliminated. Reallocation of grazing forage in BLM plans will affect several more allotments, including about 60% of the area of sheep allotments in the CDCA (none of these are in the NEMO planning area). In NEMO, the reallocation of forage on the one ephemeral allotment has an immediate effect on potential livestock operators, but since ephemeral grazing allotments have no on-the-ground investment in facilities or on-site herds, there would be no financial loss. In addition, the operators do not depend upon these allotments since they only support useable forage one out of ten years (on the average). The effect on the perennial/ephemeral operation limits options but provides the operator choice in time to discontinue grazing and he would most likely receive financial compensation. The contribution of desert livestock grazing to the local economy throughout the CDCA is extremely small by the very nature that desert forage production is low.

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

All undertakings that involve ground disturbing activities would require site specific cultural analysis which may include surveys, recording of historic and prehistoric sites, and determinations of eligibility of sites to the National Register of Historic Places. Potential impacts to Native American values would be analyzed. Mitigation measures would be identified and implemented if necessary. Avoidance of impacts to cultural resources is the preferred mitigation measure, but is not always possible or feasible. A decision to mitigate impacts to cultural resources by data recovery, instead of avoidance and consequent removal of cultural resources from the area constitutes a residual impact to the site. Sites would rarely, if ever be completely excavated. Mitigation by data recovery results in a steady loss of archaeological sites, and reduces opportunities for interpretation in their natural context. Data recovery may negatively impact Native American values that cannot be mitigated.

4.13.4 Wild Horse and Burro

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

4.13.5 Cattle Grazing (and Allotments)

Allotments no longer available for grazing use in DWMA's would be lost for the reasonably foreseeable future. Allotment closure would mean a loss of livestock production in the DWMA's. Abandonment of range improvements may lead to their deterioration and loss unless they have value to wildlife.

4.14 Long Term Productivity Versus Short Term Use

This section combines the discussion of standards and guidelines and threatened and endangered species. A range of alternatives was considered during this Environmental Impacts Statement. Alternative 1 addresses no action for all T&E proposals and fallback standards and guidelines. The rest of the alternatives use regional standards. All T&E proposals would be arranged on a scale from more conservation balanced (Alternative 2) to more use or access balanced (highest numbered alternative) plus the Proposed Plan.

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 could 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.

Proposed Plan: 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 similar to Alternative 3.

4.15 Environmental Justice

Executive Order 129898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, requires each federal agency to “Identify and address, as appropriate, disproportionately high and adverse human health or environmental effects on minority populations and low-income populations” (CEQ) developed guidance for assessing Environmental Justice with NEPA procedures (“Environmental Justice Guidance under the National Environmental Policy Act”, 1997). Following CEQ guidance, the BLM analyzed the effect of its actions on human health which include bodily impairment, illness, infirmity or death, and environmental effects which include ecological, cultural, human health, economic or social impact.

The analysis of the environmental consequences of the proposed alternatives, including the proposed plan, did not demonstrate or reveal any direct or indirect effects on human health. The alternatives have an inconsequential effect on air quality, water quality, or do not result in production of toxic or hazardous products. The proposed plan results in minor loss of recreational opportunities such as hunting, camping, vehicle driving and rock hounding. There is no evidence to indicate that the minority and/or low-income populations would be disproportional consumers of these recreational opportunities. The travel, dining and recreational services and associated employment, which customarily involve low-income workers, is not affected by the proposed action and decisions in the alternatives.

Within the NEMO project area, the population was invited to participate through the mass media, and mailings to organization and to individuals. Public meetings and/or workshops were conducted in Baker, Ridgecrest, Barstow, San Bernardino, Pasadena, Yucca Valley, Riverside, Tecopa, Trona, Needles, and Las Vegas. There were meetings and consultations with the Fort Mojave, Chemehuevi and Timbisha tribal representatives. Other contacts were made with the Las Vegas Piutes. Concerns and issues from these meetings and consultations, and from written (including email) comments were addressed in this plan (see Chapter 5 and Appendix U).

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