CHAPTER 4

ENVIRONMENTAL CONSEQUENCES

The following sections describe the consequences and impacts, both positive and negative, of implementing the actions, decisions and management direction described in Chapter 2. The discussion is organized by Alternative to allow direct comparison with the Alternative descriptions in Chapter 2. Where an impact assessment is common to all alternatives, a note is added at the end of the discussion listing the Alternatives with the same impact assessment (for example All Alts. or Alts. 1,3,4,5). This will make it easier for the reader to determine the primary differences between the alternative impacts. However, for clarity, the complete text of the impact assessment is included (duplicated) in each Alternative so that the reader does not have to flip back and forth in the document when reviewing a specific alternative.

Alternative 1

Biodiversity

Biodiversity Preservation

Mitigating the impacts, both past and present, of recreational use and facilities on populations and discrete habitat niches would provide positive momentum towards ensuring that the diverse and fragile biodiversity of the NCA is preserved. Improved inventory and understanding of both plant and animal populations in the NCA has provided a greater understanding of biodiversity and human interactions.

Managing recreation use to avoid active raptor nests; limiting access to caves critical as bat maternity colonies; restoring Willow and Red Springs; re-routing trails out of riparian areas; defining a specific trail to Bridge Mt.; closing and rehabilitating trails in the Pine Creek WSA; and directing foot traffic away from the Natural Area in the North fork of Pine Creek are all actions that would reduce human impacts on specific identified species that are easily displaced by human presence or inadvertently impacted by human use because the species, like springsnails, cannot be detected. Species which will directly benefit from the above are the Peregrine falcon, Townsend's Big-eared bat, springsnail, Red Rock Canyon aster, and an assemblage of plants, ferns and amphibians in the North Fork of Pine Creek Canyon. (All Alternatives)

By restoring Willow and Red Springs and reducing human use of the spring brook, the deterioration of springsnail habitat may be halted if not reversed while still allowing recreation uses away

from the critical riparian area and snail habitat. This restoration should not be impacted by the proposed development of these springs for wild horse and burros use if the requirements for limiting diversions to 25% of available waters and a diversion location below the riparian area/spring brook are adhered to. Inventory of additional springs may discover new populations of this rare species. (All Alternatives)

The reconstruction or development of range improvements and the piping of water to new locations at nine (9) springs and the establishment of permanent water haul sites (location unknown at present) could have significant impacts on biodiversity. Piping water away from the springs can improve biodiversity by reducing use at the source. However, it can also have a substantial negative impact(s) by increasing use in areas little used at present. This could cause a shift in vegetative cover and species mix that could cause areas now meeting desired plant community goals to fall below desired species mix targets. Field studies have documented that areas closest to water sources have higher utilization of vegetation and less diversity of species. Establishing new water sources would change the pattern of use of wild horses and burros and bring greater pressure to bear on areas now little utilized. Piping water away from escape habitat may also make the water source unattractive or unavailable to wildlife such as bighorn sheep. Fencing spring sources would reduce the accessibility of the springs to ungulate wildlife such as bighorn sheep and mule deer.

Implementation of the Blue Diamond Cholla Conservation Agreement by BLM, the U.S. Fish and Wildlife Service and the James Hardie Gypsum Corp. would ensure the protection of this species and its only known habitat. Completion of the proposed exchange between BLM and James Hardie would place approximately 98% of the cholla's known habitat within the NCA. (All Alternatives)

Ecosystem Management

Aggressive suppression of fires in low elevation communities, in particular Blackbrush, would reduce the trend toward conversion of native desert to annual grassland caused by fires supported by the invasion of highly flammable fine (grass) fuels. This would protect a key component of the Mojave Desert ecosystem in RRCNCA. (All Alternatives)

The closure of 66.2 miles of dirt roads, primarily in the most heavily used "core" area of the NCA, would reduce habitat fragmentation and impacts of vehicles while leaving the primary and heaviest used routes available.

Continued use of RRCNCA by wild horses and burros would limit the ability of ecosystem management techniques to improve habitat

condition in areas where the desired plant community is less than optimal. It would be difficult to meet desired plant community objectives for re-establishing a grass component in soil types and areas where, while the initial impacts were due to livestock grazing, continued selective grazing by wild horses and burros prevents re-establishment of the grass component. The inability to reduce competition for limited water resources between horses and burros, and native wildlife would continue to limit water available for native populations. The removal of significant amounts of water from riparian areas through pipelines and water troughs at four springs; Lone Grapevine, Mud #1, Tunnel and Bird, would continue and new water development are proposed for Shovel, Willow, White Rock, Red and Wheeler Camp Springs and in Pine Creek. The heavier utilization of forage north of the now fenced off State Route 160, caused by the apparent reluctance of some horses to cross (south) to former grazing areas using the new box culverts under the highway, would continue.

Wild Horses and Burros

Wild horse and burro access to waters would be significantly improved and the impact of wild horses and burros on riparian areas decreased as water sources were moved out of the riparian area(s) in conjunction with riparian area fencing. However, the proposed Red Spring range improvement would likely increase conflicts between burros and humans. Assuming that the pipeline would be developed with water running downhill from the source, the trough would have to be located east (downhill) at either the entrance to the Red Spring picnic area on the Calico Basin Road, in the residential area or east of the residences in the wash next to State Route 159 and the Calico Basin Road. All other options would require water to be pumped uphill.

Providing viewing areas would deal directly with the highway safety and public interest issues. The vehicle pull-offs and designated viewing areas with information signs would reduce vehicle and pedestrian congestion on the highway. This would reduce the potential for vehicular accidents and provide the public positive viewing opportunities. It could serve as another way to inform the public on the importance of wild horses and burros to the development of this country. There would still be the possibility of harm to humans trying to feed the burros or to the burros eating something bad for their digestive system.

Development of additional underpasses accompanied by passive management approaches would reduce future and existing fragmentation of the HMAs. It would reduce the potential for motorist collisions with wild burros and horses while allowing for animal movement in response to the need for territory, forage or water. Highway safety would be improved by reducing the potential for animal and motorist collisions.

Mitigating the impacts of organized recreational use on the existing wild horse and burro trails during foaling period would reduce the stress on mares during that critical time. Animals would not be scared off their trails or out of a foraging or watering areas. The potential for abortions or weak foals would be reduced. While all organized events may not be curtailed during the foaling period, any activity authorized would have to show that conflicts have been analyzed and mitigated. Managing recreational activities to consider the needs of the wild horses and burros in the use of the underpasses/culverts, trails, and water sources, would minimize impacts and provide for multiple use management.

Fencing spring sources would provide riparian water source and vegetation protection from wild horse and burros, equestrian and human impacts. The fences would be designed to blend in with the native community and geology and would minimize the visual impact. With most animal trails leading to the water sources and with the extensive recreational use of the trails, the potential for and occurrence of impacts such as trampling and foraging to the riparian community would be minimized. Providing dependable water outside the fenced area away from the existing water developments or spring sources would insure a viable wild horse and burro herd and a stopover site for equestrian users.

Annual or as needed herd removals in response to habitat or safety conflicts would provide for a herd in balance with the forage, territory and water available in both the HMAs. The herd numbers would be regularly adjusted based on habitat and safety data to prevent large fluctuations in animals numbers that can result in ecosystem degradation from over grazing and poor animal health from insufficient forage and water. By regularly managing the herd numbers, the potential for highway accidents would be reduced. Animals would be able to identify discrete territories and maintain them, reducing intraspecific competition. This would reduce the need for young stud horses to seek new territory, an urge that may compel them to push against highway fences or other boundaries and end up on the highways.

Reconstruction of Tunnel Spring (Wilson Tank) would be necessary as this critical water source south of SR 160 is unreliable (dry in 1998). It is expected that even with reconstruction, periodic water hauls to this site, as was done in both 1991/92 and 1998, would be required. (Alternatives 1, 2, 3 & 4)

Viable populations of both wild horse and burros would remain in the Red Rock HMA.

<u>Riparian, Water, Air and Vegetative Resources</u>

Riparian Restoration

Restoration of riparian areas associated with 41 springs, as well as, Pine Creek, Oak Creek, Lost Creek, and First Creek to proper functioning condition would improve both water quantity and quality. Improved water availability would contribute to a more diverse riparian habitat, with a restored native plant community, and wildlife population. Positive responses and riparian vegetation recovery are already being seen at springs where actions have been taken in the past - Wheeler Camp, Lone Grapevine, Shovel, Red and Willow Springs. Restoration of spring snail habitat, through an improved riparian area at Red and Willow Springs, may lead to stable, increased snail populations. This may reduce the potential for listing the species as Threatened or Endangered as long as proposed water diversions do not impact the area or water quality required for snail recovery. (All Alternatives)

Current wild horse and burro activity, the primary impact on much of the riparian resource, would be unchanged under this alternative. The use of permanent protective fencing around spring associated riparian areas would be required to assist in their restoration and to protect range developments from damage by trampling.

Riparian areas associated with Willow Spring, Lost Creek, Pine Creek and Oak Creek will continue to be influenced by the heavy recreational use associated with sites around the Scenic Drive. The riparian areas associated with these water sources are expected to improve but at a slower rate than other riparian areas in the NCA. Range improvement projects proposed for Willow Spring and Pine Creek could significantly impact the ability of these areas to recover from the impacts of recreation.

Water Resources

Restoration of riparian areas associated with 41 springs, as well as, Pine Creek, Oak Creek, Lost Creek, and First Creek to proper functioning condition will improve both water quantity and quality. Water availability would be expected to improve as the water holding capability of these areas increases. Flows would be expected to increase in both volume and duration throughout the year. The filtering ability of a healthy riparian area will assist in improvement of overall water quality. (All Alts.)

The elimination of tamarisk from 15 springs as well as Pine and Oak Creeks would contribute to a reduction in salt loading to surface waters. Tamarisk is a salt concentrator (concentrates salts around its roots). During high intensity thunderstorms these salts are flushed into nearby surface waters. Recent tamarisk removal projects in southern Nevada have also produced increased water quality and quantity through the reduction in water consumption by the water loving tamarisk. (All Alts.)

Use of 12 springs and other surface waters including Pine Creek, Oak Creek, and First Creek by wild horses and burros will continue to result in water quality standards being exceeded for fecal coliform. Although the riparian areas associated with the springs will be fenced to eliminate access to these animals, a portion of the flow emanating from these sources will continue to be vulnerable to contamination and continued non-conformity to water quality standards. Creeks utilized by horses and burros would not be fenced and would therefore continue to see contamination.

Air Quality

Because a large portion of the NCA is located within the Las Vegas Valley Non-Attainment Area, any reduction in particulate emissions (pm10) is considered a positive impact. The primary contributor of particulates from the NCA is a result of dust generated by vehicles utilizing dirt roads and parking areas, and vehicle exhausts. A decrease in the amount of these emissions is expected as a result of the closure of 66.2 miles of dirt roads (112.3 acres) and the paving of 3.87 acres of existing roads and parking areas. Paving 3.87 acres of existing roads and parking areas would have a significant positive impact on reducing particulates because these acres include areas with the highest visitor use in the NCA (Red Spring Picnic Area and the White Rock, Willow Spring and Oak Creek roads).

Construction of the short loop Scenic Drive cut-off road from Sandstone Quarry to the Visitor Center would shorten the round trip distance from 13 to 6 miles. This would reduce mileage driven, and vehicle emissions produced, by every vehicle that uses the short loop by 54% as compared to the current situation which requires each and every vehicle that enters the Scenic Drive to travel its entire 13 mile length (and the two miles between the Scenic Drive entrance and exit) regardless of the desired area of visitation. While it is not possible to calculate the total benefit of this shorter route until traffic counts of the new route's use becomes available, it is known that the heaviest concentration of site specific short-term users is at Calico 1, Calico 2 and Sandstone Quarry. Once their visit's purpose is concluded at these sites, the visitor's primary desire is to exit as quickly as possible. The short loop would also facilitate the establishment of a low cost quick turn-around shuttle bus system from the entrance fee station parking lot and Visitor Center for climbers and hikers using the Calico Hills and Sandstone Quarry areas. This shuttle system could significantly reduce the number of vehicles traveling to these sites.

Vegetation

Closure of 66.2 miles of dirt roads would result in revegetation

of 112.3 acres as native plants colonize these routes. Development or expansion of three parking area/trailheads along the Scenic Drive and construction of a “short loop” Scenic Drive return road from Sandstone Quarry to the Visitor Center would result in the loss of vegetation on 8.38 acres.

Development or reconstruction of ten (10) range improvements with pipelines moving waters away from spring sources would change the pattern of use by wild horses and burros. Areas now little used by wild horses and burros due to lack of water could see an increase in forage utilization. This may benefit spring and riparian areas that could be utilized less but it is doubtful that horses and burros would stop using existing known water sources and the surrounding habitat entirely.

Based on trend data and field studies, it does not appear that the objectives for desired plant community, particularly the goal of 5% (minimum) basal cover for native grasses, can be achieved over large areas in the vicinity of water sources that are used by wild horses and burros. Conversely, areas distant from water sources more closely approximate the desired plant community objectives, particularly for native grasses (BLM field studies 1999). Trend data from the Mud Spring exclosure (1990-1999) shows that the quantity and quality of grass species can be increased in an ungrazed area. However, the area subject to grazing outside the exclosure remained static and virtually unchanged. Field studies by BLM staff have found that in large areas there is a near total absence of the native grasses that should be found. Years of cattle grazing, not wild horses and burros, probably caused the decline or absence of grass species, but the continued selective grazing of these forage species by wild horses and burros, even at current population levels, is enough to prevent re-establishment of the grass component.

Aggressive fire suppression in Blackbrush communities would help to ensure protection of this habitat type. Blackbrush communities are now highly susceptible to fire damage due to the invasion of light flashy grass fuels which now support and easily carry fire through this formerly low intensity and fire intolerant vegetation type. (All Alternatives)

Recreational Opportunities

Camping

Resource damage associated with overflow and illegal off-site camping due to a lack of current capacity would be reduced if not eliminated. Completion of the 13 Mile Campground will finalize the process of consolidating designated camping use in the NCA. The location of the new campground will allow visitors convenient access to other recreational pursuits in Red Rock Canyon. At the

same time, the location will not impair the scenic quality Red Rock Canyon offers. Closing Oak Creek Campground will remove a negative impact on the aesthetic quality of Red Rock Canyon's primary scenic vicinity. (All Alternatives)

There will be no impact on the maximum stay limit which will remain at 14 days. Dispersed camping would be allowed in the NCA north of La Madre Mt. and the area south and east of the Bird Spring Range (the lands added to the NCA in the 1994 NCA expansion). An added opportunity of allowing limited camping by permit would be possible in the Cottonwood Valley area prior to certain permitted commercial and competitive events.

Prohibiting camping within ½ mile of natural water sources used by wild horses and burros to limit impacts on wild horses and burros would have no impact on camping since no natural water sources used by wild horses and burros are within one mile of any area where camping is allowed.

Rock Climbing (same for All Alternatives)

Coordination between BLM and the climbing community would be enhanced through a Liaison Council. This partnership between climbers, climbing businesses, guides and the BLM would provide for improved communications and understanding of both climbers needs and BLM's management responsibilities, rules and regulations.

Climbing management would be the same as it is currently under the Interim GMP.

> Bolting would continue to be allowed except for two restricted areas: Sandstone Quarry, no bolting within 1/4 mile of parking area; and the Wilderness Study Areas.

Commercial climbing school permit numbers would remain the same but minimum use limits would be implemented to ensure that the public is being provided adequate services.

> Commercial guiding permits would remain at six (6) long-term multi-year and ten (10) individual visit limited "guest" permits.
>
> Requiring commercial climbing schools to operate at a minimum level of 100 user days per year to retain their permit privileges could cause the permits of two or three companies to be terminated in 2000. These companies, which primarily operate out of state and only use the NCA occasionally, would probably not meet the minimum use requirement for two years in a row and thus be subject to termination. The result of setting minimum use levels is

expected to be increased access to climbing services for the visiting public with an increase of 500 user days per year. The impact of increased user days by commercial permittees would be negligible since use by private climbers, estimated to be in the thousands of user days, far exceeds commercial use.

Limits on commercial group size and areas of use would provide for dispersal of use and reduce congestion at popular climbing locations.

Target Shooting

A designated target shooting area would be established at the mouth of Lucky Strike Canyon two miles west of U.S. Highway 95. This is an area which is presently impacted from dumping and illegal shooting. With the establishment of an authorized shooting location, there would be a reduction of the illegal shooting which occurs in many areas throughout the NCA, and a positive impact to the safety of other users.

Providing a designated target shooting area near the mouth of Lucky Strike Canyon would avoid totally eliminating this historic use from the entire NCA. The proposed site would be easily accessed by residents of lower Kyle Canyon where the impact of new shooting restrictions as a result of expansion of the NCA in 1994 were most significant.

Trail Opportunities

This alternative proposes significant trail opportunities by the designation of more additional trails to the existing trail system than are offered in the other alternatives. However, closure of the Red Valley trail to mountain bike use, to eliminate conflict with wild horses, would be a major change to the Cottonwood Valley Trail system and to mountain bike use in this area. The most popular and challenging loop trail would be eliminated.

A total of 49.1 miles of trail would be added to the existing designated trails network. This includes 44.7 miles of routes which exist, but have not been officially designated, and 4.4 miles of proposed trail which would require new construction.

Four trails in the Scenic Drive vicinity would be designated for multiple use. This would offer 9.2 miles of trails open to mountain bike use in the Scenic Drive vicinity. Although allowing additional opportunities for mountain bike enthusiasts, the Scenic Drive vicinity trails receive heavy hiking use and user conflicts would be inevitable. The four multiple use trails intersect with eight other trails that would not be designated

for mountain bike use. Due to the general difficulty in restricting mountain bikes due to their mobility, this situation would likely produce illegal use of intersecting trails not designated for mountain bike use.

Dispersed equestrian use would continue to be allowed throughout the NCA (horse riding would not be limited to designated trails).

Touring Opportunities

Dirt Roads

While most of the commonly used dirt roads would remain open to use, there would be a reduction of dirt roads available for public use throughout the NCA. Most of the reduction in road miles comes from the closure of unauthorized routes in Wilderness Study Areas and of short dead end two track routes. Of the 159.0 miles of dirt road inventoried in the NCA, 92.8 miles would be designated for public access and 66.2 miles would be closed (some have already been closed under direction of the IGMP). The closures would result in a 42% reduction of access for off-highway vehicle use.

Paved Roads

Overlooks and picnic areas in the Scenic Drive vicinity, and access to these sites would eventually be paved.

New sites to be constructed include 3 new overlooks and expansions on 2 existing sites. This would result in 3.05 acres of new paving.

One new road is proposed which would allow visitors the option of driving the entire 13 mile Scenic Drive or taking a short loop when activities focus on the Calico Hills area. The optional route would be 5.65 miles, with the new construction occurring between Sandstone Quarry and the Visitor Center. This would include 2.65 miles of pavement, although it would not be all new disturbance.

The proposed paving projects will benefit the recreating public by providing approximately 105 additional parking spaces around the Scenic Drive, reducing particulate matter in the air, providing smoother surfaces for highway design vehicles, and offering a shorter loop drive opportunity. The short loop not only benefits those that do not wish to drive, bicycle or jog the entire 13 mile Scenic Drive, but also sightseers that prefer the longer drive and do not want the enjoyment of their experience lessened by being constantly passed and tailgated by others impatient to quit the Scenic Drive.

The new short loop would also allow the Scenic Drive to remain open during flash flood events when many local residents want to use the road to see waterfalls which form on the rocks. Currently if either Sandstone, Red Rock or Pine Creek washes flood the entire Scenic Drive must be shut down for public safety. This new road would allow the first three miles of the Scenic Drive to be open at all times as it avoids all the washes.

For hikers and climbers, the view from higher elevations will include an additional 12.25 acres of paved surfaces dispersed throughout the Scenic Drive vicinity.

Cultural Resources (same for all Alternatives)

Continued emphasis would be placed on protecting cultural resources from damage and loss. Where necessary, existing trails would be re-routed to direct use away from sensitive areas. Where separation of uses is not possible, an increased emphasis on visitor education and interpretation will be used to educate visitors on the need to avoid inadvertently damaging fragile cultural sites.

Continued restriction of vehicle access at Brownstone Canyon will provide long term protection while still allowing for public appreciation and use of these areas.

Enhancing existing volunteer partnerships to provide for improved site monitoring will provide greatly improved information on site conditions and use patterns. Bureau staffing limits have not allowed adequate monitoring to be done in the past.

Signing of rock art sites at climbing locations would be used to reduce the impact of climbing on these resources.

Native American Concerns (same for all Alternatives)

The proposed plan provides for and encourages consultation with Native Americans on issues that may affect Native American values and traditions. As provided for by law, provision has been made for the use of NCA lands and resources for traditional ceremonial purposes. As opportunities arise, Native American partnerships will be developed to enhance and improve cultural exhibits and to provide improved education on Native American issues for NCA visitors.

Visual Resources (same for all Alternatives)

The most significant, and positive, impact to visual resources would be the closure of the Oak Creek Campground and Spanish Trail overflow camping area. Both of these areas are visually evident to the casual observer. Oak Creek interrupts the view of

the escarpment and lower valley floor with tents, vehicles, motor homes and the large silver water trailer. The new camping area cannot be seen from any of the regularly used roads or trails in the NCA.

Visual resources could be degraded with the construction of range improvements (water pipelines), particularly at Shovel, Willow, White Rock, and Red Springs and in Pine Creek. Since site specific environmental analysis has not yet been completed, the level of impact is not yet certain. However, installation of a pipeline will require a lineal trench be dug for the pipe. This would produce a form, line and color not natural in these locations, but similar to that created by road development. If heavy pipe laying equipment is approved for this purpose, a significant visual impact would occur.

Closure of 66.2 miles of dirt roads would result in revegetation and the eventual visual disappearance of dirt tracks on 112.3 acres as native plants colonize these routes. Development or expansion of five parking area/trailheads along the Scenic Drive and construction of a “short loop” Scenic Drive return road from Sandstone Quarry to the Visitor Center would result in visual impacts characteristic of paved surfaces on 12.25 acres. The impact of this paving is mitigated by the fact that 3.87 acres involves paving of existing dirt roads and parking areas. The visual impact of paving these areas will actually be reduced due to 1) the darker color of the paving which will blend with surrounding natural colors better than the bright bare surface of heavily used dirt roads and 2) the elimination of the dust plume that accompanies each vehicle using these dirt roads.

Wilderness Characteristics

Under this alternative, both the La Madre Mountains Wilderness Study Area (WSA) and the Pine Creek WSA will continue to be managed in compliance with the *Interim Management Policy for Lands Under Wilderness Review* (H-8550-1). (All Alternatives)

Naturalness of both the La Madre Mountains and Pine Creek WSAs would see improvement through the restoration of riparian areas associated with 17 springs, as well as, Pine Creek, Oak Creek, Lost Creek, and First Creek to proper functioning condition. The elimination of non-native vegetative species (i.e. tamarisk) along with improvement of vegetative diversity will ensure natural, self maintaining riparian areas. (All Alternatives)

Current wild horse and burro activity, within the Pine Creek WSA, would be unchanged under this alternative. The use of protective fencing around 2 spring associated riparian areas within the Pine Creek WSA would continue, presenting unnatural manmade features into the landscape. (Alternatives 1, 2 &3)

Construction of range improvements to provide off-site waters at Shovel, White Rock and Lone Grapevine Springs would involve lands within both WSAs. These would not be temporary improvements. Impacts to naturalness could occur and would need to be assessed on a site specific basis prior to project approval. Improvements that require motorized access would not be approved.

Rock climbing restrictions that includes no new bolts in WSAs; no alterations of the rock surfaces; no establishment of permanent fixed ropes or cables; and the encouragement of the use of equipment that better blends with the rock face will all contribute to minimizing impacts to naturalness and the WSAs. Although rock climbing activity will be noticeable while climbers are present on the rock faces, during inactive periods, evidence of this activity would be substantially unnoticeable. (All Alts.)

The closure and eventual rehabilitation of 19.3 miles (46.4 acres) of ways within the La Madre Mountains WSA north of La Madre Mountain and in Little Red Rock would halt deterioration of wilderness characteristics caused by expansion of these ways through casual use. Ways which were inventoried in 1979 as short intrusions into lands with wilderness characteristics now form an interconnected system of routes, none of which has been officially approved, which has caused significant and visual localized impacts to naturalness. (All Alternatives)

By not allowing new developments that would diminish wilderness characteristics and limiting facilities in the WSAs to existing hiking trails (re-routing sections of these trails to avoid sensitive riparian areas and plant populations) protection of inventoried wilderness characteristics would be ensured. (All Alternatives)

The development of a target shooting area south of the Lucky Strike road at the existing unauthorized dump/shooting site, although outside the boundary of the La Madre Mountains WSA, will present a degree of noise pollution. This site is immediately next to the WSA boundary and the concentration of target shooting in this one area is expected to produce noise sufficient to detract somewhat from a true wilderness experience.

Alternative 2

Biodiversity

Biodiversity Preservation

Mitigating the impacts, both past and present, of recreational use and facilities on populations and discrete habitat niches would provide positive momentum towards ensuring that the diverse and fragile biodiversity of the NCA is preserved. Improved inventory and understanding of both plant and animal populations in the NCA has provided a greater understanding of biodiversity/human interactions.

Managing recreation use to avoid active raptor nests; limiting access to caves critical as bat maternity colonies; restoring Willow and Red Springs; re-routing trails out of riparian areas; defining a specific trail to Bridge Mt.; closing and rehabilitating trails in the Pine Creek WSA; and directing foot traffic away from the Natural Area in the North fork of Pine Creek are all actions that would reduce human impacts on specific identified species that are easily displaced by human presence or inadvertently impacted by human use because the species, like springsnails, cannot be detected. Species which will directly benefit from the above are the Peregrine falcon, Townsend's Big-eared bat, springsnail, Red Rock Canyon aster, and an assemblage of plants, ferns and amphibians in the North Fork of Pine Creek Canyon. (All Alternatives)

By restoring Willow and Red Springs and reducing human use of the spring brook, the deterioration of springsnail habitat may be halted if not reversed while still allowing recreation uses away from the critical riparian area and snail habitat. Inventory of additional springs may discover new populations of this rare species. (All Alternatives)

Implementation of the Blue Diamond Cholla Conservation Agreement by BLM, the U.S. Fish and Wildlife Service and the James Hardie Gypsum Corp. would ensure the protection of this species and its only known habitat. Completion of the proposed exchange between BLM and James Hardie would place approximately 98% of the cholla's known habitat within the NCA. (All Alternatives)

Ecosystem Management

Aggressive suppression of fires in low elevation communities, in particular Blackbrush, would reduce the trend toward conversion of native desert to annual grassland caused by fires supported by the invasion of highly flammable fine (grass) fuels. This would protect a key component of the Mojave Desert ecosystem in the NCA. (All Alternatives)

The closure of 66.2 miles of dirt roads, primarily in the most heavily used “core” area of the NCA, would reduce habitat fragmentation and impacts of vehicles while leaving the primary and heaviest used routes available.

Continued use of RRCNCA by wild horses and burros would limit the ability of ecosystem management techniques to improve habitat condition in areas where the desired plant community is less than optimal. It would be difficult to meet desired plant community objectives for re-establishing a grass component in soil types and areas where, while the initial impacts were due to livestock grazing, continued selective grazing by wild horses and burros prevents re-establishment of the grass component. The inability to reduce competition for limited water resources between horses and burros, and native wildlife would continue to limit water available for native populations. The removal of significant amounts of water from riparian areas through pipelines and water troughs at four springs; Lone Grapevine, Mud #1, Tunnel and Bird, would continue and new water development are proposed for Shovel, Willow, White Rock, Red and Wheeler Camp Springs and in Pine Creek. The heavier utilization of forage north of the now fenced off State Route 160, caused by the apparent reluctance of some horses to cross (south) to former grazing areas using the new box culverts under the highway, would continue.

Wild Horses and Burros

Wild horses and burros would remain in their current use areas with the possible exception of the burros in Calico Basin. The Calico Basin band of burros would be evaluated to see if their use can be restricted to the HMA as designated in the Las Vegas RMP (10/98). The increasingly more intensive residential growth in Calico Basin and the pending development of all of the Summerlin property would significantly limit the range available to this band. Only just a few years ago this band was known to travel several miles east on private lands to forage. These lands are all now occupied by new subdivisions and unavailable.

Reconstruction of Tunnel Spring (Wilson Tank) would be necessary as this critical water source south of SR 160 is unreliable (dry in 1998). It is expected that even with reconstruction, periodic water hauls to this site, as was done in both 1991/92 and 1998, would be required. (Alternatives 1, 2, 3 & 4)

Viable populations of both wild horse and burros would remain in the Red Rock HMA.

<u>Riparian, Water, Air and Vegetative Resources</u>

Riparian Restoration

Restoration of riparian areas associated with 41 springs, as well as, Pine Creek, Oak Creek, Lost Creek, and First Creek to proper functioning condition will improve both water quantity and quality. Improved water availability will contribute to a more diverse riparian habitat, with a restored native plant community, and wildlife population. Positive responses and riparian vegetation recovery are already being seen at springs where actions have been taken in the past - Wheeler Camp, Lone Grapevine, Shovel, Red and Willow Springs. Restoration of springsnail habitat through an improved riparian area at Red and Willow Springs may lead to stable, increased snail populations avoiding the potential for listing the species as Threatened or Endangered. (All Alternatives)

Current wild horse and burro activity, the primary impact on much of the riparian resource, would be unchanged. The use of protective fencing around 12 spring associated riparian areas would be required to assist in their protection and/or restoration. No new range developments would be constructed as none have been proposed in prior plans. Projects benefitting riparian resources and associated with wild horses and burros or wildlife could be proposed on an individual basis in the future.

Riparian areas associated with Willow Spring, Lost Creek, Pine Creek and Oak Creek will continue to be influenced by the heavy recreational use associated with sites around the Scenic Drive. The riparian areas associated with these water sources are expected to improve, but at a slower rate than other riparian areas in the NCA.

Water Resources

Restoration of riparian areas associated with 41 springs, as well as, Pine Creek, Oak Creek, Lost Creek, and First Creek to proper functioning condition will improve both water quantity and quality. Water availability would be expected to improve as the water holding capability of these areas increases. Flows would be expected to increase in both volume and duration throughout the year. The filtering ability of a healthy riparian area will assist in improvement of overall water quality. (All Alts.)

The elimination of tamarisk from 15 springs as well as Pine and Oak Creeks would contribute to a reduction in salt loading to surface waters. Tamarisk is a salt concentrator (concentrates salts around its roots). During high intensity thunderstorms these salts are flushed into nearby surface waters. Recent tamarisk removal projects in southern Nevada have also produced increased water quality and quantity through the reduction in water consumption by the water loving tamarisk. (All Alts.)

Use of 12 springs and other surface waters including Pine Creek,

Oak Creek, and First Creek by wild horses and burros will continue to result in water quality standards being exceeded for fecal coliform. Although the riparian areas associated with the springs will be fenced to eliminate access to by animals, a portion of the flow emanating from these sources will continue to be vulnerable to contamination and continued non-conformity to water quality standards. Creeks utilized by horses and burros would not be fenced and would therefore continue to see contamination.

Air Quality

Because a large portion of the NCA is located within the Las Vegas Valley Non-Attainment Area, any reduction in particulate emissions (pm10) is considered a positive impact. The primary contributor of particulates from the NCA is a result of dust generated by vehicles utilizing dirt roads and parking areas. A decrease in the amount of these emissions is expected as a result of the closure of 66.2 miles of dirt roads (112.3 acres) and the paving of 3.87 acres of existing roads and parking areas. Paving of existing roads and parking areas would substantially reduce particulate matter emissions because these acres include areas with the highest visitor use in the NCA (Red Spring Picnic Area and the White Rock, Willow Spring and Oak Creek roads).

Vegetation

Closure of 66.2 miles of dirt roads would result in revegetation of 112.3 acres as native plants colonize these routes. Development or expansion of three parking area/trailheads along the Scenic Drive and construction of a “short loop” Scenic Drive return road from Sandstone Quarry to the Visitor Center would result in the loss of vegetation on 1.61 acres.

Based on trend data and field studies, it does not appear that the objectives for desired plant community, particularly the goal of 5% (minimum) basal cover for native grasses, can be achieved over large areas in the vicinity of water sources that are used by wild horses and burros. Conversely, areas distant from water sources more closely approximate the desired plant community objectives, particularly for native grasses (BLM field studies 1999). Trend data from the Mud Spring exclosure (1990-1999) shows that the quantity and quality of grass species can be increased in an ungrazed area. However, the area subject to grazing outside the exclosure remained static and virtually unchanged. Field studies by BLM staff have found that in large areas there is a near total absence of the native grasses that should be found. Years of cattle grazing, not wild horses and burros, probably caused the decline or absence of grass species, but the continued selective grazing of these forage species by wild horses and burros, even at current population levels, is

enough to prevent re-establishment of the grass component.

Aggressive fire suppression in Blackbrush communities would help to ensure protection of this habitat type. Blackbrush communities are now highly susceptible to fire damage due to the invasion of light flashy grass fuels which now support and easily carry fire through this formerly low intensity and fire intolerant vegetation type. (All Alternatives)

Recreational Opportunities

Camping

Resource damage associated with overflow and illegal off-site camping due to a lack of current capacity would be reduced if not eliminated. Completion of the 13 Mile Campground will finalize the process of consolidating designated camping use in the NCA. (All Alternatives)

The new campground, 2.5 miles southeast of Calico Basin, will offer campers improved facilities including 5 group sites (formerly 0 sites) and 59 individual/family sites (a 56% increase) with a final design plan for 10 group and 100 individual sites. Restroom facilities will be vault toilets (as opposed to porta-potties) and each site will have a tent pad, picnic table and barbecue grill provided.

The location of the new campground will allow visitors convenient access to other recreational pursuits in Red Rock Canyon. At the same time, the location will not impair the scenic quality Red Rock Canyon offers. Closing Oak Creek Campground will remove a negative impact on the aesthetic quality of Red Rock Canyons primary scenic vicinity. (All Alternatives)

There would be no impact on the maximum camping stay limit which will remain at 14 days. Dispersed camping would be allowed in the NCA north of La Madre and the area south and east of the Bird Spring Range (the lands added to the NCA in the 1994 NCA expansion).

Rock Climbing (same for All Alternatives)

Coordination between BLM and the climbing community would be enhanced through a Liaison Council. This partnership between climbers, climbing businesses, guides and the BLM would provide for improved communications and understanding of both climbers needs and BLM's management responsibilities, rules and regulations.

Climbing management would be the same as it is currently under the Interim GMP.

Bolting would continue to be allowed but would be restricted in two areas: Sandstone Quarry, no bolting within 1/4 mile of parking area; and the Wilderness Study Areas.

Commercial climbing school permit numbers would remain the same but minimum use limits would be implemented to ensure that the public is being provided adequate services.

Commercial guiding permits would remain at six (6) long-term multi-year and ten (10) individual visit limited “guest” permits.

Requiring commercial climbing schools to operate at a minimum level of 100 user days per year to retain their permit privileges could cause the permits of two or three companies to be terminated in 2000. These companies, which primarily operate out of state and only use the NCA occasionally, would probably not meet the minimum use requirement for two years in a row and thus be subject to termination. The result of setting minimum use levels is expected to be increased access to climbing services for the visiting public with an increase of 500 user days per year. The impact of increased user days by commercial permittees would be negligible since use by private climbers, estimated to be in the thousands of user days, far exceeds commercial use.

Limits on commercial group size and areas of use would provide for dispersal of use and reduce congestion at popular climbing locations.

Target Shooting

No shooting, other than hunting with a valid hunting license and permit, is allowed in the National Conservation Area. There will be no impact or change to the current situation since RRCNCA is closed to target shooting. (Alternatives 2, 3, 4 & 5)

Trail Opportunities

Very little would be offered in the way of new trails for hikers, horse riders and mountain bikers. Three projects are proposed, which include completion of the Escarpment Base Trail, a trail between the north and south Oak Creek access trails, and an access trail to Kraft Rocks and Gateway Canyon. No trails are proposed for formal designation in the expansion areas (north of La Madre and southeast of the Bird Spring Range).

A total of 4.1 miles of trail would be added to the existing designated trails network. The trail between the Oak Creek access trails would involve designating an existing route of 1.7

miles. The other 2 proposals would involve new construction for a total of 2.4 miles.

Three trails in the Scenic Drive vicinity would be designated for multiple use. This would offer 7.2 miles of trails open to mountain bike use in the Scenic Drive vicinity. Although allowing additional opportunities for mountain bike enthusiasts, the Scenic Drive vicinity trails receive heavy hiking use and user conflicts would be inevitable. The three multiple use trails would have six intersect locations with other trails that would not be designated for mountain bike use. Due to the general difficulty in restricting mountain bikes due to their mobility, this situation would likely produce illegal use of intersecting trails not designated for mountain bike use.

Dispersed equestrian use would continue to be allowed throughout the NCA (horse riding would not be limited to designated trails).

Touring Opportunities

Dirt Roads

The dirt roads most commonly used in the NCA would be officially designated as part of the road system available for public use. Road closures include unauthorized roads in the La Madre Wilderness Study Area, roads within the original NCA boundary planned for closure in the Interim General Management Plan (IGMP) and several short dead end two track routes.

There would be a reduction of dirt roads available for public use throughout the NCA. Of the 159.0 miles of dirt road inventoried in the NCA, 92.8 miles would be designated for public access and 66.2 miles would be closed (some have already been closed under direction of the IGMP). The closures would result in a 42% reduction of access for off-highway vehicle use.

Paved Roads

Overlooks and picnic areas in the Scenic Drive vicinity, and access to these sites will eventually be paved.

New sites to be constructed include 1 new overlook and the expansion of 2 existing sites. This would result in 2.06 acres of new paving. The proposed paving projects will benefit the recreating public by providing approximately 75 additional parking spaces around the Scenic Drive, reducing particulate matter in the air, and providing smoother surfaces for highway design vehicles.

For visitors recreating at higher elevations, the viewshed would include an additional 5.48 acres of pavement.

Cultural Resources (same for All Alternatives)

Continued emphasis would be placed on protecting cultural resources from damage and loss. Where necessary, existing trails would be re-routed to direct use away from sensitive areas. Where separation of uses is not possible, an increased emphasis on visitor education and interpretation will be used to educate visitors on the need to avoid inadvertently damaging fragile cultural sites.

Continued restriction of vehicle access at Brownstone Canyon and new limits on vehicle access to the Cottontail site will provide long term protection while still allowing for public appreciation and use of these areas.

Enhancing existing volunteer partnerships to provide for improved site monitoring will provide greatly improved information on site conditions and use patterns. Bureau staffing limits have not allowed adequate monitoring to be done in the past.

Signing of rock art sites at climbing locations would be used to reduce the impact of climbing on these resources.

Native American Concerns (same for All Alternatives)

The proposed plan provides for and encourages consultation with Native Americans on issues that may affect Native American's values and traditions. As provided for by law, provision has been made for the use of NCA lands and resources for traditional ceremonial purposes. As opportunities arise, Native American partnerships will be developed to enhance and improve cultural exhibits and to provide improved education on Native American issues for NCA visitors.

Visual Resources

The most significant and positive impact to visual resources will be the closure of the Oak Creek Campground and Spanish Trail overflow camping area. Both of these areas are visually evident to the casual observer. Oak Creek interrupts the view of the escarpment and lower valley floor with tents, vehicles, motor homes and the large silver water trailer. The new camping area cannot be seen from any of the regularly used roads or trails in the NCA. (All Alternatives)

Closure of 66.2 miles of dirt roads would result in the eventual disappearance of dirt tracks on 112.3 acres as native plants re-colonize these routes. Development or expansion of three parking area/trailheads along the Scenic Drive would result in the visual impacts of paved surfaces on 5.48 acres. This impact is mitigated because 3.87 acres involves paving of existing dirt

roads and parking areas which would actually reduce visual impacts due to 1) the darker color of the paving which will blend with surrounding natural colors better than the bright bare surface of heavily used dirt roads and 2) the elimination of the dust plume that accompanies each vehicle using these dirt roads.

Wilderness Characteristics

Under this alternative, both the La Madre Mountains Wilderness Study Area (WSA) and the Pine Creek WSA will continue to be managed in compliance with the *Interim Management Policy for Lands Under Wilderness Review* (H-8550-1). (All Alternatives)

Naturalness of both the La Madre Mountains and Pine Creek WSAs would see improvement through the restoration of riparian areas associated with 17 springs, as well as, Pine Creek, Oak Creek, Lost Creek, and First Creek to proper functioning condition. The elimination of non-native vegetative species (i.e. tamarisk) along with improvement of vegetative diversity will ensure natural, self maintaining riparian areas. (All Alternatives)

Current wild horse and burro activity, within the WSAs, would be unchanged under this alternative. The use of protective fencing around 2 spring associated riparian areas within the Pine Creek WSA would continue, presenting unnatural manmade features into the landscape. (Alternatives 1, 2 & 3)

Rock climbing restrictions that includes no new bolts in WSAs; no alterations of the rock surfaces; no establishment of permanent fixed ropes or cables; and the encouragement of the use of equipment that better blends with the rock face will all contribute to minimizing impacts to naturalness and the WSAs. Although rock climbing activity will be noticeable while climbers are present on the rock faces, during inactive periods, evidence of this activity would be substantially unnoticeable. (All Alts)

The closure and eventual rehabilitation of 19.3 miles (46.4 acres) of ways within the La Madre Mountains WSA north of La Madre Mountain and in Little Red Rock would halt deterioration of wilderness characteristics caused by expansion of these ways through casual use. Ways which were inventoried in 1979 as short intrusions into lands with wilderness characteristics now form an interconnected system of routes, none of which has been officially approved, which has caused significant and visual localized impacts to naturalness. (All Alternatives)

By proposing no new development in the WSAs and limiting facilities within the WSAs to existing hiking trails, re-routing sections of these trails to avoid sensitive riparian areas and plant populations, protection of inventoried wilderness characteristics would be ensured. (All Alternatives)

Alternative 3

Biodiversity

Biodiversity Preservation

An ongoing program of population monitoring will provide the data necessary to evaluate biodiversity and to better define the status of individual species and their associations. Mitigating the impacts, both past and present, of recreational use and facilities on populations and discrete habitat niches would provide positive momentum towards ensuring that the diverse and fragile biodiversity of the NCA is preserved. Improved inventory and understanding of both plant and animal populations in the NCA has provided a greater understanding of biodiversity/human interactions.

Managing recreation use to avoid active raptor nests; limiting access to caves critical as bat maternity colonies; restoring Willow and Red Springs; re-routing trails out of riparian areas; defining a specific trail to Bridge Mt.; closing and rehabilitating trails in the Pine Creek WSA; and directing foot traffic away from the Natural Area in the North Fork of Pine Creek are all actions that would reduce human impacts on specific identified species that are easily displaced by human presence or inadvertently impacted by human use because the species, like springsnails, cannot be detected. Species which will directly benefit from the above are the Peregrine falcon, Townsend's Big-eared bat, springsnail, Red Rock Canyon aster, and an assemblage of plants, ferns and amphibians in the North Fork of Pine Creek Canyon. (All Alternatives)

By restoring Willow and Red Springs and reducing human use of the spring brook, the deterioration of springsnail habitat may be halted if not reversed while still allowing recreation uses away from the critical riparian area and snail habitat. Re-introduction of the springsnail at Willow Spring, should continued inventories confirm its disappearance, would provide an improved gene pool, double the number of habitat areas and reduce the risk of species elimination due to a catastrophic event. Inventory of additional springs may discover new populations of this rare species. (All Alternatives)

Implementation of the Blue Diamond Cholla Conservation Agreement by BLM, the U.S. Fish and Wildlife Service and the James Hardie Gypsum Corp. would ensure the protection of this species and its only known habitat. Completion of the proposed exchange between BLM and James Hardie would place approximately 98% of the cholla's known habitat within the NCA. (All Alternatives)

Ecosystem Management

Removing burro use from the Calico Basin area and Pine Creek would eliminate damage to the riparian areas at Red, Calico and Ash Springs while increasing water available to native wildlife and reducing impacts in the meadow in Pine Creek.

The temporary removal of wild horses and burros from the area west of State Route 159 between Spring mountain Ranch and State Route 160 would allow both riparian areas and vegetation to recover from years of grazing use. Removal of grazing animals should allow the perennial grasses to re-establish their populations in areas now deficient or lacking in this major vegetative mix component. It is quite probable that livestock grazing was the cause of the documented sparse population, and in some cases total lack, of perennial grasses in this area. However, the selective grazing of perennial grasses that do germinate by wild horses and burros, even at their limited population, is sufficient to prevent re-establishment of a grass component in the vegetative mix of this area.

The temporary removal would also allow recovery of the riparian areas at Shovel, Lone Grapevine, and Mud #1 Springs while at the same time allowing less restricted access for wildlife as the exclosure gates could be left open.

Utilization of Bighorn sheep as an umbrella indicator species would not only provide a method of evaluating recreational impacts and habitat pressures but it would unite BLM's efforts with years of data collection and management by the Nevada Division of Wildlife. This historical data will enable trends to be apparent much more readily and enhance inter-agency cooperative efforts. (Alternatives 3, 4 & 5)

Aggressive suppression of fires in low elevation communities, in particular Blackbrush, would reduce the trend toward conversion of native desert to annual grassland caused by fires supported by the invasion of highly flammable fine (grass) fuels. This would protect a key component of the Mojave Desert ecosystem in the NCA. (All Alternatives)

By implementing a prescribed natural fire program in the montane chaparral communities of the escarpment's canyons, the fire ecology of this habitat type would be enhanced. Successful implementation of this program would benefit fire dependent species like the Ponderosa pine while reducing fuel loading which, when allowed to accumulate to unnatural volumes through aggressive fire suppression, actually increases the level of damage when a fire does occur. High intensity fire threatens the existence of other (often fire tolerant) species, like the Ponderosa pine. While Pine Creek still supports a healthy stand

of Ponderosa pine, most of the other canyons have been burned out and stumps are the only evidence Ponderosa pine once grew there. Because of the narrow restricted nature of the escarpment's canyons, it is unlikely that the prescribed burns would exceed 5 acres each and a total of 50 acres over the next ten years. Natural fires exceeding this size by hundreds or thousands of acres have occurred numerous times in the NCA without lasting impact. (Alternatives 3, 4 & 5)

The use of fire to re-establish a mosaic pattern and provide openings within the pinyon-juniper uplands, which dominate the higher elevations in the NCA, would provide greater habitat diversity and forage values. Aggressive fire suppression in the past has created a homogeneous monotypic forest canopy where past natural disturbance through fire once created pockets of uneven aged forest. Based on past fire histories an average of two fires per year at an average size of two to five acres could be expected. (Alternatives 3, 4 & 5)

The closure of 92.9 miles of dirt roads would provide the greatest reduction of vehicle travel in the NCA of any of the alternatives and reduce habitat fragmentation throughout the NCA. This would also reduce the potential for road kills of reptiles, lizards and snakes.

Wild Horses and Burros

Wild horses and burros would remain within both the Red Rock Canyon National Conservation Area (RRCNCA) and the Red Rock Herd Management Area (HMA) within a reduced HMA. The long term impact of this alternative would be the removal of burros between Calico Basin and Spring Mountain Ranch. A short term impact would be the removal of all wild horses and burros in the area between Spring Mountain Ranch and State Route 160. These animals could eventually be returned to this area when desired plant community objectives have been attained.

Visitors would still be able to view wild horses and burros. However, burro viewing along State Route 159 would not be as easy since there would be fewer animals in this area and, at least for the short term, they would be restricted to the east side of the highway. The animals now most easily observed are those that live on the west side of the highway and spend considerable time on the highway itself begging for handouts.

Two areas would be deleted from the HMA (Las Vegas RMP (10/98)); 1) on the east side of State Route 159, the area north of Cave Canyon; and 2) on the west side of State Route 159, the area from Calico Basin south to Spring Mountain Ranch State Park. The first area is becoming increasingly restricted as it is confined by State Route 159 on the west and the Summerlin developments on

the east and includes the location of the new 13 Mile Campground while the second area includes the Calico Basin residential area, a portion of State Route 159, the heavily used Visitor Center complex and the cliffs and canyons of the RRCNCA escarpment.

The area of the HMA which burros currently may occupy, and historically have used, would be reduced by 20%. Approximately 10 burros that use Calico Basin and nearby lands would be permanently removed and placed in the BLM's adoption program. Most of the Calico Basin band's range is outside the HMA near the Calico Basin residential area and the west boundary of Summerlin. The eventual fencing off of all of private lands in Calico Basin as residential use intensifies and the fencing of State Route 159 to prevent unauthorized off-highway vehicle use, will limit access to waters and force this band into the canyon and cliff areas of western Calico Basin and Gateway Canyon. This area is predominately gravel wash and bare sandstone and would not have the vegetative resources and available waters necessary to support a healthy band. Short term reductions in burros south of Spring Mountain Ranch would occur.

For the short term, wild horses would be removed from the area between Spring Mountain Ranch and State Route 160. If these animals cannot be accommodated in the area south of State Route 160, they would be removed and placed in the adoption program. This could reduce the wild horse herd from its current estimated population of 71 to approximately 56. The viability of the remaining herd would not be impacted. In the long term, following vegetative recovery of perennial grasses, wild horses could be re-introduced north of State Route 160 in the area south of Spring Mountain Ranch State Park. This would reduce the area of the HMA in which wild horses currently may occupy by 34%, but would have no real impact on the number of horses, as they rarely utilize any areas north of Bonnie Springs.

Reintroducing wild horse and burro use in the area between State Route 160 and Spring Mountain Ranch State Park would require the continued fencing and maintenance of spring sources (Mud, Lone Grapevine, Shovel). Field studies have documented significant negative impacts on these springs due to horse use. The springs have shown immediate and visible recovery following fencing.

Reconstruction of Tunnel Spring (Wilson Tank) would be necessary as this critical water source south of SR 160 is unreliable (dry in 1998). It is expected that even with reconstruction, periodic water hauls to this site, as was done in both 1991/92 and 1998, would be required. (Alternatives 1, 2, 3 & 4)

Viable populations of both wild horse and burros would remain in the HMA.

Riparian, Water, Air and Vegetative Resources

Riparian Restoration

Restoration of riparian areas associated with 41 springs, as well as, Pine Creek, Oak Creek, Lost Creek, and First Creek to proper functioning condition will improve both water quantity and quality. Improved water availability will contribute to a more diverse riparian habitat, with a restored native plant community, and wildlife population. Positive responses and riparian vegetation recovery are already being seen at springs where actions have been taken in the past - Wheeler Camp, Lone Grapevine, Shovel, Red and Willow Springs. Restoration of springsnail habitat, through an improved riparian area at Red and Willow Springs, may lead to stable, increased snail populations, avoiding the potential for listing the species as Threatened or Endangered. (All Alternatives)

The continued use of permanent protective fencing around Shovel, Lone Grapevine and Mud # 1 Springs would be required to assist in ensuring their restoration and to protect range improvements from damage by trampling. (Alternatives 1, 2, & 3)

Riparian areas associated with Willow Spring, Lost Creek, Pine Creek and Oak Creek, which currently receive heavy recreational use, would be evaluated to determine rehabilitation measures which might be taken to minimize human impacts. An effort would be made to deflect recreational use to non-riparian areas through trail rerouting, closure of damaged areas to use and promotion of alternative use sites. Closing and camouflaging numerous side and spur trails would reduce surface disturbance, erosion and vegetation loss. The riparian areas associated with these water sources are expected to improve, but at a slower rate than other riparian areas in the NCA. (Alternatives 3, 4 & 5)

Water Resources

Restoration of riparian areas associated with 41 springs, as well as, Pine Creek, Oak Creek, Lost Creek, and First Creek to proper functioning condition will improve both water quantity and quality. Water availability would be expected to improve as the water holding capability of these areas increases. Flows would be expected to increase in both volume and duration throughout the year. The filtering ability of a healthy riparian area will assist in improvement of overall water quality. (All Alts.)

The elimination of tamarisk from 15 springs, as well as Pine and Oak Creeks, will contribute to a reduction in salt loading to surface waters. Tamarisk is a salt concentrator (concentrates salts around its roots). During high intensity thunderstorms, these salts are flushed into nearby surface waters. Recent

tamarisk removal projects in southern Nevada have also produced increased water quality and quantity through the reduction in water consumption by the water loving tamarisk. (All Alts.)

Long term use of 9 springs by wild horses and burros will continue to result in water quality standards being exceeded for fecal coliform. Although the riparian areas associated with the springs will be fenced to eliminate access to these animals, a portion of the flow emanating from these sources will continue to be vulnerable to contamination and continued non-conformity to water quality standards.

Air Quality

Because a large portion of the NCA is located within the Las Vegas Valley Non-Attainment Area, any reduction in particulate emissions (pm10) is considered a positive impact. The primary contributor of particulates from the NCA is a result of dust generated by vehicles utilizing dirt roads and parking areas, and vehicle exhausts. A decrease in the amount of these emissions is expected as a result of the closure of 88.4 miles of dirt roads (165.9 acres) and the paving of 3.87 acres of existing roads and parking areas. Paving of existing roads and parking areas would substantially reduce particulate emissions because these acres include areas with the highest visitor use in the NCA (Red Spring Picnic Area and the White Rock, Willow Spring and Oak Creek roads).

Construction of the short loop Scenic Drive cut-off road from Sandstone Quarry to the Visitor Center would shorten the round trip distance from 15 to 6 miles. This would reduce mileage driven, and vehicle emissions produced, by every vehicle that uses the short loop by 60% as compared to the current situation which requires each and every vehicle that enters the Scenic Drive to travel its entire 13 mile length (and the two miles between the Scenic Drive entrance and exit) regardless of the desired area of visitation. While it is not possible to calculate the total benefit of this shorter route until traffic counts of the new route's use becomes available, it is known that the heaviest concentration of site specific short-term users is at Calico 1, Calico 2 and Sandstone Quarry. Once their visit's purpose is concluded at these sites, the visitor's primary desire is to exit as quickly as possible. The short loop would also facilitate the establishment of a low cost quick turn-around shuttle bus system from the entrance fee station parking lot and Visitor Center for climbers and hikers using the Calico Hills and Sandstone Quarry areas. This shuttle system could significantly reduce the number of vehicles traveling to these sites.

Vegetation

Closure of 88.4 miles of dirt roads would result in revegetation of 165.9 acres as native plants colonize these routes. Development or expansion of three parking area/trailheads along the Scenic Drive and construction of a “short loop” Scenic Drive return road from Sandstone Quarry to the Visitor Center would result in the loss of vegetation on 7.39 acres.

Based on trend data and field studies, it does not appear that the objectives for desired plant community, particularly the goal of 5% (minimum) basal cover for native grasses, can be achieved over large areas in the vicinity of water sources that are used by wild horses and burros. Conversely, areas distant from water sources more closely approximate the desired plant community objectives, particularly for native grasses (BLM field studies 1999). Trend data from the Mud Spring exclosure (1990-1999) shows that the quantity and quality of grass species can be increased in an ungrazed area. However, the area subject to grazing outside the exclosure remained static and virtually unchanged. Field studies by BLM staff have found that in large areas there is a near total absence of the native grasses that should be found. Years of cattle grazing, not wild horses and burros, probably caused the decline or absence of grass species, but the continued selective grazing of these forage species by wild horses and burros, even at current population levels, is enough to prevent re-establishment of the grass component.

Aggressive fire suppression in Blackbrush communities would help to ensure protection of this habitat type. Blackbrush communities are now highly susceptible to fire damage due to the invasion of light flashy grass fuels which now support and easily carry fire through this formerly low intensity and fire intolerant vegetation type. (All Alternatives)

Development of a prescribed fire program in the montane chaparral communities of the escarpment canyons would restore the health of these habitats and reintroduce a natural element of the landscape. Fire use would reduce the accumulation of fuels resulting from previous aggressive suppression of all fires, which has been shown to lead to devastating fires that damage or eliminate even those species which normally would thrive on periodic disturbance caused by fire.

Recreational Opportunities

Camping

Resource damage associated with overflow and illegal off-site camping due to a lack of current capacity would be reduced if not eliminated. Completion of the 13 Mile Campground will finalize the process of consolidating designated camping use in the NCA. (All Alternatives)

The new campground, 2.5 miles southeast of Calico Basin, offers campers improved facilities including 5 group sites (presently 0 sites) and 59 individual/family sites (a 56% increase) with a final design capacity of 10 group and 100 individual sites. Restroom facilities will be vault toilets (as opposed to porta-potties) and each site will have a tent pad, picnic table and barbecue grill provided.

The location of the new campground will allow visitors convenient access to other recreational pursuits in Red Rock Canyon. At the same time, the location will not impair the scenic quality Red Rock Canyon offers. Closing Oak Creek Campground has removed a negative impact on the aesthetic quality of Red Rock Canyon's primary scenic vicinity. (All Alternatives)

There will be no impact on the maximum camping stay limit which would remain 14 days. There will be an impact on dispersed camping. Where camping presently is not restricted in the NCA north of La Madre and south and east of the Bird Spring Range (the lands added to the NCA in the 1994 NCA expansion), certain restrictions will be imposed. Dispersed camping north of La Madre will be limited to existing disturbed sites. If monitoring shows an increase in disturbance, camping will be limited to designated disturbed sites. In the area south and east of the Bird Spring Range, camping will be limited to existing disturbed sites within 200 feet of designated roads.

Rock Climbing (same for All Alternatives)

Coordination between BLM and the climbing community would be enhanced through a Liaison Council. This partnership between climbers, climbing businesses, guides and the BLM would provide for improved communications and understanding of both climbers needs and BLM's management responsibilities, rules and regulations.

Climbing management would be the same as it is currently under the Interim GMP.

Bolting would continue to be allowed except for two restricted areas: Sandstone Quarry, no bolting within 1/4

mile of parking area; and the Wilderness Study Areas.

Commercial climbing school permit numbers would remain the same but minimum use limits would be implemented to ensure that the public is being provided adequate services.

Commercial guiding permits would remain at six (6) long-term multi-year and ten (10) individual visit limited “guest” permits.

Requiring commercial climbing schools to operate at a minimum level of 100 user days per year to retain their permit privileges could cause the permits of two or three companies to be terminated in 2000. These companies, which primarily operate out of state and only use the NCA occasionally, would probably not meet the minimum use requirement for two years in a row and thus be subject to termination. The result of setting minimum use levels is expected to be increased access to climbing services for the visiting public with an increase of 500 user days per year. The impact of increased user days by commercial permittees would be negligible since use by private climbers, estimated to be in the thousands of user days, far exceeds commercial use.

Limits on commercial group size and areas of use would provide for dispersal of use and reduce congestion at popular climbing locations.

Target Shooting

No shooting, other than hunting with a valid hunting license and permit, is allowed in the National Conservation Area. There will be no impact or change to the current situation since RRCNCA is closed to target shooting. (Alternatives 2, 3, 4 &5)

Trail Opportunities

Trail opportunities for hikers, horse riders and mountain bikers would all be enhanced with the addition of 43.3 miles of trail designated and added to the existing trails network. 38.9 miles are existing routes which have not been formally designated, and 4.4 miles do not exist at this time and would require new construction.

Mountain bike use in the Scenic Drive vicinity would be limited to the trail between Willow Spring and the Visitor Center. The Oak Creek trails would no longer be designated for mountain bike use. This will be a reduction of 3.5 miles of trail for mountain bike enthusiasts. It will have a positive affect on other trail users by eliminating potential user conflicts where hiking use is

very heavy. Use of the Willow to Visitor Center trail will have minor impact on other users as the trail location is very open with no sudden turns and visitor use is low.

Mountain bike use is enhanced in other locations with the designation of trails north of Kyle Canyon Road and southeast of the Bird Spring Range.

Equestrian opportunities within the core of the NCA (Calico Hills south to First Creek) are reduced by limiting use to designated trails. No dispersed (off trail) use would be allowed.

Touring Opportunities

Dirt Roads

There would be a reduction of dirt roads available for public use throughout the NCA. While the most commonly used routes would remain open, of the 159.0 miles of dirt road inventoried in the NCA, 73.8 miles would be designated for public access and 85.2 miles would be closed (some have already been closed under direction of the IGMP). The above closures would result in a 54% reduction of access for the off-highway vehicle (OHV) community.

Paved Roads

Overlooks and picnic areas in the Scenic Drive vicinity, and access to these sites will eventually be paved.

New sites to be constructed include 1 new overlook and the expansion of 2 existing sites. This would result in 2.06 acres of new paving.

One new road is proposed, which would allow visitors the option of driving the entire 13 mile Scenic Drive or taking a short loop when activities focus on the Calico Hills area. The optional route would be 5.65 miles, with the new construction occurring between Sandstone Quarry and the Visitor Center. This would include 2.65 miles of pavement, although it would not be all new disturbance.

The proposed paving projects will benefit the recreating public by providing approximately 75 additional parking spaces around the Scenic Drive, reducing particulate matter in the air, providing smoother surfaces for highway design vehicles, and offering a shorter loop drive opportunity. The short loop not only benefits those that do not wish to drive, bicycle or jog the entire 13 mile Scenic Drive, but also sightseers that prefer the longer drive and do not want the enjoyment of their experience lessened by being constantly passed and tailgated by others impatient to quit the Scenic Drive.

The new short loop would also allow the Scenic Drive to remain open during flash flood events when many local residents want to use the road to see waterfalls which form on the rocks. Currently if either Sandstone, Red Rock or Pine Creek washes flood the entire Scenic Drive must be shut down for public safety. This new road would allow the first three miles of the Scenic Drive to be open at all times as it avoids all the washes.

For hikers and climbers, the view from higher elevations will include an additional 111.26 acres of paved surfaces dispersed throughout the Scenic Drive vicinity.

Cultural Resources (same for All Alternatives)

Continued emphasis would be placed on protecting cultural resources from damage and loss. Where necessary, existing trails would be re-routed to direct use away from sensitive areas. Where separation of uses is not possible, an increased emphasis on visitor education and interpretation will be used to educate visitors on the need to avoid inadvertently damaging fragile cultural sites.

Continued restriction of vehicle access at Brownstone Canyon and new limits on vehicle access to the Cottontail site will provide long term protection while still allowing for public appreciation and use of these areas.

Enhancing existing volunteer partnerships to provide for improved site monitoring will provide greatly improved information on site conditions and use patterns. Bureau staffing limits have not allowed adequate monitoring to be done in the past.

Signing of rock art sites at climbing locations would be used to reduce the impact of climbing on these resources.

Native American Concerns (same for All Alternatives)

The proposed plan provides for and encourages consultation with Native Americans on issues that may affect Native American values and traditions. As provided for by law, provision has been made for the use of NCA lands and resources for traditional ceremonial purposes. As opportunities arise, Native American partnerships will be developed to enhance and improve cultural exhibits and to provide improved education on Native American issues for NCA visitors.

Visual Resources

The most significant, and positive, impact to visual resources will be the closure of the Oak Creek Campground and Spanish Trail overflow camping area. Both of these areas are visually evident

to the casual observer. Oak Creek interrupts the view of the escarpment and lower valley floor with tents, vehicles, motor homes and the large silver water trailer. The new camping area cannot be seen from any of the regularly used roads or trails in the NCA. (All Alternatives)

Closure of 88.4 miles of dirt roads would result in revegetation and the eventual visual disappearance of dirt tracks on 165.9 acres as native plants colonize these routes. Development or expansion of three parking area/trailheads along the Scenic Drive and construction of a "short loop" Scenic Drive return road from Sandstone Quarry to the Visitor Center would result in visual impacts characteristic of paved surfaces on 11.26 acres. The impact of this paving is mitigated by the fact that 3.87 acres involves paving of existing dirt roads and parking areas. The visual impact of paving these areas will actually be reduced due to 1) the darker color of the paving which will blend with surrounding natural colors better than the bright bare surface of heavily used dirt roads and 2) the elimination of the dust plume that accompanies each vehicle using these dirt roads.

Wilderness Characteristics

Under this alternative, both the La Madre Mountains Wilderness Study Area (WSA) and the Pine Creek WSA will continue to be managed in compliance with the *Interim Management Policy for Lands Under Wilderness Review* (H-8550-1). (All Alternatives)

Naturalness of both the La Madre Mountains and Pine Creek WSAs would see improvement through the restoration of riparian areas associated with 41 springs, as well as, Pine Creek, Oak Creek, Lost Creek, and First Creek to proper functioning condition. The elimination of non-native vegetative species (i.e. tamarisk) along with improvement of vegetative diversity will ensure natural, self maintaining riparian areas.

Wild horses and burros would continue to utilize 2 springs in the Pine Creek WSA. This would necessitate the continued use of protective fencing around the riparian areas associated with these springs. The presentation of unnatural manmade features into the landscape would continue. (Alternatives 1, 2 & 3)

Rock climbing restrictions that includes no new bolts in WSAs; no alterations of the rock surfaces; no establishment of permanent fixed ropes or cables; and the encouragement of the use of equipment that better blends with the rock face will all contribute to minimizing impacts to naturalness and the WSAs. Although rock climbing activity will be noticeable while climbers are present on the rock faces, during inactive periods evidence of this activity would be substantially unnoticeable. (All Alts)

The closure and eventual rehabilitation of 19.3 miles (46.4 acres) of ways within the La Madre Mountains WSA north of La Madre Mountain and in Little Red Rock would halt deterioration of wilderness characteristics caused by expansion of these ways through casual use. Ways which were inventoried in 1979 as short intrusions into lands with wilderness characteristics now form an interconnected system of routes, none of which has been officially approved, which has caused significant and visual localized impacts to naturalness. (All Alternatives)

By proposing no new development in the WSAs and limiting facilities within the WSAs to existing hiking trails, re-routing sections of these trails to avoid sensitive riparian areas and plant populations, protection of inventoried wilderness characteristics would be ensured. (All Alternatives)

Alternative 4

Biodiversity

Biodiversity Preservation

An ongoing program of population monitoring will provide the data necessary to evaluate biodiversity and to better define the status of individual species and their associations. Mitigating the impacts, both past and present, of recreational use and facilities on populations and discrete habitat niches would provide positive momentum towards ensuring that the diverse and fragile biodiversity of the NCA is preserved. Improved inventory and understanding of both plant and animal populations in the NCA has provided a greater understanding of biodiversity/human interactions.

Managing recreation use to avoid active raptor nests; limiting access to caves critical as bat maternity colonies; restoring Willow and Red Springs; re-routing trails out of riparian areas; defining a specific trail to Bridge Mt.; closing and rehabilitating trails in the Pine Creek WSA; and directing foot traffic away from the Natural Area in the North fork of Pine Creek are all actions that would reduce human impacts on specific identified species that are easily displaced by human presence or inadvertently impacted by human use because the species, like springsnails, cannot be detected. Species which will directly benefit from the above are the Peregrine falcon, Townsend's Big-eared bat, springsnail, Red Rock Canyon aster, and an assemblage of plants, ferns and amphibians in the North Fork of Pine Creek Canyon. (All Alternatives)

By restoring Willow and Red Springs and reducing human use of the spring brook, the deterioration of springsnail habitat may be halted if not reversed while still allowing recreation uses away from the critical riparian area and snail habitat. Re-introduction of the springsnail at Willow Spring, should continued inventories confirm its disappearance, would provide an improved gene pool, double the number of habitat areas and reduce the risk of species elimination due to a catastrophic event. Inventory of additional springs may discover new populations of this rare species. (All Alternatives)

Implementation of the Blue Diamond Cholla Conservation Agreement by BLM, the U.S. Fish and Wildlife Service and the James Hardie Gypsum Corp. would ensure the protection of this species and its only known habitat. Completion of the proposed exchange between BLM and James Hardie would place approximately 98% of the cholla's known habitat within the NCA. (All Alternatives)

Ecosystem Management

Elimination of wild horses and burros north of State Route 160 would have a positive impact on improving the ecosystem integrity of this portion of the NCA. Most important would be; 1) the elimination of competition for limited water resources between horses and burros and native wildlife; 2) the elimination of the need for range improvements or fencing at Shovel, Lone Grapevine and Mud Spring # 1; and 3) the reduction in grazing pressure on native grasses. The removal of significant amounts of water from riparian areas through pipelines and water troughs at Lone Grapevine and Mud #1 springs could be eliminated resulting in restoration of historic riparian environments. The chance for achieving success in the objective of increasing, or restoring, a grass component to the desired plant community would be greatly enhanced. The heavy utilization of forage north of the now fenced off State Route 160, caused by the apparent reluctance of horses to cross (south) to former grazing areas using the new box culverts under the highway, would be eliminated.

Utilization of Bighorn sheep as an umbrella indicator species would not only provide a method of evaluating recreational impacts and habitat pressures but it would unite BLM's efforts with years of data collection and management by the Nevada Division of Wildlife. This historical data will enable trends to be apparent much more readily and enhance inter-agency cooperative efforts. (Alternatives 3, 4 & 5)

Aggressive suppression of fires in low elevation communities, in particular Blackbrush, would reduce the trend toward conversion of native desert to annual grassland caused by fires supported by the invasion of highly flammable fine (grass) fuels. This would protect a key component of the Mojave Desert ecosystem in the NCA. (All Alternatives)

By implementing a prescribed natural fire program in the montane chaparral communities of the escarpment's canyons, the fire ecology of this habitat type would be enhance. Successful implementation of this program would benefit fire dependent species like the Ponderosa pine while reducing fuel loading which, when allowed to accumulate to unnatural volumes through aggressive fire suppression, actually increases the level of damage when a fire does occur and threatens the existence of other (often fire tolerant) species, like the Ponderosa pine. While Pine Creek still supports a healthy stand of Ponderosa pine, most of the other canyons have been burned out and stumps are the only evidence Ponderosa pine once grew there. Because of the narrow restricted nature of the escarpment's canyons, it is unlikely that the prescribed burns would exceed 5 acres each and a total of 50 acres over the next ten years. Natural fires exceeding this size by hundreds or thousands of acres have occurred numerous times in the NCA without lasting impact. (Alternatives 3, 4 & 5)

The use of fire to re-establish a mosaic pattern and provide openings within the pinyon-juniper uplands, which dominate the higher elevations in the NCA, would provide greater habitat diversity and forage values. Aggressive fire suppression in the past has created a homogeneous monotypic forest canopy where past natural disturbance through fire once created pockets of uneven aged forest. Based on past fire histories, an average of two fires per year at an average size of two to five acres could be expected. (Alternatives 3, 4 & 5)

The closure of 92.9 miles of dirt roads would provide the greatest reduction of vehicle travel in the NCA of any of the alternatives and reduce habitat fragmentation throughout the NCA.

Wild Horses and Burros

The HMA would be reduced in size and wild horse and burro use would be limited to the area south of State Route 160. This alternative would reduce the area of the HMA in which wild horses and burros are managed by approximately 44%. However, much of the reduction consists of cliff and canyon areas not used by wild horses and burros because they are too steep and inaccessible. While a Herd Management Plan would need to be prepared for a complete analysis of water and forage availability, it is possible that this alternative would result in complete removal of all burros in order to provide adequate water and forage to sustain a wild horse herd of approximately 60-75 animals.

Implementation of this alternative would allow for the removal of fencing at Mud, Lone Grapevine and Shovel springs. These springs were fenced to eliminate horse use at the water source, due to documented damage to the riparian area. (Alternatives 4 & 5)

Reconstruction of Tunnel Spring (Wilson Tank) would be necessary as this critical water source south of State Route 160 is unreliable (dry in 1998). However, even with reconstruction, periodic water hauls to this site, as was done in both 1991/92 and 1998, would probably be required. (Alternatives 1, 2, 3 & 4)

A viable population of wild horses would remain in the HMA.

Restricting wild horses and burros to the area south of State Route 160 would make the opportunity for viewing these animals, a popular visitor (and tour bus) activity, more difficult. Visitors would have to travel to the Cottonwood Valley area off State Route 160 to view animals. At the same time, it would improve visitor safety and prevent an average of four animal deaths per year by eliminating animal-vehicle accidents and by eliminating the traffic jams which occur regularly on State Route 159 due to visitors stopping to photograph and (illegally) feed burros.

Riparian, Water, Air and Vegetative Resources

Riparian Restoration

Restoration of riparian areas associated with 41 springs, as well as, Pine Creek, Oak Creek, Lost Creek, and First Creek to proper functioning condition will improve both water quantity and quality. Improved water availability will contribute to a more diverse riparian habitat, with a restored native plant community, and wildlife population. Positive responses and riparian vegetation recovery are already being seen at springs where actions have been taken in the past - Wheeler Camp, Lone Grapevine, Shovel, Red and Willow Springs. Restoration of springsnail habitat through an improved riparian area at Red and Willow Springs, may lead to stable, increased snail populations, avoiding the potential for listing the species as Threatened or Endangered. (All Alternatives)

The removal of all wild horses and burros north of State Route 160 will eliminate the need for protective fencing around riparian areas associated with 3 springs currently utilized by these animals. Fences would be removed and these riparian areas would continue to improve without the need for manmade protective measures. (Alternatives 4 & 5)

Riparian areas associated with Willow Spring, Lost Creek, Pine Creek and Oak Creek which currently receive heavy recreational use would be evaluated to determine rehabilitation measures which might be taken to minimize human impacts. An effort would be made to deflect recreational use to non-riparian areas through trail rerouting, closure of damaged areas to use and promotion of alternative use sites. Closing and camouflaging numerous side and spur trails would reduce surface disturbance, erosion and vegetation loss. The riparian areas associated with these water sources are expected to improve, but at a slower rate than other riparian areas in the NCA. (Alternatives 3, 4 & 5)

Water Resources

Restoration of riparian areas associated with 41 springs, as well as, Pine Creek, Oak Creek, Lost Creek, and First Creek to proper functioning condition will improve both water quantity and quality. Water availability would be expected to improve as the water holding capability of these areas increases. Flows would be expected to increase in both volume and duration throughout the year. The filtering ability of a healthy riparian area will assist in improvement of overall water quality. (All Alts.)

The elimination of tamarisk from 15 springs, as well as Pine and Oak Creeks, would contribute to a reduction in salt loading to surface waters. Tamarisk is a salt concentrator (concentrates

salts around its roots). During high intensity thunderstorms, these salts are flushed into nearby surface waters. Recent tamarisk removal projects in southern Nevada have also produced increased water quality and quantity through the reduction in water consumption by the water loving tamarisk. (All Alts.)

Reconstruction of Bird and Tunnel Springs would provide more dependable waters for wildlife (and wild horses and burros). These two springs are the only water sources in the NCA south of State Route 160, and provide critical wildlife waters. Competition between wildlife (bighorn sheep) and wild horses and burros for this limited water source would continue.

Air Quality

Because a large portion of the NCA is located within the Las Vegas Valley Non-Attainment Area, any reduction in particulate emissions (pm10) is considered a positive impact. The primary contributor of particulates from the NCA is a result of dust generated by vehicles utilizing dirt roads and parking areas. A decrease in the amount of these emissions is expected as a result of the closure of 92.9 miles of dirt roads (177.1 acres) and the paving of 3.87 acres of existing roads and parking areas. Paving of existing roads and parking areas would substantially reduce particulate emissions because these are areas with the highest visitor use in the NCA (Red Spring Picnic Area and the White Rock, Willow Spring and Oak Creek roads).

Vegetation

Closure of 92.9 miles of dirt roads would result in revegetation of 177.1 acres as native plants colonize these routes. Development or expansion of three parking area/trailheads along the Scenic Drive and construction of a “short loop” Scenic Drive return road from Sandstone Quarry to the Visitor Center would result in the loss of vegetation on 1.61 acres.

Based on trend data and field studies, it does not appear that the objectives for desired plant community, particularly the goal of 5% (minimum) basal cover for native grasses, can be achieved over large areas in the vicinity of water sources that are used by wild horses and burros. Conversely, areas distant from water sources more closely approximate the desired plant community objectives, particularly for native grasses (BLM field studies 1999). Trend data from the Mud Spring exclosure (1990-1999) shows that the quantity and quality of grass species can be increased in an ungrazed area. However, the area subject to grazing outside the exclosure remained static and virtually unchanged. Field studies by BLM staff have found that in large areas there is a near total absence of the native grasses that should be found. Years of cattle grazing, not wild horses and

burros, probably caused the decline or absence of grass species, but the continued selective grazing of these forage species by wild horses and burros, even at current population levels, is enough to prevent re-establishment of the grass component.

Aggressive fire suppression in Blackbrush communities would help to ensure protection of this habitat type. Blackbrush communities are now highly susceptible to fire damage, due to the invasion of light flashy grass fuels, which now support and easily carry fire through this formerly low intensity and fire intolerant vegetation type. (All Alternatives)

Development of a prescribed fire program in the montane chaparral communities of the escarpment canyons would restore the health of these habitats and reintroduce a natural element of the landscape. Fire use would reduce the accumulation of fuels resulting from previous aggressive suppression of all fires which has been shown to lead to devastating fires which damage or eliminate even those species which normally would thrive on periodic disturbance caused by fire.

Recreational Opportunities

Camping

Resource damage associated with overflow and illegal off-site camping due to a lack of current capacity would be reduced if not eliminated. Completion of the 13 Mile Campground will finalize the process of consolidating designated camping use in the NCA. (All Alternatives)

The new campground, 2.5 miles southeast of Calico Basin, will offer campers an enhanced experience over what is presently offered. 5 group sites will be available (presently 0 sites) and 59 individual/family sites (a 56% increase) with an eventual design goal of 100 individual and 10 group sites. Restroom facilities will be vault toilets (as opposed to porta-potties) and each site will have a tent pad, picnic table and barbecue grill provided. (All Alternatives)

The location of the new campground will allow visitors convenient access to other recreational pursuits in Red Rock Canyon. At the same time, the location will not impair the scenic quality Red Rock Canyon offers. Closing Oak Creek Campground will remove a negative impact on the aesthetic quality of Red Rock Canyons primary scenic vicinity. (All Alternatives)

Several other changes will have impacts on camping in the NCA as follows:

The maximum stay for dispersed use campers (not in the

campground) will be limited to 7 days, a 50% reduction from the current policy.

Dispersed camping will be limited to a maximum group size of 10 people. Groups of more than 10 must use the 13 Mile Campground. This would be a low impact on the existing situation since few groups have been that large, other than those that traditionally make special arrangements with the BLM.

Where camping presently is not restricted in the NCA north of La Madre and south and east of the Bird Spring Range (the lands added to the NCA in the 1994 NCA expansion), opportunities would be restricted or eliminated. Dispersed camping north of La Madre would be limited to existing disturbed sites. If monitoring shows an increase in disturbance, camping would be limited to designated disturbed sites. No dispersed camping would be allowed south of State Route 160.

Rock Climbing (same for All Alternatives)

Coordination between BLM and the climbing community would be enhanced through a Liaison Council. This partnership between climbers, climbing businesses, guides and the BLM would provide for improved communications and understanding of both climbers needs and BLM's management responsibilities, rules and regulations.

Climbing management would be the same as it is currently under the Interim GMP.

Bolting would continue to be allowed except for two restricted areas: Sandstone Quarry, no bolting within 1/4 mile of parking area; and the Wilderness Study Areas.

Commercial climbing school permit numbers would remain the same but minimum use limits would be implemented to ensure that the public is being provided adequate services.

Commercial guiding permits would remain at six (6) long-term multi-year and ten (10) individual visit limited "guest" permits.

Requiring commercial climbing schools to operate at a minimum level of 100 user days per year to retain their permit privileges could cause the permits of two or three companies to be terminated in 2000. These companies, which primarily operate out of state and only use the NCA occasionally, would probably not meet the minimum use requirement for two years in a row and thus be subject to

termination. The result of setting minimum use levels is expected to be increased access to climbing services for the visiting public with an increase of 500 user days per year. The impact of increased user days by commercial permittees would be negligible since use by private climbers, estimated to be in the thousands of user days, far exceeds commercial use.

Limits on commercial group size and areas of use would provide for dispersal of use and reduce congestion at popular climbing locations.

Target Shooting

No shooting, other than hunting with a valid hunting license and permit, is allowed in the National Conservation Area. There will be no impact or change to the current situation since RRCNCA is closed to target shooting. (Alternatives 2, 3, 4 & 5)

Trail Opportunities

Trail opportunities for hikers, horse riders and mountain bikers would all be enhanced with the addition of 43.3 miles of trail designated and added to the existing trails network. 38.9 miles are existing routes which have not been formally designated, and 4.4 miles do not exist at this time and would require new construction.

Mountain bike use will not be allowed on any of the trails in the Scenic Drive vicinity. This would disallow use on 3 currently authorized trails, a reduction of 7.2 miles of trail for Mountain bike enthusiasts. It will have a positive affect on other trail users by eliminating potential user conflicts where hiking use is very heavy. It will also cut down on unauthorized use, since there will be no question on which trails are/are not designated for mountain bike use.

Mountain bike use is enhanced in other locations with the added designation of 25.1 miles from trails north of Kyle Canyon Road and southeast of the Bird Spring Range.

Equestrian opportunities within the original NCA boundary are reduced by limiting use to designated trails. No dispersed (off trail) use would be allowed.

Touring Opportunities

Dirt Roads

There will be a reduction of dirt roads available for public use throughout the NCA. Of the 159.0 miles of dirt road inventoried

in the NCA, 66.1 miles would be designated for public access and 92.9 miles would be closed (some have already been closed under direction of the IGMP). The above closures would result in a 58% reduction of access for the off-highway vehicle (OHV) community.

Paved Roads

Overlooks and picnic areas in the Scenic Drive vicinity, and access to these sites will eventually be paved.

New sites to be constructed include 1 new overlook and the expansion of 2 existing sites. This would result in 2.06 acres of new paving. The proposed paving projects will benefit the recreating public by providing approximately 75 additional parking spaces around the Scenic Drive, reducing particulate matter in the air, and providing smoother surfaces for highway design vehicles.

For hikers and climbers, the view from higher elevations will include an additional 5.48 acres of paved surfaces dispersed throughout the Scenic Drive vicinity.

The short loop return route from Sandstone Quarry will not be constructed. This denies vehicle tourists, bicycle riders and joggers the option of having a shorter alternate route within the Scenic Drive area. The same user groups will suffer the impatience of those desiring a quick exit. The scenic view from higher elevation viewpoints will not include the additional 5.78 acres of pavement that would occur on the valley floor if the road were constructed.

Cultural Resources (same for All Alternatives)

Continued emphasis would be placed on protecting cultural resources from damage and loss. Where necessary, existing trails would be re-routed to direct use away from sensitive areas. Where separation of uses is not possible, an increased emphasis on visitor education and interpretation will be used to educate visitors on the need to avoid inadvertently damaging fragile cultural sites.

Continued restriction of vehicle access at Brownstone Canyon and new limits on vehicle access to the Cottontail site will provide long term protection while still allowing for public appreciation and use of these areas.

Enhancing existing volunteer partnerships to provide for improved site monitoring will provide greatly improved information on site conditions and use patterns. Bureau staffing limits have not allowed adequate monitoring to be done in the past.

Signing of rock art sites at climbing locations would be used to reduce the impact of climbing on these resources.

Native American Concerns (same for All Alternatives)

The proposed plan provides for and encourages consultation with Native Americans on issues that may affect Native American values and traditions. As provided for by law, provision has been made for the use of NCA lands and resources for traditional ceremonial purposes. As opportunities arise, Native American partnerships will be developed to enhance and improve cultural exhibits and to provide improved education on Native American issues for NCA visitors.

Visual Resources

The most significant, and positive, impact to visual resources will be the closure of the Oak Creek Campground and Spanish Trail overflow camping area. Both of these areas are visually evident to the casual observer. Oak Creek interrupts the view of the escarpment and lower valley floor with tents, vehicles, motor homes and the large silver water trailer. The new camping area cannot be seen from any of the regularly used roads or trails in the NCA. (All Alternatives)

Closure of 92.9 miles of dirt roads would result in revegetation and the eventual visual disappearance of dirt tracks on 177.1 acres as native plants colonize these routes. Development or expansion of three parking area/trailheads along the Scenic Drive would result in visual impacts characteristic of paved surfaces on 5.48 acres. The impact of this paving is mitigated by the fact that 3.87 acres involves paving of existing dirt roads and parking areas. The visual impact of paving these areas will actually be reduced due to 1) the darker color of the paving which will blend with surrounding natural colors better than the bright bare surface of heavily used dirt roads and 2) the elimination of the dust plume that accompanies each vehicle using these dirt roads.

Wilderness Characteristics

Under this alternative, both the La Madre Mountains Wilderness Study Area (WSA) and the Pine Creek WSA will continue to be managed in compliance with the *Interim Management Policy for Lands Under Wilderness Review* (H-8550-1). (All Alternatives)

Naturalness of both the La Madre Mountains and Pine Creek WSAs would see improvement through the restoration of riparian areas associated with 41 springs, as well as, Pine Creek, Oak Creek, Lost Creek, and First Creek to proper functioning condition. The elimination of non-native vegetative species (i.e. tamarisk)

along with improvement of vegetative diversity will ensure natural, self maintaining riparian areas. (All Alternatives)

The removal of all wild horses and burros from the area north of State Route 160 will enable the removal of existing protective fencing around 2 spring associated riparian areas within the Pine Creek WSA. Elimination of these man-made features would contribute to a more natural landscape and wilderness experience.

Rock climbing restrictions that includes no new bolts in WSAs; no alterations of the rock surfaces; no establishment of permanent fixed ropes or cables; and the encouragement of the use of equipment that better blends with the rock face will all contribute to minimizing impacts to naturalness and the WSAs. Although rock climbing activity will be noticeable while climbers are present on the rock faces, during inactive periods evidence of this activity would be substantially unnoticeable. (All Alts)

The closure and eventual rehabilitation of 19.3 miles (46.4 acres) of ways within the La Madre Mountains WSA north of La Madre Mountain and in Little Red Rock would halt deterioration of wilderness characteristics caused by expansion of these ways through casual use. Ways which were inventoried in 1979 as short intrusions into lands with wilderness characteristics now form an interconnected system of routes, none of which has been officially approved, which has caused significant and visual localized impacts to naturalness. (All Alternatives)

By proposing no new development in the WSAs and limiting facilities within the WSAs to existing hiking trails, re-routing sections of these trails to avoid sensitive riparian areas and plant populations, protection of inventoried wilderness characteristics would be ensured. (All Alternatives)

Alternative 5

Biodiversity

Biodiversity Preservation

The emphasis on habitat management and monitoring would benefit three Federally Listed or Candidate species, forty-three State or BLM Sensitive Species and forty-one additional species covered by the Clark County Multi-Species Plan (as listed in App. 1). An ongoing program of population monitoring will provide the data necessary to evaluate biodiversity and to better define the status of individual species and their associations. Mitigating the impacts, both past and present, of recreational use and facilities on populations and discrete habitat niches would provide positive momentum towards ensuring that the diverse and fragile biodiversity of the NCA is preserved. Improved inventory and understanding of both plant and animal populations in the NCA has provided a greater understanding of biodiversity/human interactions.

Directing management efforts at the five Priority Management Areas listed in App. 2; Willow Spring, Bridge Mt. Blue Diamond Hill, Red Spring and the North Fork of Pine Creek Canyon, would immediately address those areas where biodiversity is most at risk. Managing recreation use to avoid active raptor nests; limiting access to caves critical as bat maternity colonies; restoring Willow and Red Springs; re-routing trails out of riparian areas; defining a specific trail to Bridge Mt.; closing and rehabilitating trails in the Pine Creek WSA; and directing foot traffic away from the Natural Area in the North Fork of Pine Creek are all actions that would reduce human impacts on specific identified species that are easily displaced by human presence or inadvertently impacted by human use because the species, like springsnails, cannot be detected. Species which will directly benefit from the above are the Peregrine falcon, Townsend's Big-eared bat, springsnail, Red Rock Canyon aster, and an assemblage of plants, ferns and amphibians in the North Fork of Pine Creek Canyon.

By restoring Willow and Red Springs and reducing human use of the spring brook, the deterioration of springsnail habitat may be halted if not reversed while still allowing recreation uses away from the critical riparian area and snail habitat. Re-introduction of the springsnail at Willow Spring, should continued inventories confirm its disappearance, would provide an improved gene pool by doubling the known habitat locations and reducing the risk of species elimination due to a catastrophic event. Inventory of additional springs may discover new populations of this rare species.

Implementation of the Blue Diamond Cholla Conservation Agreement by BLM, the U.S. Fish and Wildlife Service and the James Hardie Gypsum Corp. would ensure the protection of this species and its only known habitat. Completion of the proposed exchange between BLM and James Hardie would place approximately 98% of the cholla's known habitat within the NCA. (All Alternatives)

Ecosystem Management

Elimination of wild horses and burros would have a significant and positive impact on maintaining the ecosystem integrity of RRCNCA. Most significant would be the elimination of competition for limited water resources between horses/burros and native wildlife. The removal of significant amounts of water from riparian areas through pipelines and water troughs at four springs; Lone Grapevine, Mud #1, Tunnel and Bird, could be eliminated resulting in restoration of historic riparian environments (App. 10, Part C.). The heavier utilization of forage north of the now fenced off State Route 160, caused by the apparent reluctance of some horses to cross (south) to former grazing areas using the new box culverts under the highway, would be eliminated.

Utilization of Bighorn sheep as an umbrella indicator species would not only provide a method of evaluating recreational impacts and habitat pressures, but it would unite BLM's efforts with years of data collection and management by the Nevada Division of Wildlife. This historical data will enable trends to be apparent much more readily and enhance inter-agency cooperative efforts. (Alternatives 3, 4 & 5)

Aggressive suppression of fires in low elevation communities, in particular Blackbrush, would reduce the trend toward conversion of native desert to annual grassland caused by fires supported by the invasion of highly flammable fine (grass) fuels. This would protect a key habitat component of the Mojave Desert ecosystem in the NCA. (App. 4, Vegetative Community Types)(All Alternatives)

By implementing a prescribed natural fire program in the montane chaparral communities of the escarpment's canyons, the fire ecology of this habitat type would be enhance. Successful implementation of this program would benefit fire dependent species like the Ponderosa pine, while reducing fuel loading which, when allowed to accumulate to unnatural volumes through aggressive fire suppression, actually threatens the existence of other species, like the Ponderosa pine. While Pine Creek still supports a healthy stand of Ponderosa pine, most of the other canyons have been burned out and stumps are the only evidence Ponderosa pine once grew there. Because of the narrow restricted nature of the escarpment's canyons, it is unlikely that the prescribed burns would exceed 5 acres each and a total of 50

acres over the next ten years. Natural fires exceeding this size by hundreds or thousands of acres have occurred numerous times in the NCA without lasting impact. (App. 16, Fire Occurrence History)(Alternative 3, 4 & 5)

The use of fire to re-establish a mosaic pattern and provide openings within the pinyon-juniper uplands, which dominate the higher elevations in the NCA, would provide greater habitat diversity and forage values. Aggressive fire suppression in the past has created a homogeneous monotypic forest canopy where past natural disturbance through fire once created pockets of uneven aged forest. Based on past fire histories, an average of two fires per year at an average size of two to five acres could be expected. (App. 16, Fire Occurrence History)(Alts. 3, 4 & 5)

The closure of 86.8 miles of dirt roads would reduce habitat fragmentation throughout the NCA.

Wild Horses and Burros

Wild horses and burros would be eliminated from the portion of the Red Rock Herd Management Area (HMA) within RRCNCA. This would reduce the area of the HMA by 58%. However, much of the reduction consists of cliff and canyon areas which are not used by wild horses and burros because they are too steep and inaccessible. While a Herd Management Plan would need to be prepared for a complete analysis of water and forage availability, it is possible that this alternative could result in complete removal of all burros in order to provide adequate water and forage to sustain a wild horse herd of approximately 60-75 animals.

Approximately 61 burros and 71 horses currently are located in the HMA. It is unknown how many of these animals would need to be or could be relocated within the reduced HMA remaining south of the NCA rather than removed and adopted. A population of wild horses could be maintained in the reduced HMA but would require the development of artificial water sources to sustain a viable population.

Since there is no proposal to fence the HMA/RRCNCA boundary, it is likely that horses would move into and out of the most southern area of RRCNCA seasonally. The location of future water sources in the HMA would play a key role in horse use patterns.

Implementation of this alternative would allow for the removal of fencing at Mud #1, Lone Grapevine and Shovel springs; eliminate the need for fencing at Mud #2; and eliminate periodic water hauls to Tunnel, Bird and Mud #1 springs. The fenced springs have documented damage to the riparian area at the spring sources due to horse use. Additionally, all of the limited water

resources at Bird and Tunnel (Wilson Tank) Springs would be available for wildlife use. These two springs are the only water sources in the NCA south of State Route 160, and provide critical wildlife waters. Both springs are low producers and have gone dry periodically, Tunnel Spring in particular was dry in 1991/92 and again in 1998. (App. 11, Spring Discharge Measurements)

Removal of the horses and burros would eliminate the opportunity for viewing these animals within RRCNCA, a popular visitor activity. At the same time, it would improve visitor safety and prevent an average of four animal deaths per year by eliminating animal-vehicle accidents and by eliminating the traffic jams which occur regularly on State Route 159 due to visitors stopping to photograph and (illegally) feed burros.

Riparian, Water, Air and Vegetative Resources

Riparian Restoration

Restoration of riparian areas associated with 41 springs, as well as Pine Creek, Oak Creek, Lost Creek, and First Creek, to proper functioning condition will improve both water quantity and quality. Improved water availability will contribute to a more diverse riparian habitat, with a restored native plant community, and wildlife population. Positive responses and riparian vegetation recovery are already being seen at springs where actions have been taken in the past - Wheeler Camp, Lone Grapevine, Shovel, Red and Willow Springs. Restoration of spring snail habitat through an improved riparian area at Red and Willow Springs may lead to stable, increased snail populations avoiding the potential for listing the species as Threatened or Endangered. (All Alternatives)

The removal of all wild horses and burros from RRCNCA will eliminate the need for protective fencing around most riparian areas associated with 12 springs as well as Pine, Oak and First Creeks, currently utilized by these animals. Existing fences (7) could be removed and these riparian areas would continue to improve without the need for manmade protective measures.

Riparian areas associated with Willow Spring, Lost Creek, Pine Creek and Oak Creek will continue to be influenced by the heavy recreational use associated with sites around the Scenic Drive. The riparian areas associated with these water sources are expected to improve, but at a slower rate than other riparian areas in RRCNCA.

Water Resources

Restoration of riparian areas associated with 41 springs, as well as Pine Creek, Oak Creek, Lost Creek and First Creek to proper

functioning condition will improve both water quantity and quality. Water availability would be expected to improve as the water holding capability of these areas increases. Flows would be expected to increase in both volume and duration throughout the year. The filtering ability of a healthy riparian area will assist in improvement of overall water quality. (All Alternatives)

The elimination of tamarisk from 15 springs, as well as Pine and Oak Creeks, would contribute to a reduction in salt loading to surface waters. Tamarisk is a salt concentrator (concentrates salts around its roots). During high intensity thunderstorms, these salts are flushed into nearby surface waters. Recent tamarisk removal projects in southern Nevada have also produced increased water quality and quantity through the reduction in water consumption by the water loving tamarisk. (All Alts.)

The removal of all wild horses and burros from the NCA will eliminate a major source of fecal coliform pollution to 12 springs and other surface waters including Pine Creek, Oak Creek and First Creek. Waters currently exceeding water quality standards for this pollutant would be expected to improve to a conformity level.

Air Quality

Because a large portion of the NCA is located within the Las Vegas Valley Non-Attainment Area, any reduction in particulate emissions (pm10) is considered a positive impact. The primary contributor of particulates from the NCA is a result of dust generated by vehicles utilizing dirt roads and parking areas, and vehicle exhausts. A decrease in the amount of these emissions is expected as a result of the closure of 86.8 miles of dirt roads (162.2 acres) and the paving of 5.17 acres of existing roads and parking areas. Paving of existing roads and parking areas would substantially reduce particulate emissions because these are areas with the highest visitor use in the NCA (Red Spring Picnic Area and the White Rock, Willow Spring and Oak Creek roads).

Construction of the short loop Scenic Drive cut-off road from Sandstone Quarry to the Visitor Center would shorten the round trip distance from 15 to 6 miles. This would reduce mileage driven, and vehicle emissions produced, by every vehicle that uses the short loop by 60% as compared to the current situation which requires each and every vehicle that enters the Scenic Drive to travel its entire 13 mile length (and the two miles between the Scenic Drive entrance and exit) regardless of the desired area of visitation. While it is not possible to calculate the total benefit of this shorter route until traffic counts of the new route's use becomes available, it is known that

the heaviest concentration of site specific short-term users is at Calico 1, Calico 2 and Sandstone Quarry. Once their visit's purpose is concluded at these sites, the visitor's primary desire is to exit as quickly as possible. The short loop would also facilitate the establishment of a low cost quick turn-around shuttle bus system from the entrance fee station parking lot and Visitor Center for climbers and hikers using the Calico Hills and Sandstone Quarry areas. This shuttle system could significantly reduce the number of vehicles traveling to these sites.

Vegetation

Closure of 86.8 miles of dirt roads would result in revegetation of 162.2 acres as native plants colonize these routes. Development or expansion of three parking area/trailheads along the Scenic Drive and construction of a "short loop" Scenic Drive return road from Sandstone Quarry to the Visitor Center would result in the loss of vegetation on 7.39 acres.

Aggressive fire suppression in Blackbrush communities would help to ensure protection of this habitat type. Blackbrush communities are now highly susceptible to fire damage due to the invasion of light flashy grass fuels which now support and easily carry fire through this formerly low intensity and fire intolerant vegetation type. (All Alternatives)

Development of a prescribed fire program in the montane chaparral communities of the escarpment canyons would restore the health of these habitats and reintroduce a natural element of the landscape. Fire use would reduce the accumulation of fuels resulting from previous aggressive suppression of all fires, which has been shown to lead to devastating fires that damage or eliminate even those species which normally would thrive on periodic disturbance caused by fire. (Alternatives 3, 4 & 5)

<u>Recreational Opportunities</u>

Camping

Resource damage associated with overflow and illegal off-site camping due to a lack of current capacity would be reduced if not eliminated. Completion of the 13 Mile Campground will finalize the process of consolidating designated camping use in the NCA. (All Alternatives)

The location of the new campground will allow visitors convenient access to other recreational pursuits in Red Rock Canyon. At the same time, the location will not impair the scenic quality Red Rock Canyon offers. Closing Oak Creek Campground has removed a negative impact on the aesthetic quality of Red Rock Canyons primary scenic vicinity. (All Alternatives)

There will be no impact on the maximum stay limit which will remain at 14 days. There will be an impact on dispersed camping. Where camping presently is not restricted in the NCA north of La Madre Mt. and south and east of the Bird Spring Range (the lands added to the NCA in the 1994 NCA expansion), certain restrictions will be imposed. Dispersed camping north of La Madre Mt. will be limited to existing disturbed sites. If monitoring shows an increase in disturbance, camping will be limited to designated disturbed sites. In the area south and east of the Bird Spring Range, camping will be limited to existing disturbed sites within 200 feet of designated roads.

Rock Climbing (same for All Alternatives)

Coordination between BLM and the climbing community would be enhanced through a Liaison Council. This partnership between climbers, climbing businesses, guides and the BLM would provide for improved communications and understanding of both climbers needs and BLM's management responsibilities, rules and regulations.

Climbing management would be the same as it is currently under the Interim GMP.

> Bolting would continue to be allowed except for two restricted areas: Sandstone Quarry, no bolting within 1/4 mile of parking area; and the Wilderness Study Areas, no bolting.

Commercial climbing school permit numbers would remain the same but minimum use limits would be implemented to ensure that the public is being provided adequate services.

> Commercial guiding permits would remain at six (6) long-term multi-year and ten (10) individual visit limited "guest" permits.
>
> Requiring commercial climbing schools to operate at a minimum level of 100 user days per year to retain their permit privileges could cause the permits of two or three companies to be terminated in 2001. These are companies which primarily operate out of state and only use the NCA occasionally, so they would probably not meet the minimum use requirement for two years in a row and thus be subject to termination. The result of setting minimum use levels is expected to be increased access to climbing services for the visiting public with an increase of 500 user days per year. The impact of increased user days by commercial permittees would be negligible since use by private climbers, estimated to be in the thousands of user days, far exceeds commercial use.

Limits on commercial group size and areas of use would provide for dispersal of use and reduce congestion at popular climbing locations.

Target Shooting

No shooting, other than hunting with a valid hunting license and permit, is allowed in the National Conservation Area. There will be no impact or change to the current situation since RRCNCA is closed to target shooting. (Alternatives 2, 3, 4 & 5)

Trail Opportunities

Trail opportunities for hikers, horse riders, road bikers and mountain bikers would all be enhanced with the addition of 45.8 miles of trail designated and added to the existing trails network. 38.9 miles are existing routes which have not been formally designated, and 4.4 miles do not exist at this time and would require new construction.

Mountain bike use will not be allowed on any of the trails in the Scenic Drive vicinity. Use would be prohibited on 3 currently authorized trails, a reduction of 7.2 miles of trail for Mountain bike enthusiasts. It will have a positive affect on other trail users by eliminating potential user conflicts where hiking use is very heavy. It will also cut down on user confusion and unauthorized use, since there will be no question which trails are/are not designated for mountain bike use. Mountain bike use is enhanced in other locations with the added designation of 25.1 miles of trail north of Kyle Canyon Road and southeast of the Bird Spring Range.

Road biking would be enhanced with the paving of the dirt road/trail connecting Sandstone Quarry with Willow Spring. The number of bike riders on the Scenic Drive, between Sandstone Quarry and Willow Spring, would decrease, lessening bike/vehicle competition. The number of wrong way bike riders would be expected to decrease.

Equestrian freedom of travel would be reduced by limiting use to designated trails within the center of RRCNCA. No dispersed (off trail) use would be allowed.

Touring Opportunities

Dirt Roads

There would be a reduction of dirt roads available for public use throughout the NCA. While the most commonly used routes would remain open, of the 159.0 miles of dirt road inventoried in the NCA, 72.2 miles would be designated for public access and 86.8

miles would be closed (some are already closed under direction of the IGMP). The closures would result in a 55% reduction of dirt roads available for off-highway vehicle use.

Paved Roads

Overlooks and picnic areas in the Scenic Drive vicinity, and access to these sites will eventually be paved.

New sites to be constructed include 1 new overlook and the expansion of 2 existing sites. This would result in 2.06 acres of new paving.

One new road is proposed, which would allow visitors the option of driving the entire 13 mile Scenic Drive or taking a short loop when activities focus on the Calico Hills area. The optional route would be 5.65 miles, with the new construction occurring between Sandstone Quarry and the Visitor Center. This would include 2.65 miles of pavement, although it would not be all new disturbance.

The proposed paving projects will benefit the recreating public by providing approximately 75 additional parking spaces around the Scenic Drive, reducing particulate matter in the air, providing smoother surfaces for highway design vehicles, and offering a shorter loop drive opportunity. The short loop not only benefits those that do not wish to drive, bicycle or jog the entire 13 mile Scenic Drive, but also sightseers that prefer the longer drive and do not want the enjoyment of their experience lessened by being constantly passed and tailgated by others impatient to quit the Scenic Drive.

The new short loop would also allow the Scenic Drive to remain open during flash flood events when many local residents want to use the road to see waterfalls which form on the rocks. Currently if either Sandstone, Red Rock or Pine Creek washes flood the entire Scenic Drive must be shut down for public safety. This new road would allow the first three miles of the Scenic Drive to be open at all times as it avoids all the washes.

For hikers and climbers, the view from higher elevations will include an additional 11.26 acres of paved surfaces dispersed throughout the Scenic Drive vicinity.

Cultural Resources (same for All Alternatives)

Continued emphasis would be placed on protecting cultural resources from damage and loss. Where necessary, existing trails would be re-routed to direct use away from sensitive areas. Where separation of uses is not possible, an increased emphasis on visitor education and interpretation will be used to educate

visitors on the need to avoid inadvertently damaging fragile cultural sites.

Continued restriction of vehicle access at Brownstone Canyon and new limits on vehicle access to the Cottontail site will provide long term protection while still allowing for public appreciation and use of these areas.

Enhancing existing volunteer partnerships to provide for improved site monitoring will provide greatly improved information on site conditions and use patterns. Bureau staffing limits have not allowed adequate monitoring to be done in the past.

Signing of rock art sites at climbing locations would be used to reduce the impact of climbing on these resources.

Native American Concerns (same for All Alternatives)

The proposed plan provides for and encourages consultation with Native Americans on issues that may affect Native American values and traditions. As provided for by law, provision has been made for the use of NCA lands and resources for traditional ceremonial purposes. As opportunities arise, Native American partnerships will be developed to enhance and improve cultural exhibits and to provide improved education on Native American issues for NCA visitors.

Visual Resources

The most significant, and positive, impact to visual resources will be the improved visuals resulting from closure of the Oak Creek Campground and Spanish Trail overflow camping area. Both of these areas are visually evident to the casual observer. Oak Creek interrupts the view of the escarpment and lower valley floor with tents, vehicles, motor homes and the large silver water trailer. The new camping area cannot be seen from any of the regularly used roads or trails in the NCA. (All Alternatives)

Closure of 86.8 miles of dirt roads would result in revegetation and the eventual visual disappearance of dirt tracks on 162.2 acres as native plants colonize these routes. Development or expansion of three parking area/trailheads along the Scenic Drive and construction of a “short loop” Scenic Drive return road from Sandstone Quarry to the Visitor Center would result in visual impacts characteristic of paved surfaces on 13 acres. The impact of this paving is mitigated by the fact that 5.17 acres involves paving of existing dirt roads and parking areas. The visual impact of paving these areas will actually be reduced due to 1) the darker color of the paving which will blend with surrounding natural colors better than the bright bare surface of heavily used dirt roads and 2) the elimination of the dust plume that

accompanies each vehicle using these dirt roads.

Wilderness Characteristics

Under this alternative, both the La Madre Mountains Wilderness Study Area (WSA) and the Pine Creek WSA will continue to be managed in compliance with the *Interim Management Policy for Lands Under Wilderness Review* (H-8550-1). (All Alternatives)

Naturalness of both the La Madre Mountains and Pine Creek WSAs would see improvement through the restoration of riparian areas associated with 17 springs, as well as, Pine Creek, Oak Creek, Lost Creek, and First Creek to proper functioning condition. The elimination of non-native vegetative species (i.e. tamarisk) along with improvement of vegetative diversity will ensure natural, self maintaining riparian areas. (All Alternatives)

The removal of all wild horses and burros from the NCA will enable the removal of existing protective fencing around two spring riparian areas within the Pine Creek WSA. Elimination of these man-made features would contribute to a more natural landscape and wilderness experience. (Alternatives 4 & 5)

Rock climbing restrictions that includes no new bolts in WSAs; no alterations of the rock surfaces; no establishment of permanent fixed ropes or cables; and the encouragement of the use of equipment that better blends with the rock face will all contribute to minimizing impacts to naturalness and the WSAs. Although rock climbing activity will be noticeable while climbers are present on the rock faces, during inactive periods evidence of this activity would be substantially unnoticeable. (All Alts)

The closure and eventual rehabilitation of 19.3 miles (46.4 acres) of ways within the La Madre Mountains WSA north of La Madre Mountain and in Little Red Rock would halt deterioration of wilderness characteristics caused by expansion of these ways through casual use. Ways which were inventoried in 1979 as short intrusions into lands with wilderness characteristics now form an interconnected system of routes, none of which has been officially approved, which has caused significant and visual localized impacts to naturalness. (All Alternatives)

By proposing no new development in the WSAs and limiting facilities within the WSAs to existing hiking trails, re-routing sections of these trails to avoid sensitive riparian areas and plant populations, protection of inventoried wilderness characteristics would be ensured. (All Alternatives)