ENVIRONMENTAL ASSESSMENT
LIVESTOCK GRAZING AUTHORIZATION

EA Number: CA-650-2008-29

Last Chance Allotment

Bureau of Land Management
Ridgecrest Field Office
April, 2008

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CHAPTER 1: INTRODUCTION

A. Summary

The Bureau of Land Management (BLM) is proposing to issue a 10-year lease (#0406571) for the Last Chance Allotment (#05061) listed below to authorize livestock grazing in accordance with law and policy described in the Purpose and Need section below. Last Chance Allotment would remain as perennial base lease.

Allotment Information
Acres in the allotment: 35,532
Acres of public land: 34,332
Acres of non-BLM: 1,200
Kind of livestock: Cattle
Type of grazing: perennial
Season of Use: March 1 through February 28
Plan area: Northern and Eastern Mojave Desert Plan (NEMO)
Current authorized use: 1,632 AUMs
Percent Public Land billing rate = 100%
Acres of Threatened/Endangered Species Critical Habitat: None
Acres/Name of Wilderness: 11,648/Piper Mountain, 16,619/Sylvania Mountain
Identified for Voluntary Relinquishment: No

Within the context of the CDCA Plan as amended with the Northern and Eastern Mojave Desert Plan Amendment (NEMO), BLM is proposing specific lease terms and conditions to ensure that an appropriate multiple use balance is maintained on these allotments while providing for conservation in accordance with NEMO and the associated biological opinion. In addition, BLM may use its authority to close an area of the allotment to grazing use or take other measures to protect resources if needed. Therefore, issuance of a fully processed grazing lease with such applicable terms and conditions is necessary to manage the public's use, occupancy, and development of the public lands and prevent unnecessary or undue degradation of the lands. (43 USC 1732(b)).

B. Background

In 2005, the grazing lease for the Last Chance Allotment for grazing domestic cattle expired at the end of the 2005 grazing year (2/28/06). This grazing lease was renewed under the authority of Public Law 106-113. The duration of the grazing lease was for two years and contained the same terms and conditions as the expiring grazing lease. Public Law 106-113 required compliance with all applicable laws and regulations, which include the National Environmental Policy Act (NEPA) and the Endangered Species Act (ESA). Following the analysis of the environmental impacts these grazing leases maybe approved, canceled, suspended or modified, in whole or in part, to meet the requirements of such applicable laws and regulations.

C. Tiering to Existing Land Use Plan/EIS

This EA is tiered to the NEMO Final EIS of (January 2002) and provides site-specific analysis on the allotment level. Tiering helps focus this EA more sharply on the significant issues related to grazing on this allotment while relying on the NEMO analysis for background. Analysis of environmental issues previously considered and addressed in the NEMO plan will be incorporated

by reference. The site-specific issues analyzed for this allotment, as well as the issues that are incorporated by reference but will not be analyzed in detail, are identified in chapter 3 of this EA.

A summary of the analysis tiered in this EA is as follows:

1. NEMO is an amendment to the California Desert Conservation Area (CDCA) Plan developed expressly to address special status plant and animal species and to establish conservation strategies for those species within the multiple use context required for the CDCA by section 601 of the Federal Land Management and Policy Act (FLPMA). As part of the conservation strategy BLM determined which public lands will be available or unavailable for livestock grazing. Livestock grazing in the CDCA is an economic resource of public lands recognized in section 601 of FLPMA. In addition to designating lands available or unavailable for grazing, NEMO/NECO/WEMO established programmatic management prescriptions including regional land health standards and guidelines for grazing management; and utilization prescriptions for perennial species. This EA analyzes the specific application of the programmatic management prescriptions of NEMO and considers alternative means to achieve the purpose and need on these allotments as described in section C of this chapter.

2. This EA analyzes the range of alternatives for grazing consistent with NEMO, including a proposed action and continuation of current management (No Action). A no grazing alternative is considered to address voluntary relinquishment and subsequent designation of the allotment as unavailable for grazing. Chapter 2 of this EA describes the alternatives analyzed in detail and identifies the alternatives considered but dismissed from detailed consideration.

3. Impacts of livestock grazing were addressed at a regional level in NEMO. Analysis addressed the impacts of livestock grazing on a wide range of resource topics, including impacts to air quality, soil, vegetation, wildlife, cultural resources, wilderness, and socio-economic impacts. The regional analysis is incorporated by reference in this EA (pg 3-24 through 3-29 & 4-141, NEMO FEIS) but general discussion of these impacts will not be repeated. The EA analysis will sharply focus on the specific environmental issues associated with areas where livestock congregate on the allotment, specific areas of the allotment which are not meeting land health standards due to grazing, and areas of special status species or critical habitat that may be adversely affected by grazing on this allotment. Discussion of the specific topics analyzed in this EA, as well as other resource topics addressed regionally but that will be excluded from further analysis in the EA, is contained in chapter 3.

4. NEMO balances conservation with public use, occupancy, and development on a regional level. For example, Areas of Critical Environmental Concern/Desert Wildlife Management Areas (DWMA) are established, routes of travel on public lands designated open, limited or closed to motorized vehicles, and other management prescriptions are provided to guide multiple use management. Within the context of the CDCA Plan as amended by NEMO, BLM is proposing specific lease terms and conditions to ensure that an appropriate multiple use balance is maintained on these allotments while providing for conservation in accordance with NEMO and the associated biological opinion. In addition, BLM may use its authority to close an area of the allotment to grazing use or take other measures to protect resources if needed. Therefore, issuance of a fully processed grazing lease with such applicable terms and conditions is necessary to manage the public's use, occupancy, and development of the public lands and prevent unnecessary or undue degradation of the lands. (43 USC 1732(b)).

D. Purpose and Need for the Proposed Action

The purpose of the proposed action is to complete a site-specific evaluation of grazing which provides information to be analyzed by the BLM in conformance with implementing regulations for the NEPA (40 CFR Part 1500), FLPMA, BLM grazing regulations (43 CFR Part 4100), and Public Law 106-113 section 325 to determine whether to authorize grazing within this allotment and whether changes to current management are necessary.

The need for the proposed action is to authorize grazing for this public land grazing allotment in compliance with the prescriptions prescribed in the NEMO, dated July 2002, the Biological Opinion of the California Desert Conservation Area Plan, dated March 31, 2005, and the proposed Regional Rangeland Health Standards.

A second purpose of this EA is to analyze the construction and maintenance of a drift fence determined to be very important for the control of livestock from moving south, outside the approved grazing area.

E. Plan Conformance

All three alternatives analyzed under this EA are subject to the California Desert Conservation Area Plan (CDCA Plan) 1980 as Amended (August 1999). The proposed action and No Action Alternative have been determined to be in conformance with this plan as required by regulation (43 CFR §1610.5-3(a)). The Proposed Action and No Action Alternative would occur in areas identified for livestock grazing as indicated in the Livestock Grazing Element in the CDCA Plan 1980 (1999), pages 56 to 68. The proposed action and No Action Alternative are consistent with the land use decisions, and goals and objectives listed in the CDCA Plan. The proposed action is consistent with the CDCA Plan Amendment for the Northern and Eastern Mojave Plan (NEMO) as prescribed in section 2.0, (pages 2-29 through 2-39)

The Last Chance Allotment did not meet the Secretary of Interior Approved Rangeland Health Standards at one site, as table 1 below indicates:

Table 1. Rangeland Health Assessment for Last Chance Allotment

Rangeland Health Standard	**Meets Standard**	**Does Not Meet Standard**	**Impacts from Livestock Yes or No**	**Remarks**
Soil Permeability	X			
Riparian/Wetland		X	X	At Willow Springs. Not in proposed action grazing area

Stream Morphology	NA			None in grazing area
Native Species	X			.

Assessment determination completed 2008 for Last Chance Allotment.

Rangeland Health Fall Back Standards and Guidelines for Livestock Grazing remain in effect until CDD regional Standards and Guidelines are approved by Secretary.

F. Voluntary Relinquishment

NEMO does not identify this allotment for voluntarily relinquishment. A lessee may request voluntary relinquishment of their lease at any time. Because this allotment was not identified for voluntary relinquishment however, a plan amendment will be required for subsequent designation of the allotment as unavailable for livestock grazing. If BLM determines that an amendment is not warranted, the allotments will remain available for livestock grazing and BLM will consider new applications for a lease by qualified applicants.

G. Relationship to Statutes, Regulations and Plans

1. Wilderness Act (1964) and the California Desert Protection Act (1994). Section 4(d)(4)(2) of the Wilderness Act of 1964 states "the grazing of livestock, where established prior to the effective date of this Act, shall be permitted to continue subject to such reasonable regulations as are deemed necessary by the Secretary of Agriculture." This language reappears in Section 103(c) of the California Desert Protection Act of 1994 and is reaffirmed in BLM regulation (43 CFR Parts 6300 and 8560, Wilderness Management; Final Rule) and policy (BLM Manual 8560.37A.1.). The use was established if grazing was authorized by permit or lease at the time the area was designated as wilderness.

Congressional Grazing Guidelines (House Committee Report 96-1126 on the Colorado Wilderness Act, P.L.96-560, December 1980) further explain the intent of Congress regarding the grazing of livestock in wilderness. There will be no curtailments of grazing in wilderness areas simply because the area is designated wilderness. The numbers of livestock permitted to graze in wilderness should remain at approximately the same levels as at the time of wilderness designation. The maintenance of pre-existing supporting facilities is permissible. Where practical alternatives do not exist, such maintenance may be accomplished through use of motorized equipment. The construction of new facilities or replacement of deteriorated facilities in wilderness is also permissible in accordance with management guidance for the area. However, new construction should be primarily for the purpose of resource protection rather than to accommodate increased numbers of livestock.

BLM regulations regarding the administration of grazing in wilderness areas are contained in 43 CFR Parts 6300 and 8560 Wilderness Management; Final Rule (12/14/2000). Section 6304.25 of these rules state that a person may continue to graze livestock if she/he or their predecessors were exercising a BLM grazing permit or lease before Congress designated the area as wilderness. All grazing activities must comply with 43 CFR Part 4100 Grazing Administration rules (09/12/1983). Grazing support facilities existing prior to wilderness designation may be maintained or

reconstructed in accordance with management plans for the area. However, BLM will not authorize new support facilities for the purpose of increasing the number of livestock. The construction of new facilities must be solely "for the purpose of protection and improved management of wilderness resources." Similarly, BLM may authorize an increase in livestock numbers only if it can be demonstrated that "the additional use will not have an adverse impact on wilderness values."

Wilderness values and resources requiring protection are naturalness, untrammeledness, solitude, opportunities for primitive and unconfined recreation, and other features of cultural, geological, or ecological value, including native plant communities and wildlife populations or habitat. (Section 2(c) of the Wilderness Act)

2. State Historic Preservation Office Protocol Amendment for Renewal of Grazing Leases. In August 2004, and renewed in October 2007, the State Director, California Bureau of Land Management, and the California State Historic Preservation Officer (SHPO) addressed the issue of the National Historic Preservation Act (NHPA) Section 106 compliance procedures for processing grazing permit/lease renewals for livestock as defined in 43 CFR 4100.0-5. The State Director and the SHPO amended the 2004 State Protocol Agreement between California Bureau of Land Management and the SHPO with the 2004 Grazing Amendment, Supplemental Procedures for Livestock Grazing Permit/Lease Renewal.

This amendment allows for the renewal of existing grazing lease as long as the 2004 State Protocol direction, the BLM 8100 Series Manual Guidelines, and specific amendment direction for planning, inventory methodology, tribal and interested party consultation, evaluation, effect, treatment, and monitoring stipulations are followed.

The lessee would comply with any future standard protective measures that may be developed for the protection of cultural resources after the completion of further allotment inventory and determination of any additional protection measure needs for significant cultural resources.

3. Regional Rangeland Health Standards and Guidelines for Livestock Management. The Regional Standards for Public Land Health and Guidelines for Livestock Management were approved under the NEMO Plan, in July 2002. Implementation of the standards and guidelines cannot occur until the Secretary of the Interior approves them. Until that time, the nationally developed fallback standards and guidelines would continue as the basis for public land health assessments. These Regional Standards and Guidelines are listed in Appendix 4. Rangeland Health assessment studies would be conducted and a Determination made, prior to the renewal of the next grazing permit/lease.

CHAPTER 2

PROPOSED ACTION AND ALTERNATIVES

A. Proposed Action

This alternative was developed after a review of resource issues and conditions found on the Last Chance Allotment. Monitoring requirements, mitigation measures, and lease terms and conditions developed in the resolution of issues are being incorporated into this alternative to minimize potential impacts to resources while continuing to provide forage for livestock grazing.

The proposed action consists of authorizing cattle grazing on a portion of the Last Chance Allotment (Approximately 11,000), under a grazing lease, for a term of 10 years (See Appendix 1 – Allotment

Maps). In addition, the season of use and permitted use, as well as the management actions and stipulations stated below would be included in this grazing lease.

1. Livestock Numbers and Season of Use

Utilizing the same method for determining permitted use as was done for the 1980 Desert Plan for the entire allotment, it was calculated that 1,370 AUMs (1,950 AUMs calculated in Jan 2008) remain in the 10,921 (11,600 acres, calculated in Jan 2008) acres located within the northern one-third of the allotment proposed for grazing under this alternative. Originally, in the calculations used for the Desert Planning effort, these AUMs were then reduced by 76.3 percent to arrive at the permitted use for the allotment. These reductions included consideration for drought conditions, rangeland conditions, wildlife populations and watershed needs. The CDCA Plan classified the allotment as suitable for grazing any time during the year. Table 2 (below) reflects the year around suitability and the total AUMs allowed for the allotment. The actual season of use would be limited to 90 days (or 60 days during the spring) as noted in the Livestock Management & Grazing Prescriptions section below. The numbers of cattle allowed would be flexible based upon the length of the actual grazing season and the maximum allowable AUMs.

Table 2. Livestock Numbers and Season of Use

Allotment / Number	Livestock Number	Kind	Class	From	To	AUMs
Last Chance/ #05061	33	Cattle	Cow/calf	March 1*	February 28 *	396

The actual season of use would be limited as noted in section 2 below

2. Livestock Management & Grazing Prescriptions

Livestock grazing management would minimize the number of water locations available to livestock, and rotate the water availability, coupled with active herding, to improve livestock distribution. (Also, when opportunity provides, reduce the season of use while maintaining or reducing the permitted use, to encourage better distribution and increased rest periods between grazing treatments.) The season of grazing use would vary according to whether or not the permittee chooses to use the available AUMs during the spring growing season (3/1 – 5/31). Grazing that overlaps the spring growing season would be limited to 60 days while a 90 day grazing season would be allowed if the permittee chose to graze totally outside the spring growing season. The spring growing season would not be grazed two consecutive years.

a. Utilization levels (based on current year's growth by weight, as measured during the grazing season.) on all key forage plant species identified on the allotment and/or listed in Appendix 2, would be maintained. Where forage utilization levels reach or exceed these identified thresholds, the livestock mould be removed from that area or portion of the allotment and not allowed to return for the remainder of the grazing season.

b. All mineral supplements would be placed at least ¼ mile from natural water sources. These mineral blocks would be placed in previous disturbed areas, along roads and trails.

c. Actual Use Reports would be submitted by the lessee within 15 days after completing grazing. These reports would include the number of animals and date.

d. All grazing would be subject to upper threshold limits to the level of use on key forage species (see Appendix 3, Proper Use Factors). When monitoring indicates the level of use on listed key forage species has been reached, the livestock would be removed for that area, pasture or allotment. The livestock must be moved to a point in which grazing would not continue in those areas reaching utilization limits.

4. Range Improvements

There are 13 existing range improvements on the Last Chance Allotment of which six are within the proposed grazing area (See map in appendix 1). These range improvements include 1 spring, 1 shared fence, 2 cattle guards, 1 shared pipeline, 1 corral and 5 water troughs. These range improvements support livestock management practices on the allotment and are routinely maintained to ensure properly functioning condition. See Chapter 3, Livestock Grazing, Affected Environment, and the Range Improvements section for a description of the maintenance actions.

All structural improvements would be maintained in proper functioning condition. All major repairs and modifications must be approved by BLM prior to initiating the work. Any maintenance to any range development located in wilderness involving use of motorized/mechanized tools or equipment or any other use normally prohibited under Section 4 (c) of the Wilderness Act to accomplish the work would require an additional site-specific environmental assessment and prior written approval from BLM.

The removal of any range development located in wilderness involving use of motorized/mechanized tools or equipment or any other use normally prohibited under Section 4(c) of the Wilderness Act to accomplish the work would require an additional site-specific environmental assessment and prior written approval from BLM.

Proposed Eureka Valley Road Drift Fence:

The primary purpose of the proposed new fence is to facilitate the use of the northern portion of the allotment as a manageable grazing area and prevent the drift of cattle southeast along the Eureka Valley Road corridor. The construction of this fence is an important component of the proposed action. Livestock drift to the south, outside the approved grazing area would be a continuing management problem. Therefore BLM is analyzing the construction and continuing maintenance of the fence within the content of this EA and will not complete any additional environmental assessment prior to the actual construction of the project.

The fence will start at the cattleguard on the boundary between South Oasis and Last Chance allotments and run for approximately two miles southeast along the right-of-way on the northeast side of Eureka Valley Road. At the mouth of Willow Wash the fence will run perpendicular to the road into the wilderness for about a third to half a mile and tie off in the hills north of the wash (see Appendix 1 for Range Improvement Map).

The fence will be a 4-strand (3 barbed, 1 smooth bottom wire) fence, 42” high with the following spacing between wires from the ground up: 16”, 8”, 6”, & 12”. The 12” distance between the top two wires is to prevent a deer’s foot from becoming entangled. The smooth bottom wire allows smaller animals to crawl underneath without becoming snagged. Steel T-posts will be spaced at 22 foot intervals and the wire attached with clips. Steel stays will be placed to reinforce the fence.

Wooden posts will be installed as H-braces. Two wire gates will be installed to provide access for contingencies. One gate will be at the northern end at the cattleguard and the other at the southern end where the fence turns east into the wilderness. Construction in the wilderness area will be accomplished with hand tools and without the use of motorized or mechanized equipment. Disturbance from construction will be limited to five feet on either side of the fence line.

The following environmental protection measures will be followed:

a. The fence line along the road will be within the 100' right of way between the center of the road and the wilderness boundary.

b. In the event that cultural or pale-ontological artifacts are discovered operations in the vicinity of the resources will cease immediately and the BLM archaeologist will be notified. The BLM will evaluate the significance of the site and determine the need for mitigation.

c. No blading of the fence line is permitted.

d. Garbage will be kept in closed containers to discourage scavengers. The debris of construction will be removed from the construction site daily.

e. Post holes should not be left open over night or for the weekend.

f. Water gaps should be designed to allow debris to pass through without taking out large segments of the fence.

g. Maintenance of the fence will be carried out by the permittee. Maintenance in the wilderness area will be accomplished with hand tools and without the use of motorized or mechanized equipment.

5. Monitoring

The rangeland monitoring in this allotment would continue as described in the Chapter 3, Affected Environment, under Livestock Grazing. The focus of studies would be to monitor short term issues including utilization studies, and long term changes with trend studies. The utilization studies would also be important to verify the estimated carrying capacity of the proposed grazing area. Rangeland Health Assessments would also continue to assess compliance with standards.

The use of short term monitoring is a tool to gauge the cause and effect of the current authorization. This type of monitoring consists of actual use, current climatic conditions and the collection of utilization data. This type of data would be collected on a yearly basis at minimum. The collection of utilization data should be triggered by the growing season of key species and correlate with the phenology of key species. Interim utilization studies will be conducted at least twice during the grazing season so as to insure that utilization levels are not exceeded. Final utilization studies will be conducted between two weeks from the end of the grazing period to prior to the on-set of new spring growth the following year.

The collection of long term monitoring data typically occurs every ten years. Trend data, is used to determine long term changes and effects of long term grazing strategies. Trend data would continue to be collected using the current quadrat frequency and line intercept techniques.

6. Regional Rangeland Health Standards

The collection of rangeland health information is a qualitative method that requires the formation of an interdisciplinary team that makes observations of various indicators to determine the health of rangelands and the achievement of regional standards of rangeland health. This process is also long term, and typically occurs every ten years.

The Northern and Eastern Mojave Plan (NEMO) amendment to the CDCA Plan included regional Standards & Guidelines. Once the Secretary of the Interior approves the standards, they will be incorporated into the grazing leases and management practices without further notice. Until such time, the National Fallback Standards and Guidelines will be followed. Rangeland health assessments will be conducted and a Determination made, prior to the renewal of the next grazing lease. See Appendix 3 for regional standards and guidelines.

B. NO ACTION ALTERNATIVE

This alternative consists of maintaining current allotment boundaries and management practices.

1. Livestock Numbers and Season of Use

Table 3. Livestock Numbers and Season of Use

Allotment/ Number	Livestock Number	Livestock Kind	Season of Use	AUMs
Last Chance/ #05061	136	Cattle	March 1 through February 28	1,632

2. Livestock Management

Livestock management would continue as described in the Affected Environment section of this document. Cattle would continue to be managed under a continuous, yearlong grazing season.

3. Range Improvements

There are 13 range improvements on the Last Chance Allotment. These range improvements include, 2 fences, 2 cattle guards, 3 pipelines, 3 springs, 1 corral and 7 water troughs. These range improvements support livestock management practices on the allotment and are routinely maintained to ensure properly functioning condition. No new improvements would be recommended under this alternative. See Chapter 3, Livestock Management, Affected Environment for further information concerning these existing range improvements.

4. Monitoring

Same as for the Proposed Action

5. Fallback Rangeland Health Standards and Guidelines

The Fall Back Standards would be used. See Appendix 4, Part II.

C. NO GRAZING ALTERNATIVE

This alternative would not renew the leases on the Last Chance Allotment. As a result, grazing would not continue in this area. This would be a permanent change. The BLM would initiate a process in accordance with the 4100 regulations to permanently eliminate grazing on the allotment.

CHAPTER 3: ENVIRONMENTAL ANALYSIS

A. Livestock Grazing

1. Affected Environment

General:

The allotment is located in Inyo County, California. Elevation range is between 5,084 feet and 7,478 feet. Five major plant communities have been identified in the allotments using Robert F. Holland's classification system (1986): Great Basin Mixed Scrub Community; Creosote Bush Scrub; Desert Greasewood Scrub; Saltbush Scrub; and Joshua Tree Woodland. The topography consists of gently sloping flats in the north at the south end of Fish Lake Valley that lead up to the rugged, dry Sylvania Mountains. The Sylvania Mountains occupy about two-thirds of the allotment. The eastern boundary of the allotment is the state line, between California and Nevada. Death Valley National Park borders the allotment to the south. The South Oasis Allotment borders to the west and the Oasis Ranch Allotment borders to the north.

The forage plants on the allotment are *Graya spinosa* (Hopsage), *Ephedra nevadensis* (Mormon Tea), *Lepedium Fremontii* (Desert Alyssum), *Menodora spinescens, Artemsia spinescens* (Budsage), *Oryzopsis hymenoides* (Indian ricegrass), and *Sitanion hystrix* (Bottlebrush or Squirreltail).

Table 4. Livestock Use Levels over the Past Ten Years (AUMs)

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Actual Use	0	0	0	0	0	0	0	0	0	0

Background & Livestock Management:

The Last Chance allotment originally encompassed approximately 104,450 acres of public land and carried 3,267 AUMs permitted use. This allotment was grazed continuously, yearlong, and simultaneously with the adjacent allotment in Nevada, Magruder Mountain allotment. These two allotments share a common unfenced boundary stretching over ten miles through very rugged country. Cattle would spread out over the two allotments and the lessee would place bulls at most of the watering locations, As the cows would come in for water, they would be serviced by the bulls which resulting in calves being born throughout the year. When the lessee needed to sell livestock, he would gather whatever animals were at a water site, remove the weanlings and turn the mother cows back out. With the passage of the Desert Protection Act of 1994, Death Valley National Park acquired approximately 67,000 acres within the southern end of the allotment. Shortly there after, the National Park Service canceled grazing within their administered lands, leaving approximately 36,000 acres of BLM administered lands and approximately 1,200 acres non-BLM lands left to be grazed in the allotment. In 1997, after several years of being in conflict with the Nevada BLM, Tonopah Field Office, Magruder Mountain Allotment was closed and livestock grazing terminated. This termination on Magruder Mountain Allotment made it impossible to graze the Last Chance Allotment without a significant number of cattle drifting onto the Magruder Mountain Allotment.

On May 1, 1997, BLM issued the lessee a decision suspending grazing until issues were resolved on the Magruder Mountain Allotment and livestock grazing could resume.

In 2007, a new lessee on the Magruder Mountain Allotment notified Ridgecrest BLM that they had just acquired control of the base property and requested use of the attached grazing privileges for the Last Chance allotment. As it turned out, Tonopah BLM opened a portion of the Magruder Mountain Allotment for grazing and has issued a lease for grazing on the northern end of their allotment. This portion of the Magruder Mountain Allotment matches up with the northern portion of the Last Chance Allotment and gives an opportunity to allow grazing to occur without the chance of unauthorized drift onto the adjacent closed portion of the Magruder Mountain Allotment (see Allotment Map in Appendix 1). However, if current management practices were applied with the new lessee cattle would be grazed on a year long lease throughout the entire allotment (from Cucomungo Canyon north) and drift of cattle onto Death Valley National Park (the area south of Cucomungo Canyon) would become a pertinent issue. Futhermore, the Willow Spring water development would have to be rehabilitated to maintain proper functioning condition.

Monitoring:

The allotment has been inactive since 1997 and, therefore, utilization and monitoring assessments have not been done.

Rangeland Health Assessments were conducted in 1999 and all upland sites were revisited in 2007. The assessments found that the riparian area at Willow Spring did not meet standards. Willow Springs is inside the original allotment boundary, but outside the proposed grazing area.

Range Improvements:

There are 13 existing range improvements on the Last Chance Allotment of which six are within the proposed grazing area. These range improvements include 1 spring, 1 shared fence, 2 cattle guards, 1 shared pipeline, 1 corral and a 7 water troughs. These range improvements support livestock management practices on the allotment and would need to be routinely maintained to ensure properly functioning condition. Outside of wilderness, these maintenance actions would include:

a. Water pipeline repairs- digging/trenching along pipeline route to locate and repair leaks in existing pipelines. Up to two pickup trucks may be used to transport labor and equipment along these pipelines to accomplish this work. Specialized equipment could include a walk-behind trencher or tractor w/ backhoe.

b. Fence repairs - Although much of the minor repairs to fences can be done by foot or horseback, major repairs to fence lines may require vehicle access along fence line corridor, or follow historic tracks which were made during original construction. Up to two pickup trucks could be used to support maintenance and repairs by transporting labor, materials, and equipment.

c. Corral repairs – The replacement of posts by digging up to 12 inch wide holes, up to three feet deep by use of hand-held auger, or augur on the back of a skip loader or tractor. Replacement of corral panels as well as repairs to the water trough and associated pipeline through digging and/or trenching to find leaks and replace pipelines could occur.

There would be no use of motor vehicles or motorized or mechanized equipment inside wilderness without prior written approval and an additional site-specific Environmental Assessment.

Table 6: Existing Range Improvements:

Project Name and Number	Within Wilderness Yes/No	Functioning Yes/No
*** Projects in Proposed Grazing Area**		
Kincade Spring Development, 5065	Yes	No
Fish Lake Valley Well & Pipeline, 5365	Yes	Partially
Fish Lake Valley Fence, 5497	Yes	Yes
State Line Corral, 5613	No	No
Eureka Valley Rd. Cattleguard, 5641	No	Yes
Sylvania Canyon Rd. Cattleguard, 5650	No	Yes
*** Proposed Project in the Proposed Grazing Area**		
Eureka Valley Road Fence, 5462	Partially	To be built
*** Projects outside Proposed Grazing Area and scheduled to be eliminated.**		
Willow Spring Development, 5062	Yes	No
Hidden Canyon Spring, 5074	Yes	No
Hidden Canyon Pipeline & Trough, 5366	Yes	No
Willow Spring Pipeline, 5379	Yes	No
Cucomungo Fence, 5511-1, 2, & 4	Yes	Yes

Environmental Consequences

a. Impacts of the Proposed Action

Under this alternative, livestock grazing would be confined to the northern portion of the allotment and a fence would be built mostly outside wilderness along Eureka Valley Road. A winter grazing schedule would be instituted and the size of the cattle herd would be reduced commensurate with the size of the grazing area and number of AUMs. This would be a more efficient use of the allotment and, overall, would put less stress on the resources throughout the allotment.

b. Impacts of No Action

Under this alternative, livestock grazing would continue to occur along the southern portion within Cucamonga Canyon. Since there is no fence separating the allotment from Death Valley National Park or the closed portion of the Magruder Mountain Allotment, livestock drift would be a large issue.

c. Impacts of No Grazing

The cancellation of grazing on this allotment would result in the lessee losing a significant portion of their potential annual income.

B. AIR and CLIMATE

AIR QUALITY

1. Affected Environment

Air pollutants occur as gaseous and particulate mater that is emitted into the air. Air pollutants are very fleeting in the desert due to the constant air movement. Moving air constantly disperses air pollutants from their source and dilutes them. In addition, the interaction between pollutants, affects of moisture and sunshine generally modify most pollutants over time. Some form particulates and fall as dry deposition others fall with the rain. The air pollutants don't remain in the area of the source and accumulate over time (ARB 2001a and 2003a, Calkins 1994, DeSalveo 2003, Ono 2000, Paxton 1993, SCAQMD 1993b and USDI BLM 1999a, 2001 and 2006a).

The allotment falls within the Great Basins Valleys Air Basin. The management/enforcement of the air quality standards falls on several different jurisdictions. The USEPA (United States Environmental Protection Agency) has the primary responsibilities under the Federal Clean Air Act. The USEPA had transferred a number of responsibilities to the states and in most cases, regional air quality management districts. The regional Great Basin Unified Air Pollution Control District (GBUAPCD) has jurisdiction over point and area sources in the allotment. Air quality throughout the allotment area is generally good. There are, however, times that portions of the area have not meet state air quality standards for PM_{10} due to locally generated and/or transported in pollutants.

2. Environmental Consequences:

a. Impacts of the Proposed Action**:**

Emissions of pollutants as a result of the proposed action would be from cattle movements the movement of vehicles used for cattle management and construction and maintenance of range improvements. Grazing related PM_{10} emission levels are not considered significant in the region. No significant offsite impacts are anticipated. These overall emissions would be very small and are clearly deminimus. No conformity analysis or determination is necessary because there is no federal nonattainment area.

b. Impacts of No Action Alternative

Impacts to air quality as a result of the No Action Alternative would be the same as the Proposed Action.

c. Impacts of No Grazing

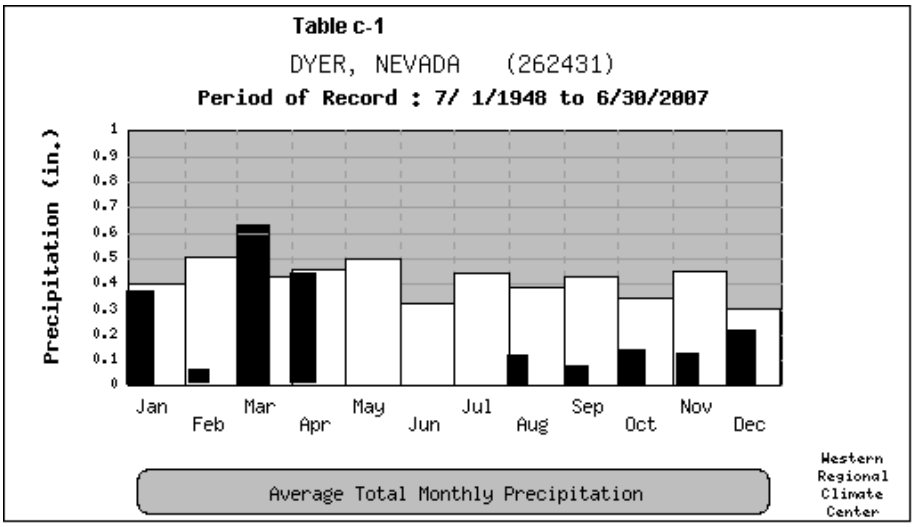
No impacts to air would occur as a result of grazing activities.

CLIMATE

Affected Environment

The Last Chance Allotment lies above 5000 feet elevation at the western edge of the Great Basin. The White Mountains form the western edge of the area and effectively block many of the climatic

influences from the west. As a result, the climate in the area is highly influenced by the Great Basin regions to the north and east. The climate for the area is best characterized as a cold desert. The various sites within the allotment have their own microclimates. Factors such as slope, aspect, and elevation can cause local variations in site specific winds, temperatures and rainfall. These local variations are to the regional climate with its familiar cycles of rainfall, snowfall, draughts and extreme temperatures. There is a NOAA weather station located in Dyer, Nevada, sixteen miles north of the allotment. It has records dating back to 1948 which are applicable to the Last Chance Allotment. According to the records, every month of the year except August has recorded below freezing temperatures. In addition, the records indicate that low temperatures below 0 degrees F have been recorded 5 months of the year, November through March. Temperatures below –10 degrees F have occurred in November, December, January and February. The lowest temperature recorded was –23 degrees F recorded in February 1989. The mean temperature for the area is 51.7 degrees and the highest temperature recorded is 107 degrees F. The mean precipitation for the station is 5 inches. The precipitation has ranged between 8.48 and 1.78 with a standard deviation of 1.9 inches. The data shows that the precipitation is nearly equally distributed throughout each month of the year. In 2007, there has been little rainfall since April resulting in the current draught (see table c-1).



White represents long term mean precipitation

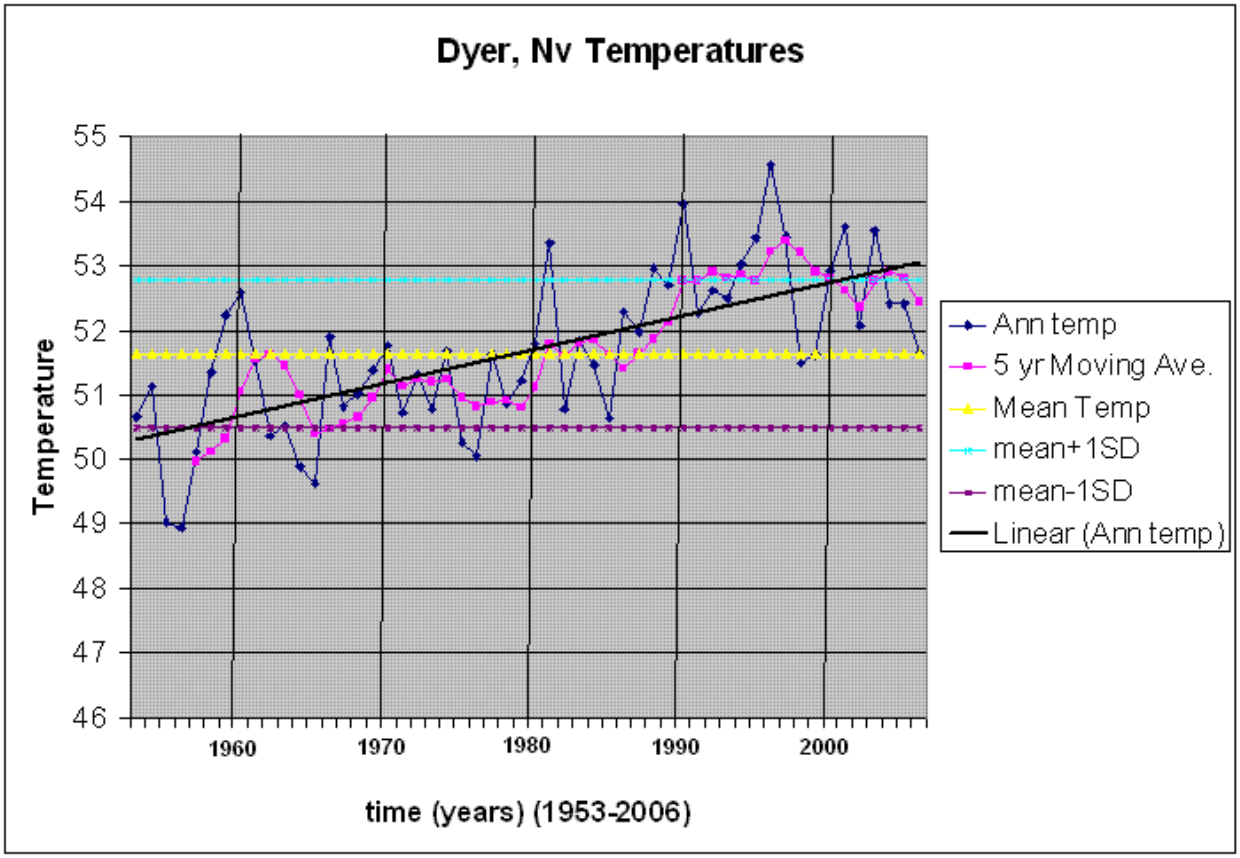
Black represents precipitation for 2007

Ongoing scientific research has identified the potential effects of so-called "greenhouse gas" (GHG) emissions (including carbon dioxide, CO2; methane; nitrous oxide; water vapor; and several trace gasses) on global climate. Through complex interactions on a regional and global scale, these GHG emissions cause a net warming effect of the atmosphere, making surface temperatures suitable for life on earth, primarily by decreasing the amount of heat energy radiated by the earth back into space. Although GHG levels have varied for millennia, with corresponding variations in climatic conditions, recent industrialization and burning of fossil carbon sources have caused CO2 concentrations to increase dramatically, and are likely to contribute to overall climatic changes, typically referred to as global warming. Increasing CO2 concentrations also lead to preferential fertilization and growth of specific plant species.

The assessment of GHG emissions and climate change is in its formative phase, and it is not yet possible to know with confidence the net impact to climate. Observed climatic changes may be caused by GHG emissions, or may reflect natural fluctuations (U.S. GAO 2007). We know that in the past the earth has gone through a number of ice ages with periods of warming and droughts between the periods. The most recent Ice Age ended around 13,000 years ago and the climate has warmed and dried since then. The warming and drying has not been continuous. As recently as 2500 years ago, the Owens river flowed into Searles Lake even though it had ceased for some time. Around 900 AD a 200 year drought nearly dried up Mono Lake (called the Medieval Oscillation). The Intergovernmental Panel on Climate Change (IPCC, 2007) recently concluded that "Warming of the climate system is unequivocal" and "Most of the observed increase in globally average temperatures since the mid-20th century is very likely due to the observed increase in anthropogenic [man-made] greenhouse gas concentrations."

Global mean surface temperatures have increased nearly 1.0°C (1.8°F) from 1890 to 2006 (Goddard Institute for Space Studies, 2007). However, both observations and predictive models indicate that average temperature changes are likely to be greater in the Northern Hemisphere. The data indicated that northern latitudes (above 24° N) have exhibited temperature increases of nearly 1.2°C (2.1°F) since 1900, with nearly a 1.0°C (1.8°F) increase since 1970 alone. Without additional meteorological monitoring systems, it is difficult to determine the spatial and temporal variability and change of climatic conditions, but increasing concentrations of GHG are likely to accelerate the rate of climate change. In 2001, the IPCC indicated that by the year 2100, global average surface temperatures will rise 1.4 to 5.8°C (2.5 to 10.4°F) above 1990 levels. The National Academy of Sciences (2006) has confirmed these findings, but also indicated there are uncertainties how climate change will affect different regions. Computer model predictions indicate that increases in temperature will not be equally distributed, but are likely to be accentuated at higher latitudes. Warming during the winter months is expected to be higher than during the summer.

An analysis of the Dyer, NV temperature data from 1954 (first year with complete data) to 2006 shows that the mean temperature has risen approximately 2 degrees F during that period of time (table c-2). A check of surrounding stations noted a similar trend. The significance is unknown, although the change matches the increases noted in the literature. Analyses of precipitation data for the same period of time indicates that the precipitation has stayed relatively the same.



2. Environmental Consequences

a. Impacts of Proposed Action

The U.S. Department of Interior (2001) issued orders to include global climate change in connection with planning efforts. It is questionable whether permit renewals fall within the order, but the point is moot as noted by the General Accounting Office (GAO) (2007). The GAO, in their report, noted that there has been no guidance issued as to how to implement the order. They also note that there is insufficient site specific information to allow managers to plan for climate change. It is generally accepted that there has been an increase in the rate of temperature increase and the likely cause is an increase in (GHG) especially carbon dioxide (CO_2). Livestock consumes vegetation and give off CO_2 and other GHG. The natural decomposition of vegetation also produces similar GHGs. The volume of GHG produced by cattle in the Last Chance Allotment beyond background natural emissions is likely very small and the proposed cattle grazing will have little influence on the Global Climate. The use of vehicles to manage cattle and maintain and construct range improvements will produce very small amounts of GHG. The effect of climate change on other resources is addressed in the resource specific sections

b. Impacts of No Action Alternative

Similar to the Proposed Action

c. Impacts of No Grazing Alternative:

There would be no impact to climate from livestock grazing in the Last Chance Allotment.

C. BIOLOGICAL SOIL CRUSTS

The open space between higher plants is not generally bare of all life. Highly specialized organisms can make up a surface community consisting of cyanobacteria, green algae, lichens, mosses, microfungi and other bacteria. Soils with these crusts are often referred to as cryptogamic soils (USDI BLM 2001 and Belnap and Lange 2003). According to Belnap and Lange (2003), the Great Basin is a cold desert where low winter temperatures result in frequent soil freezing and the crusts generally have a rolling morphology. The Great Basin soil crusts differ from other desert regions in that the crusts are heavily dominated by lichens and mosses. Belnap and Lange (2003) identifies over 125 species of cyanobacteria, green algae, lichen, mosses and liverworsts that are common in the Great Basin soils.

Biological soil crusts were found to occur over all of the allotment. Sampling conducted as part of rangeland health assessments found complex biological crusts that were intact and met standards at all upland health assessment sites. The health assessments document the widespread occurrence of complex soil crust communities consisting of mosses, lichens, green algae and cyanobacteria. The crusts range from less complex crusts along the valley floor associated with very fine textured soils to very complex crusts on the fans with their coarse soils. Range health assessments were conducted over a number of allotments in the Fish Lake Valley where observations were made on biological soil crusts. There did not appear to be any negative changes to the crust community as a result of climate change. The 1999 and 2007 health assessments found complex well developed crusts (US BLM 2007). Many of the biological crust species are not mobile and cannot survive burial. These species are easily damaged by livestock grazing (Belnap and Lange 2003, and USDI BLM 2001b). The wide spread occurrence of these sensitive crust species indicates that the sites are in good condition.

2. Environmental Consequences

a. Impacts of Proposed Action

The current biological crust community consists of diverse species and is in good condition. This allotment has been grazed for over one-hundred years. The soil crusts don't show significant adverse effects from the past grazing use. Similar grazed sites in adjacent allotments have similar condition crusts. The expected impacts would be similar to those observed in adjacent grazed sites. Based on current observations, this would continue to result in satisfactory biological crust communities.

c. Impacts of No Action Alternative

Similar to Proposed Action

d. Impacts of No Grazing Alternative:

There would be no impact to crusts from cattle grazing. This would not likely to result in any changes to the crust community as it is already intact and contains multiple species.

D. CULTURAL RESOURCES

1. Affected Environment

This allotment extends from the southern end of Fish Lake Valley south across the Sylvania Mountains to the northeastern sector of Eureka Valley. Three cultural resource studies has been completed within the public land parcels associated with this allotment. A total of 152 acres (less then 1%) of the allotment's public lands have been surveyed for cultural resources.

A total of seven prehistoric archeological sites have been recorded within the Allotment. Most of these sites are sparse density, lithic scatters of predominately silicate tools and debitage, and were recorded during the late 1970s for the California Desert Plan. None of these seven sites have yet been formally evaluated for eligibility for the National Register of Historic Placers (NRHP).

When they were recorded, the site forms for all of these sites, except for one, did not contain any statements under the *Current Condition* sections that disturbances being caused by livestock grazing were observed. The probability of any such disturbances occurring to these six sites since they were recorded is considered to be low. However, when site CA-INY-2028 was recorded in 1979 it was noted that the site was being effected by "cattle activity heavy".

2. Environmental Consequences

a. Impacts of Proposed Action Alternative

Under the proposed action, there would be no change to cultural resource management components of the California Desert Conservation Area Plan, as amended. Cattle grazing would continue at current levels pursuant to planning and management prescriptions. Proposed range improvements and changes in approved management plans would be reviewed pursuant to Section 106 of the National Historic Preservation Act as implemented in the *State Protocol Agreement between the California State Director of the Bureau of Land Management and the California State Historic Preservation Officer Regarding the Manner in which the Bureau of Land Management will meet Its Responsibilities under the National Historic Preservation Act,* October 2004, (hereinafter referred to as the *Protocol*) and the Supplemental Procedures for Livestock Grazing Permit/Lease Renewals, August 2004, (hereinafter referred to as the *Supplement*).

The proposed alternative would continue livestock grazing in accordance with current management plans. The threats to cultural properties would continue, but would not change significantly from current levels. Under the proposed action, an existing spring improvement in the southeast sector of the allotment would be deactivated, thus removing a natural attractant for livestock, and prevent further effects from occurring to the archeological site CA-INY-2028. Livestock grazing would be limited in the vicinity of the other historic properties that have been identified within the allotment until an assessment of effects can be completed in accordance with procedures outlined in the *Supplement*.

Under the proposed action alternative BLM would continue to implement the procedures outlined in the *Supplement* to identify historic properties that may be affected by livestock grazing. Where conflicts between livestock grazing and significant cultural properties are identified, BLM would implement the appropriate Standard Protective Measures specified in the *Supplement*, or in cases where conflicts cannot be resolved, the BLM would consult with the California State Historic

Preservation Officer pursuant to Section 106 of the National Historic Preservation Act and the *Protocol*.

The construction of a new drift fence along Eureka Valley Road, on the western side of the Allotment, is being proposed as part of the Proposed Action Alternative. The fence will start at the cattle-guard on the boundary between the South Oasis and Last Chance Allotments, in the northwest corner of the latter, and extend for approximately two miles southeast within the designated right-of-way on the east side of Eureka Valley Road. At the mouth of Willow Wash the fence will turn perpendicular to the Road, and traverse for about a third of a mile into the hillside north of the wash where it will terminate. The fence will be constructed with four wire-strands hung on 42 inch high steel T-posts, which will be spaced at 22 foot intervals.

The proposed alignment for this fence has been inspected for significant cultural resources by BLM heritage professionals. At intermittent points along the alignment, about a dozen isolated historic metal cans and prehistoric lithic flakes were encountered. However, given their intermittent occurrence and isolated context, they are not considered as significant. Thus, there will be no effects to significant heritage resources if this fence line should be constructed.

The Permittee would also be required by term of the grazing permit to perform normal maintenance on all range improvements located within the Allotment, including occasional repair of fences and water pipelines. This normal maintenance, whether it would be walking along the fencelines using hand tools to repair broken wire strands, replacement of individual post and side boards at corrals; or replacing broken water pipe sections, on an as needed when needed basis; is allowed without the need for further heritage compliance review by one of the Exemptions clauses contained in the Protocol's Appendix D: Activity A-34-"Modification of existing fences, gates, grills or screens".

b. Impacts of the No Action Alternative

Grazing has occurred in the California Desert since the mid-19th Century. Our knowledge and understanding about the effects of livestock grazing on cultural properties is limited for the California Desert, but studies of grazing impacts have been reported for other areas in California and the Great Basin region. The primary threats from grazing behavior would be damage to artifacts and site integrity resulting from the breakage, chipping, and displacement of artifacts, which might compromise the context and information potential of a historic property. Grazing threats to cultural properties would be greatest in areas where cattle congregate around springs, watercourses, shade and salt licks.

The analysis and threats to cultural properties would be the same as the Proposed Action alternative. Under the No Action alternative, there would be no change to cultural resource management components of the California Desert Conservation Area Plan as amended. Cattle grazing would continue at current levels pursuant to planning and management prescriptions. Proposed range improvements and changes in approved management plans would be reviewed pursuant to Section 106 of the National Historic Preservation Act as implemented in the *Protocol* and the *Supplement*. Under the no action alternative , livestock grazing would be limited in the vicinity of historic properties, such as CA-INY-2028, that has been identified as being effected by livestock, until an assessment of effects can be completed in accordance with procedures outlined in the *Supplement*.

Under the no action alternative BLM would continue to implement the procedures outlined in the *Supplement* to identify historic properties that may be affected by livestock grazing. Where conflicts between livestock grazing and significant cultural properties are identified, BLM would implement

the appropriate Standard Protective Measures specified in the *Supplement*, or in cases where conflicts cannot be resolved, the BLM would consult with the California State Historic Preservation Officer pursuant to Section 106 of the National Historic Preservation Act and the *Protocol*.

c. Impacts of the No Grazing Alternative

Implementation of this alternative would eliminate the threats from grazing to the seven known and recorded sites located within the boundaries of the allotments.

E. ENVIRONMENTAL JUSTICE

1. Affected Environment

The grazing allotment being analyzed is located in rural Inyo County. The rural areas of this counties are typically occupied by moderate to low-income households. The lessee that hold the grazing lease for the allotment being analyzed typically have moderate incomes. Seasonal laborers that may be hired by the lessees generally come from low-income households.

2. Environmental Consequences

a. Impacts of Proposed Action and No Action Alternative

The implementation of the proposed action would have an affect but not a disproportionate affect on low-income or minority populations living on or near the allotment being analyzed.

The grazing of livestock in rural Inyo County has been a common practice for over 100 years. Typically, ranching has been performed by persons of low to moderate income, and may or may not be considered a minority. There are no Native American communities on or near any of the allotments being analyzed

b. Impacts of No Grazing Alternative

Under the no grazing alternative there would be an affect but not a disproportionate affect with respect to low-income or minority populations. The loss of livestock grazing in rural Mono and Inyo counties could result in the loss of seasonal employment to a very small component of low-income or minority populations.

F. FARMLANDS, PRIME OR UNIQUE

1. Affected Environment

The proposed action and the alternatives would have no affect on unique or prime farmlands because there are no lands so designated in the allotment.

G. FLOOD PLAINS

1. Affected Environment

Flood plains are associated with all of the main drainages in the allotment. Alluvial fans occur at the mouth of nearly all drainages. Most of the flood events are associated with summer thunderstorm

events. These large events tend to be localized events which may drop over 4 inches of rain in a short time. The very large events may have a return interval of 25-50 years. These large events are a result of high intensity storms and are little affected by cultural practices in the watershed. Large flow events have occurred in the last ten years in the Sylvania Canyon and the Palmetto Wash in the north portion of the allotment. The event in Sylvania Canyon washed out most of the road in the canyon. The Event in Palmetto Wash deposited sediments across a several mile wide area at the north end of the allotment that are clearly visible on the ground and from aerial photographs. Similar high flow events have occurred in the Willow Wash-Cucomungo Canyon in recent years.

2. Environmental Consequences

a. Impacts of Proposed Action:

The proposed action could result in some impacts in flood plains. The construction of fences likely would cross flood plains and they would be susceptible to damages from floods, but would not likely to influence future flood events. The loss of existing and future structural range improvements in flood plains would continue at irregular intervals in the future. Such damage would be limited and could be repaired by normal maintenance activities. Flood events where the flows exceed bank full flows and move onto the floodplain generally occur as a result of large summer thunderstorms where the cultural practices such as grazing have little influence on flood size.

b. Impacts of No Action:

Similar to the proposed action.

c. Impacts of No Grazing

Similar to the proposed action.

H. INVASIVE, NON-NATIVE SPECIES

1. Affected Environment

Peter Rowlands et al. (1982) in Brooks (1998) notes that alien species comprise a relatively small portion of the flora in the deserts. They indicate that there approximately 1836 species of vascular plants in the California portion of the desert of which 156 (9%) are alien to the region. This compares to the global average of 16% alien plants (Rowlands et al. 1982). Rangeland health evaluations completed in the Last Chance Allotment identified 4 species of non-native/invasive species in the area. Species identified include downy brome (cheat grass) (*Bromus tectorum*) and Russian thistle (*Salsola tragus*). The non-native species can be classified into three general groups.

The first group is invasive, non-native plants which are common across the landscape. Species in this group are common across the desert and many are common in surrounding bioregions as well. In this allotment, these species occurred at 2 of 3 sites and combined, they constituted less than 1 % of the total cover. Downy brome (cheat grass) was the only species in this group observed during the health evaluations. None of the species in this group are classified as noxious weeds.

The second group of invasive, non-native species are also common in the desert, but are generally more restricted in the habitats they occupy. Normally this group is limited to road sides, some

washes and other highly modified sites where there is little competition from other plants and water concentrates to provide late season soil moisture. Adequate soil moisture in the late spring and summer is important for these species. The Great Basin climate in the Fish Lake Valley typically has moisture distributed through the year. The Esmeralda County Soil Survey (NRCS 1998) notes that summer thunder storms can result is 10 to 20 days of soil moisture between July and October. When this happens, Russian thistle becomes common across the landscape. In years like 2007 where there was no spring-summer rain, Russian thistle was nearly non existent. The occurance of Russian thistle is very episodic and does not seem to be tied to livestock activity. Russian thistle is the only representative of this group in this allotment. It was observed along the major roads. It is a listed noxious weed. Road maintenance practices and equipment play a strong role in maintaining the site disturbance and in spreading seeds of these type species. Russian thistle has the additional ability to spread across the landscape because the plant will break off from the roots and roll across the landscape spreading the seeds. There is a future concern for Moroccan mustard (*Brassica tourenefortii*), Mediterranean mustard (*Hirschfedia incana*) and black mustard (*Brassica nigra*) which are spreading along road corridors in the region

The third group of invasive non-native species are species which occur as a series of specific infestations at specific sites. All of these species are listed noxious weeds and have active control efforts in place. None of these species occur within the grazing allotment.

Early detection is a major tool in the management of invasive/non-native species. For that reason, the Ridgecrest Field Office Integrated Weed Management Plan includes detection and prevention plans (USDI BLM 2006b) which are being carried out.

b. Environmental Consequences

a. Impacts of Proposed Action

As a generalization, livestock grazing has the potential to influence invasive, non-native species several ways. These possible influences could include transporting new species in from other regions, moving seeds from infested sites within the allotment to non infested sites and by modifying sites to be more favorable to invasive, non-native species. The movement and introduction of new species as a result of livestock grazing in the Last Chance Allotment has a low probability due to several reasons. The cattle spend their lives on the private ranch lands in the region or on the adjacent public lands which minimizes the chance of bringing in new species. Most existing invasive, non-native species are widespread and have been for a long time. Current livestock management is unlikely to cause any additional spread as most of these species occur over most of the region already. The Russian thistle would likely continue to be an episodic species with populations tied to favorable weather conditions. There are few intense use sites that could provide a more favorable environment for the invasive, non-native species and the proposed action would not result in the creation of any new sites. Observations at watering and corral sites where animals concentrate have noted a dominance of bare ground or the more weedy species from the surrounding area rather than an invasion of new non-native invasive species. Maintenance of the existing range improvements would have little impact on invasive non-native species. Standard weed detection and prevention measures would continue to be carried out as noted in the Integrated weed management plan.

b. Impacts of No Action Alternative

Same as Proposed Action

c. Impacts of No Grazing Alternative

There would not be any expected changes in vegetation composition on an overall basis (Sanders (1992) and Johnson and Meyeux (1992)). Some high impact type sites may increase their perennial cover. Standing biomass levels could increase. Based on current literature and observations of areas which are not grazed, selecting the no grazing alternative would not be expected to result in any appreciable changes in the occurrence of current invasive, non-native species. Grazing would cease to be a factor in non-native, invasive species management, but the non-native, invasive species would continue to be a concern in the area.

I. NATIVE AMERICAN CONCERNS

1. Affected Environment

The area encompassed by the Last Chance allotment was inhabited at historic contact by small family based communities of Paiute-Mono Indians. These people have family and cultural ties with both California and Great Basin Native American communities. They occupied an area that included the Fish Lake, Valley, Eureka Valley, Saline Valley, Owens Valley, and around Owens Lake. There are four federally recognized tribes, all within the Owens Valley, at Bishop, Big Pine, Fort Independence, and Lone Pine.

The Western Shoshone occupied territory within the northern Mohave Desert, including portions of the Eureka and Saline Valleys on the southern edge of the allotment. The Timbisha Shoshone Tribe of Death Valley is a federally recognized tribe that represents the interest of these Native peoples.

2. Environmental Consequences

a. Impacts of Proposed Action Alternative

The Paiute and Shoshone people through the consultation process have not indicated there are any issues concerning the renewal of the grazing lease.

b. Impacts of No Action Alternative

The Paiute and Shoshone people through the consultation process have not indicated there are any issues concerning the no action alternative.

c. Impacts of No Grazing Alternative

This alternative would eliminate an activity that has been considered a continuation of the historic use of the area.

2. Environmental Consequences

a. Impacts of Proposed Action Alternative

Consultation with Native Americans has been conducted during November 2007 to determine whether or not there may be significant effects and impacts to Tribally important locations and resources associated with the Proposed Action. No specific information was offered though by the five Tribes.

b. Impacts of No Action Alternative

Consultation with Native Americans has been conducted during November 2007 to determine whether or not there may be effects and impacts to Tribally important locations and resources associated with the No Action Alternative, which represents the current allotment management practices. No specific information was offered though by the five Tribes.

c. Impacts of No Grazing Alternative

There are no impacts likely to occur under this alternative. This alternative would also eliminate an activity that has been considered a continuation of the historic use of the area.

J. RECREATION

1. Affected Environment

The public lands located within the Last Chance Allotment provide a wide range of outdoor recreation opportunities and experiences. Recreation activities include 4-wheel drive and dual sport motorcycle touring; mountain biking; upland gamebird and deer hunting; birding and other forms of nature study; dispersed camping; visiting cultural sites; pine nut gathering and rock hounding; horseback riding; and wilderness hiking and backpacking. The field office routinely issues commercial recreation permits each year for vision quest guiding within this project area region.

2. Environmental Consequences

a. Impacts of Proposed Action and No Action Alternative

While participating in casual and permitted recreational pursuits participants may encounter such range improvements as fence lines, closed gates, cattleguards, corrals and water developments as well as encountering herds of cattle on the public lands. While range improvements such as closed gates and cattleguards may delay ones recreational pursuits these impediments do not create a significant impact on recreational opportunities. It is recognized that some recreationalist find the presence of cattle on public lands as inappropriate, conversely to other visitors, the sighting of livestock grazing on the open range is often very intriguing and of interest to visitors and enhances ones recreational experience.

The construction of the proposed Eureka Valley Road Fence would result in the addition of a new range improvement to be encountered by recreational users to the region. But this development like all others would not create a significant impact on recreational use within the region.

b. Impacts of No Grazing

The elimination of grazing would have little effect on recreational opportunities in the region except for eliminating the experience of seeing cattle on the open range of the "Wild West.". Until all range improvements were removed recreational participants may still encounter the remnants of these developments which may delay but not prohibit pursuing one's recreational interest.

K. SOCIAL AND ECONOMIC VALUES

1. Affected Environment

The communities of Bishop, California and the Fishlake Valley area of Nevada are traditionally rural communities where ranching has played a dominant role. Bishop, California is has become more oriented toward tourism as recreationists seek opportunities in the Sierra Nevada, Inyo, and White Mountains. However, ranching is still a substantial though less dominant element in the economy and social values still promote agricultural pursuits to some degree, e.g., the Burro & Mule Days festival in Bishop.

2. Environmental Consequences

a. Impacts of Proposed Action and No Action Alternatives

Both the proposed action and the no Action alternative would have no affect on social and economic values because ranching practices would continue without substantial change.

b. Impacts of No Grazing Alternative

Locally the economic affect of the no grazing alternative would be negligible because there remains a substantial though dwindling community of ranchers in the area. The nearby Bishop community is increasingly supported by the recreational economy that is based on recreational opportunities in the Sierra Nevada, Inyo, and White mountains. The opportunities for ranching will still be supported by the leases offered by the Department of Water and Power, City of Los Angeles (LADWP). On the other hand the Forest Service is curtailing some of its leases in the mountains.

L. SOILS

1. Affected Environment

There are no soil surveys covering the California side of the Fish Lake Valley. There is, however, a soil survey covering the adjacent Nevada side of the valley. The soil survey is titled The Esmeralda, Nevada Soil Survey. It shows the valley area adjacent to the Last Chance Allotment classified into two general groups. These are the fine textured soils on the valley bottom and the coarse textured soils on the fans around the edge of the valley. The Strumble loamy fine sand is the common soil on the nearly flat valley bottom (2-5% slopes). There are a number of possible soil series on the fans around the valley. The soil survey lists nearly half a dozen soils associations including the Strumble-Luning (145), the Vigus-Unsel-Izo (420) and the Itme-Luning-Wardenot associations with several contrasting inclusions on the fans. The soil survey says that all of the soils have only a slight erosion hazard from water and the fine textured soils have a severe erosion hazard from wind. Soil test pits were dug during the range health assessments in 2007 which confirm that the soils on the California side of the valley match the descriptions for the adjacent Nevada soils. Further specific information about the soils can be found in the Soil Survey for the Esmeralda County Area, NV.

Much of the soil has been subject to periodic disturbance for 140 years due to ranching/farming, mining, wild horse and burro and livestock grazing. Additional soil disturbance is occurring as a result of vehicle use on unpaved county roads. Range health assessments were conducted on 3 upland sites in the Last Chance Allotment in 1999 and were revisited in 2007. Soil conditions were evaluated during those assessments. The evaluations found that the soils rated in the stable range.

Soil impacts were noted where cattle were concentrating at two trough sites along the Fish Lake Valley Pipeline and in the corral. Altogether, these concentration sites occupy around 2 acres or 0.006% of the allotment.

2. Environmental Consequences

a. Impacts of the Proposed Action Alternative

There would be different degrees of impacts to soils from different portions of the grazing operation. The established watering sites and corral concentrate the cattle into a small area resulting in nearly continuous trampling impacts to those sites when cattle are on the range. The trampling has resulted in increased compaction in the soil surface, elimination of vegetative cover, and destruction or disruption of biological soil crusts at these sites. The current impact constitute around than 2 acres (0.006% of the allotment area) Additional new impacts to soils at the established sites are unlikely.

As opposed to the intense use at concentration areas, the general grazing use is an extensive use with the animals and their hoof action spread over large areas. This use can be best characterized as a series of small impacted spots (hoof marks) with large areas of interspace. The rangeland health assessments found these sites to be in the stable range. The proposed use would not result in increased compaction or reduced infiltration rates.

The construction of the proposed Eureka Valley Road Fence would impact an estimated 35 sq feet of soils from installing wood posts. There could be minor compaction from the construction activities. Maintenance of range improvements is an ongoing activity that could result in minor site specific disturbances to soils. Digging new post holes would displace soils. This displacement would likely be to previously disturbed sites and would likely impact less than 50 sq. ft. if all of the existing posts were replaced. The removal of range improvements from the non grazed portions of the original allotment could result in one time impacts to several small sites from vehicle use on existing open routes. The impact from removing the Hidden Canyon Spring, Pipeline and Trough would be evaluated in a separate EA and Wilderness evaluation. Overall, the proposed action would result in a very small increase in wind and /or water erosion potential over the background levels.

b. Impacts of the No Action Alternative

The impacts of the no action alternative would be similar to those in the proposed action alternative. There would be slightly more impacts from maintenance activities on range improvements and no impacts from construction of new range improvements.

c. Impacts of No Grazing Alternative

Elimination of grazing would eliminate any additional impacts to soils as a result of cattle grazing. Soils at concentration areas would slowly loosen to a more natural compaction rate, improving infiltration rate and stability and begin to revegetate. Removing existing range improvements would involve removing several troughs, several fences, three spring developments and a corral. Removing these existing range improvements would cause few, if any, new disturbances to soils.

M. SPECIAL STATUS PLANTS:

1. Affected Environment

No BLM Special Status Plants have been identified on the allotment.

Sodaville milkvetch (*Astragalus lentiginosus* var. *sesquimetralis*) is recorded from Big Sand Spring which used to be in the allotment but is now in Death Valley NP. Death Valley Beardtongue (*Penstemon fruticiformis* var. *amargosae)* and Geyer's Milk-vetch, *Astragalus geyeri* var. *geyeri*) are not on the allotment; Last Chance Rockcress (*Boechera yorkii*) is in Death Valley National Park and does not occur on the allotment. The following species are mentioned in NEMO, but are not in the allotment, nor are they on the BLM Special Status Species list because they are CNPS List 2 species (rare in California but common elsewhere): Shockley's Rock Cress (*Arabis shockleyi*), and Broad-keeled Milk-vetch (*Astragalus platytropis).* Shockley's Milk-vetch, *Astragalus serenoi* var.*shockleyi*, was recorded on the allotment in 1955, but is not a BLM special status species. Gilman's Cymopterus, *Cymopterus gilmanii*, was recorded in 1978, but it is also not a BLM special status species. Both of these species are on the CNPS list 2.

2. Environmental Consequences

a. Impacts of the Proposed Action Alternative
None

b. Impacts of No Action Alternative:
None

c. Impacts of No Grazing Alternative:
None

N. WASTE, HAZARDOUS OR SOLID

1. Affected Environment

Detailed surveys of hazardous or solid wastes have not been undertaken on this allotment. BLM maintains no records of reportable spills in the allotment. Although use of motorized vehicles and equipment by the livestock operator may have resulted in periodic and scattered spills or releases of fuel and petroleum products in the allotment, none are documented. For this reason we believe that the proposed action and the alternatives would have no affect on hazardous or solid waste.

O. WATER QUALITY, SURFACE AND GROUND WATER

1. Affected Environment

There is very little surface water in the Last Chance Allotment. The only surface water in the allotment is located at Willow Spring where there is small riparian area and a short stretch of running water. The rangeland health assessments conducted in 1999 found that the site was not in functioning condition. At that time, a flood event had damaged the spring development and water trough. Cattle had watered in the riparian area leading to the nonfunctional rating for the site. There have not been any cattle at the site since then. A new evaluation has not been conducted at the site, but field observations indicate recovery is in progress. Two spring developments called Kincade and Hidden Canyon Springs exist.. The sites consist of buried boxs and there is no free surface water. Most of the livestock water comes from the Fish Lake Valley Well and Pipeline. The well is located several miles west of the Last Chance allotment. The pipeline runs east from the well along the north side of the South Oasis Allotment and enters the Last Chance Allotment in its north west

corner. The pipeline extends along the western boundary of the Last chance Allotment and provided water to four watering sites. Extensive agricultural development exists in the Fish Lake Valley running from south of the Oasis area into Nevada. Most of the irrigation water comes from groundwater. On the California side the groundwater demand could exceed 10,000 acre feet per year. Current water levels are between 100 and 200 feet below the surface.

The Final Unified Watershed Assessment (1998) conducted in preparation of the Clean Water Action Plan (1998) classified watersheds into one of four categories. These four are:

Category I - Watersheds that are candidates for increase restoration activities due to impaired water quality.

Category II - Watersheds with good water quality that ,through regular program activities can be sustained and improved.

Category III -Watersheds with pristine or sensitive areas on federal, state or tribal lands that need protection.

Category IV -Watersheds where more information in needed..

The storm water flows from the study area end up in one of two identified basins. This primary basin is the Fish Lake-Soda Springs Valleys basin. This is the drain for the entire proposed action part of the Last Chance Allotment. The Fish Lake-Soda Springs watershed was classified as a category III watershed. The portion of the allotment proposed for exclusion drains into the Eureka Valley. This area is a part of the Eureka-Saline Valleys watershed which was classified as a Category I impaired low priority watershed.

2. Environmental Consequences

a. Impacts of Proposed Action Alternative:

Cattle would have no access to surface water in the Last Chance Allotment. The water demand for the proposed cattle use is approximately 0.375 acre feet per year. The maintenance of range improvements would have little impact on water resources.

b. Impact of No Action Alternative

Impacts of the no action alternative would be similar to the proposed action alternative except that cattle would return to Willow Spring where they are likely to impact the spring such that it would not meet range health standards. The cattle would also use water from the Hidden Canyon Trough.

c. Impacts of No Grazing Alternative

No impacts to water resources would occur due to cattle grazing since cattle grazing would cease to occur.

P. WETLANDS/RIPARIAN ZONES

1. Affected Environment

All riparian areas, including those associated with small seeps and springs, are classified as Highly Sensitive Unusual Plant Assemblages in the CDCA Plan (U.S. Bureau of Land Management. 1980), and require special attention and provide for special management. There are few high quality riparian areas on the allotment. Sylvania Canyon is about 3 miles long but contains riparian scrub vegetation intermittently along its length. There is not enough flow to permit a true riparian vegetation community to develop. Willow spring is a small 1-3 acre wetland/riparian area with some willows, but is outside the area to be grazed. The vegetation along the side of Sylvania Canyon hadn't been grazed and was in good condition.

2. Environmental Consequences

a. Impacts of Proposed Action and No Action Alternative

There would little impact to riparian vegetation from either the proposed action or the no action alternative. Riparian scrub vegetation in Sylvania Canyon, generally not as edible as riparian vegetation, would not be heavily browsed. A lack of surface water in this canyon will also limit the amount of grazing here.

b. Impacts of No Grazing Alternative

Elimination of grazing would have minimum impact on the riparian areas.

Q. WILD AND SCENIC RIVERS

1. Affected Environment

The proposed action and alternatives would have no affect on wild and scenic rivers because there are no rivers so designated in the allotment.

R. WILDERNESS

1. Affected Environment

The Last Chance Allotment extends over 89% of the 18,677 acre Sylvania Mountains Wilderness area and 16% of the 72,152 acre Piper Mountain Wilderness area from the southeastern corner of Fish Lake Valley and northeastern Eureka Valley to the CA/NV state line. The remaining wilderness acreages fall within the Oasis Ranch, Deep Springs, South Oasis and Eureka Valley allotments. One-hundred percent of these wilderness areas lie within cattle allotments.

The Piper Mountain Wilderness (72,152 acres) is located in the transitional mountainous region between the White and Inyo Mountains and in Deep Springs, Fish Lake, and Eureka valleys. Elevations range from 3400' to 7700.' Spring and riparian areas are small, isolated, few and far between. They include Wheelbarrow, One Tub, Two Tub, and Wyler springs. There are a number of small springs associated with Deep Springs lake, but these are mostly outside wilderness on adjacent private lands. The one exception is an unnamed spring just south of Corral Springs. There are 5 allotments encompassing the entire Piper Mountains Wilderness. They are: Oasis Ranch, Last Chance, Deep Springs, South Oasis, and Eureka Valley Allotments. The Last Chance allotment is proposed for use in conjunction with the Oasis Ranch allotment.

The Piper Mountain Wilderness shares its southern boundary with Death Valley National Park and its eastern boundary with the Sylvania Mountains Wilderness. The area is a popular camping and hiking area. It is among the most accessible and remote, natural and pristine, of all the Ridgecrest Field Office's wilderness areas. Two vehicle corridors (Piper/Chocolate Mountain and Horse Thief Canyon) bisect the area through Eureka Valley. This provides several good camping and staging areas for wilderness activities (hiking and hunting) throughout the valley and surrounding ranges. The area is extremely popular among vision quest groups. It offers superb opportunities for solitude and for primitive and unconfined recreation. There are no developed trails. Visitors must travel cross-country on foot across varied topography ranging from flat valley floors to narrow, choked canyons, to broad, rolling hillsides, steep-sided scree slopes, and rocky prominences. There is still one large hazmat site, the Blue Rock Millsite, that needs to be reclaimed. Otherwise, restoration efforts have been largely successful in closing an estimated 31 miles of jeep trails that formerly existed in the area. The wilderness contains one wildlife spring development and 1 exclosure fence at Wheel Barrow Springs. There are 15 range developments in the Piper Mountain Wilderness for all allotments. Three of these developments (5511-1, 5511-2 and 5511-4) are associated with the Last Chance Allotment. All of there developments pre-existed wilderness designation in 1994, but not all were in repair and in-use at the time of designation. In addition, a new pasture fence extending 200 feet into wilderness has been proposed for the Deep Springs Allotment. At the present time, cattle grazing on 5 allotments has contributed more to the diminishment of the overall naturalness of this wilderness area than any other single activity.

The Sylvania Mountains Wilderness (18,677 acres) abuts the Piper Mountain Wilderness and the California-Nevada border. Death Valley National Park borders this wilderness on its west and south ends. The wilderness starts in Eureka and Fish Lake valleys and rises from 3400' through a series of rolling hills to a core of rough, deeply bisected mountains approaching 8000' at the California/ Nevada border. Riparian communities occur in some of the canyons. The three principal springs in the area are: Willow Springs in Cucamonga Canyon, Kincaid Springs in Sylvania Canyon, and Hidden Springs in the Sylvania Mountains along the California/Nevada border. The area offers outstanding opportunities for solitude and for primitive and unconfined recreation. People camp, hike, and hunt in this area. However, very few people visit this area and even fewer get out to explore it on foot. Sweeping views of Eureka and Fish Lake valleys can be had from many high vantage points. The wilderness is largely natural and pristine. There is one intact cabin structure along the wilderness boundary at Willow Springs. A few other old reclaimed routes, bulldozed areas, old camps, and collapsing structures associated with historic gold mining sites exist. Route restoration efforts have been mostly successful in closing the estimated 16 miles of old jeep trails/vehicle ways inside wilderness. There are 16 range developments inside of the Sylvania Mountains Wilderness, ten of which are associated with this allotment. All of these developments pre-existed wilderness designation in 1994, but not all were in repair and in use at the time of designation. While there are two cattle allotments spanning this wilderness area (Last Chance and Oasis Ranch), most of the area (88%) has not been grazed since 1997.

Current use levels and those in place at the time of wilderness designation (October 1994) are described as follows: The Last Chance (perennial) allotment used an average of 1197 AUMs per year or 36% of permitted AUMs per year from 1992-1994. Traditionally this was a year-round allotment running from March through February of each year. It was used in conjunction with Nevada BLM's Magruder Mountain Allotment which held most of the water. In 1994, approximately 66,918 acres or 65% of the allotment was transferred to Death Valley National Park who declared it unsuitable for grazing. The number of permitted AUMs was subsequently reduced by 58% from 3,267 AUMs to 1,370 AUMs annually, using the methods described in Appendix 2. The permittee used 1174 AUMs or 86% of the permitted 1,370 AUMs in 1995 and 364 AUMs or

26% in 1996. In 1996, the Magruder Mountain Allotment was closed for administrative reasons and as a consequence, the Last Chance allotment has not been grazed since 1997.

2. Environmental Consequences

a. Impacts of Proposed Action Alternative

Under the proposed action, grazing would resume after ten years of suspended use on a small portion of the allotment (approximately 30%). Not all of this portion lies within wilderness. Approximately 50% or 9,338 acres of the Sylvania Mountains Wilderness and zero percent or no acres in the Piper Mountain Wilderness portion of the allotment would be affected by cattle grazing under the proposed action. Grazing within the affected portion of the allotment would be resumed at levels lower than permitted and current use levels during the period of last active grazing from 1992-1996. Permitted AUMs would be reduced 71% from that of the reconfigured allotment from 1,370 to 396. In addition, the allotment would no longer be used year round. Strong incentives would be put in place to encourage the permittee to take use outside of the spring growing season to avoid forfeiting 30 days with spring use. Spring use would require two consecutive seasons of non-use in the spring before spring use could be taken again. The effect of these changes would be to stop grazing on half of the Sylvania MountainsWilderness area and on all of the Piper Mountain Wilderness (approximately 16% of the total wilderness area) portion of the allotment. As these areas have not been grazed in over ten years, the effect of the proposed action would be to retain the current high level of naturalness and untrammeledness in these areas, and to improve on it over time.

The changes would also reduce grazing pressure on the 50% of the Sylvania Wilderness that would be reopened to grazing under the proposed action. Visible impacts to wilderness would reoccur in the form of trampling, trailing, soiling, and loss of vegetative cover by cattle, but at levels greatly reduced from what has occurred historically and at the time of designation.

The most heavily-impacted and sensitive areas inside the wilderness portions of the allotment, springs and riparian areas, would benefit from being closed to cattle grazing. Willow Springs would continue to improve, both visually and functionally, with respect to the quality of its surface water, meadows, and riparian areas. Hidden Springs would also be outside of the proposed use area. These springs would remain unaffected by cattle and would continue to improve, even as cattle use resumed elsewhere. Only Kincaid Springs in the proposed use area would still be affected by cattle.

A new drift fence would be built partially inside of the Sylvania Mountains Wilderness to stop cattle from drifting into the lower half of the wilderness area and into portions of the Piper Mountain Wilderness within the allotment boundaries and Death Valley National Park. This fence is necessary to keep cattle within the upper 1/3 of the allotment still open for cattle use. The fence would be built outside wilderness within the county road right-of-way for most of its length. It would turn perpendicular to the road into wilderness for the last 1/3-1/2 mile to tie off in some rocky hills. Construction and subsequent maintenance of the fence would be accomplished with horses and handtools and without use of motor vehicles or motorized or mechanized equipment, or any other act prohibited by Wilderness. Work at the site would have a negligible impact on solitude and primitive and unconfined recreation. It would be very low key, barely discernible to visitors unless they were in the immediate vicinity, and of short duration. The fence would detract from the overall naturalness of the area. However, the overall footprint of the project would be small, less than 10 feet in width for the length of the fenceline and would be expected to shrink over time as vegetation returned to the site. Total ground disturbance would amount to less than one acre (0.6 acres). While the fence would introduce an additional, linear, manmade feature into the wilderness area, it would

protect a significant portion of both wildernesses from any cattle impacts whatsoever. It would also allow as many as 5 and possibly up to 7 existing range developments to be removed from the wilderness portions of the allotment proposed for non-use. Removal and non-use by cattle of these features (3 in Piper and 4 in Sylvania) would result in a net gain of naturalness and untrammeledness for these wildernesses.

Proposed Mitigation

Kincaid Spring is located in a box canyon with little forage at the extreme southeast corner of the proposed use area. An alternative water source in the form of an additional water haul site off of the Sylvania Canyon Road or an additional pipeline and trough off of the existing pipeline could be developed outside wilderness in a more central location to service this area.

There are two additional range developments in wilderness (5511-1 and 5511-2) that could be removed from the non-use area.

b. Impacts of the No Action Alternative

Under this alternative, impacts to wilderness would be expected to increase throughout the allotment. Grazing would be resumed after a 10-year respite. A 65% reduction in allotment acreage due to NPS gains from the California Desert Protection Act would be accompanied by only a 50% reduction in permitted AUMs for the allotment as a whole. Permitted use levels may remain the same as that permitted at the time of designation (See Appendix 2). But actual use levels might change. The original permittee used 1,197 AUMs per year or 36% of what was permitted annually between 1992-1994. In 1995 and 1996, these numbers dropped to 1174 and 364 respectively. Under the No Action Alternative, the new permittee could use up to 1,632 AUMs annually, exceeding previous use levels by 27% or more. This would occur in a substantially smaller allotment where cattle would be grazed year around. There would be no restrictions or limitations with respect to the spring growing season. All existing range developments would be kept in-place and would be made functional and available for cattle to use. Visible impacts to wilderness (naturalness) and functional impacts (untrammeledness) would occur. Evidence of cattle use, trampling, trailing, soiling, and loss of vegetative cover, particularly around watering sites, would be more widespread and pervasive. As no new developments are proposed under this alternative, the new drift fence would not be built. Livestock would continue to drift down into northeastern Eureka Valley, Cucamonga Canyon, and Death Valley National Park. Willow Springs, Hidden Springs, and Kincaid Springs would be impacted by cattle and range developments associated with cattle use. The recent, rather spectacular recovery of Willow Springs could be reversed and conditions there could become much worse. The spring may be unable to achieve proper functioning condition.

b. Impacts of No Grazing Alternative

The impacts of no grazing on wilderness would be to maintain and improve naturalness, untrammeledness, aesthetic and scenic qualities, specific adversely-affected resources, and opportunities for quality primitive and unconfined recreational experiences.

S. WILD HORSES AND BURROS

1. Affected Environment

Wild Horse and Burro:

The Piper Mountain Herd Management Area (HMA) is addressed in the CDCA Plan. This HMA consists of approximately 96,297 acres, of which approximately 34,412 acres is within the Last Chance Allotment. The present AML was established in the CDCA plan at 17 horses (201 AUMs) and 82 burros (686 AUMs). The Last Chance Allotment identified 164 AUMs for burros and 16 AUMs for wild horses.

The Piper Mountain HMA includes areas common to livestock grazing. The following table reflects the livestock grazing Allotments within the Piper Mountain HMA and allocated AUMs for wild horses and burros within them.

Table 7. Wild Horse and Burro forage allocations

Allotment	Allocated Wild Burros AUMS	Allocated Wild Horse AUMs
Whitewolf	27	0
Oasis Ranch	39	14
South Oasis	223	65
Last Chance	164	16
Deep Springs	0	26

There has been a shift in the number and location of wild horses and burros throughout the area. The burro population has dropped from an estimated 150 in 1980 down to the present estimate of 0 burros. It is speculated the removals conducted by Nevada and seasonal movements to Sand Spring where total removals have been conducted, has reduced the burro populations down to zero. The wild horse population at Piper Mountain has also dropped from an estimated 40 horses in 1980 to 0. In the mid 1980's, a group of 30 or more wild horses were seen in Deep Springs Valley foraging in the alfalfa fields during the summer. It is assumed that the herd dispersed either further north into Fish Lake Valley utilizing Furnace Creek up to Wild Horse Canyon or to the Silver Peak HMA administered through the Tonopah, Nevada Field Office. The Silver Peak HMA is adjacent to the northern portion of Piper Mountain HMA and there is a good potential that wild horses moved between the two HMAs.

In 2003, a helicopter census of the Fish Lake Valley, west Silver Peak and Piper Mountain Herd Management Areas and part of the White Mountain Wild Horse Territory (WHT) was conducted. No wild horses or burros were observed, including no sign or trails of old or recent activity in the Piper Mountain HMA. North of the HMA boundary, 24 horses were spotted within the White Wolf Allotment. These horses were moving off and on from the White Mountain WHT and possibly moving south from the Fish Lake Valley HMA. It was apparent that the White Wolf-Oasis Ranch Allotment boundary fence restricted the horses moving onto the Piper Mountain HMA.

In 2005, the Tonopah Field Office amended there land use plan and eliminated the Silver Peaks HMA.

In 2006, the Tonopah Field Office conducted a total removal of wild horses and burros from the Silver Peaks Herd Area and removed 143 wild horses, 6 burros and 5 mules.

It is apparent that the White Wolf - Oasis Ranch Allotment boundary fence is an effective barrier from keeping the wild horses from their free roaming nature as indicated that horse activity occurred on the north side of the fence (White Wolf Allotment) and no horse activity on the south side of the fence (Oasis Ranch Allotment). The horse trails within the White Wolf Allotment were leading east to west from the valley floor to the Inyo Mountains.

Allotment, exclosure and private fences has impacted the distribution of wild horses and burros throughout the HMA and may have been a factor in their inability to move back and forth from areas where they use to freely roam within the HMA.

It is anticipated that the long term management for wild horses and burros for this area will be re-evaluated sometime in the future, especially in relation to the White Mountain WHT and the number and location of wild horses and their free-roaming nature which may have been affected by the variety of fences that have been erected over the years to protect agricultural crops and the development of grazing pastures. An evaluation to the wild horse and burro element is necessary to determine if it is feasible to maintain the Piper Mountain Herd Area as a herd management area for wild horses and/or burros.

2. Environmental Consequences

a. Impacts of Proposed Action and No Action Alternative
There would be no negative impacts to the Piper Mountain HMA. Currently, there are no wild horses and burros within the allotment that is being renewed. The rangeland health assessments for the Last Chance Allotment did not indicate impacts from wild horse and burro use nor did they indicate impacts from livestock grazing that would impact the potential management of wild horses and burros if determined appropriate in the future.

The proposed fence project would diminish the potential of any remaining wild horses and burros drifting down into Cucomonga Canyon that leads into the National Park Service Lands and to Sand Springs, an area where wild horses and burros are to be removed.

It is highly unlikely that the proposed fencing project and fence maintenance would inadvertently confine wild horses or burros on the wrong side of the fence due to the lack of wild horse and burro activity in the allotment.

The cumulative impacts of renewing the grazing permits should not affect the wild horses and burros with the current forage allocations for all species. However, the cumulative impacts by existing and proposed fencing projects, may impact the free-roaming nature of wild horses and burros.

Recommended Mitigation:
Prior to any fence construction or repair with an active wild horse/burro trail going through it, an assessment needs to be made to assure the health of the horse/burro is not jeopardized in closing them off from critical waters or trapping them in areas where they should not be.

2. Impacts of No Grazing Alternative
The forage allocations from the CDCA Plan allows for the opportunity to re-evaluate if the Piper Mountain HMA is suitable for re-introduction of wild horses and burros. This allotment would be evaluated to determine if existing fence lines used in the management of cattle grazing would be removed, increasing the ability for the free-roaming nature of wild horses and burros. Other range

improvements would be evaluated for their suitability in the management of wild horses and burros. This may determine if a re-introduction of wild horses and burros to these areas would be warranted under their current forage allocation. The area would also be evaluated for its suitability as a wild horse and /or burro range which would change the available AUMs for these animals.

If other grazing lease renewals are not renewed within the Piper Mountain HMA, the same impacts as described, but to a larger scale.

T. WILDLIFE

1. Affected Environment

The habitat of the allotment has not been identified as producing a high diversity of wildlife. No state or federally listed species have been identified from the allotment (U.S. Bureau of Land Management. 2000a). The Last Chance Range (including the Sylvania Mountains) does have a population of desert bighorn sheep, though little monitoring of these species has been done recently. Bighorn sheep tend to use more rugged areas, especially for lambing, than cattle so would be less affected by the proposed grazing of cattle. Individuals, especially young rams, do tend to wander, traveling to nearby ranges, crossing basins and flats. Shrubs and grass as forage are needed on these travels. Sheep use Willow spring periodically but Last Chance Spring, outside the allotment, is very important to them (Weaver, 1970). Weaver (1970) cited competition with feral burros as a factor in the low population of sheep in 1970 and estimated 40 animals using the range in that year.

Mule deer also use the Sylvania Mountains and may overlap cattle use at certain times of the year. Deer may move down onto the flats in spring for annual forage or to leave the snow-covered areas. With global warming, deer are more likely to remain at higher elevations, further away from cattle use. BLM staff found deer sign in Sylvania Canyon and use of shrubs.

Prairie falcons and other raptors likely use the area, although no nesting sites have been identified. These birds require a productive range to produce prey items such as rodents and squirrels. A Swainson's hawk was found nesting near a farm house at the alfalfa fields about 7 miles away from Sylvania Canyon in the 1960s (U.S. Bureau of Land Management. 2000). Ferruginous hawks were observed by BLM biologists using these fields in the winter of 2007 (Parker, 2007). There is an alfalfa field about 2 miles from the western edge of the allotment that was being used by a variety of bird species, including ravens and red-tailed hawks. It is important to maintain the range in a "met" condition to provide prey for these raptors when the rodents/rabbits/squirrels are unable to use the agricultural fields. No burrowing owls have been documented, but biologists are not able to monitor this area regularly.

2. Environmental Consequences

a. Impacts of Proposed Action

The proposed action should reduce competition between the bighorn sheep and cattle. Maintaining the range in a "met" condition will allow wandering bighorn sheep to traverse the basins and flats feeding on shrubs and grasses. With water sites on the flats, cattle will be less inclined to move into the higher country used by bighorn sheep. Mule deer will likewise have sufficient winter forage if utilization remains at the levels proposed. The Eureka Valley Drift Fence (including cattle guards) will not impede the movement of deer in this area because of design modifications (see fence stipulations above). Environmental Protection Measures, also identified above, will reduce the impacts to wildlife during construction. The troughs will be modified to prevent wildlife from drowning. Cattle may use areas because of the troughs but would be removed as utilization reaches

the limits. The new and existing projects will not affect the long-term viability of wildlife populations on the Last Chance Allotment.

The prey base for the raptors should not be affected by levels of cattle grazing that maintain proper utilization of the grasses and shrubs. Hawks, eagles and owls should not be restricted because of a lack of prey due to cattle grazing.
Under the Proposed Action the frequency and cover of the perennial grasses and shrubs should remain stable, unless global warming reduces the values.

b. Impacts of No Action Alternative
Cattle would have more impacts under this alternative. With over 3 times the cattle use, the perennial grasses and shrubs will have higher utilization levels, leaving less for bighorn sheep and wintering deer that move onto the flats and basin area. Combined with global warming, this could cause naturally fluctuating populations to hit levels low enough to result in their extirpation. Under this alternative the new Eureka Valley Fence would not be built, allowing cattle to drift into sensitive areas, not proposed to be grazed under the Proposed Action. Maintenance of existing projects would not directly affect wildlife, but could indirectly impact species by encouraging cattle to use areas not recently used in numbers large enough to impact the vegetation.
There would be less cover and forage for rodents, rabbits and squirrels that provide the food for raptors. The reduction in the prey base could mean an increased risk of nest failures, or no nesting attempts at all.
Under this alternative there should be a decline in frequency and cover of the grasses and shrubs, especially with increasing temperatures.

c. Impacts of No Grazing
This alternative would continue activity that has been taking place for the last dozen years or so. Grass and shrub vegetation would continue in the same frequency and cover over the allotment of the last 3-5 years. The ongoing drought is likely to reduce these values, but may not be detectable with the sampling methods used.

U. VEGETATION

The project area is located in the Great Basin Floristic Province at the northern edge of the Desert Floristic Province as described in the *Jepson Manual, Higher Plants of California*. This has resulted in components from both these provinces occurring in the area. Sawyer and Keeler-Wolf in *A Manual of California Vegetation* describe the vegetation as Series (communities) dominated by shrubs. The vegetation in the Last Chance Allotment is typical of the region and consists almost exclusively of great basin shrub communities.

The vegetation on the Last Chance Allotment is strongly influenced by a number of factors including elevation, physical location, topography and the underlaying soils. The southern part of the allotment drains into the Eureka Valley and is strongly influenced by the Mojave Desert to the south. Habitats in the southern area consist of coarse rocky alluvial fans and steep rocky mountainous areas. The proposed grazing area lies in the northern portion of the allotment which drains to the west into the Fish Lake Valley and is strongly influenced by Great Basin vegetation. The Fish Lake Valley bottom is composed of fine textured soils. The valley bottom terminates at alluvial fans which extends to the mountains along the south and east side of the valley. A series of normally dry drainages run from the mountains across the fans and into the valley bottoms. Soils on the fans are coarse textured with rocks and cobbles through the soil profile.

There are Four major plant alliances located in this allotment. The Winterfat Series occurs along the valley bottom portion of the Last Chance Allotment. The vegetation is highly influenced by the soils which are fine textured and slightly saline. The vegetation includes winter fat (*Krascheninnikovia (Eurotia) lanata*), bud sage (Artemesia spinescens), four-wing saltbrush (*Atriplex canescens*), and Indian ricegrass (*Achnatherum (Oryzopsis) hymenoides*). Indian ricegrass reaches its maximum density in this vegetation/soils type. According to the Esmeralda County Soils Survey (USDA NRCS, 1995), Indian ricegrass cover can be between 20% and 30 % in this soils series with a mean annual precipitation of 6". The mean precipitation in the allotment area is slightly lower (5") which would lower expected cover. This alliance only occurs in the extreme northwest corner of the proposed grazing area and the alliance has not been sampled nor has baseline data been collected.

The fans along the east side of the Fish Lake Valley are comprised of a Great Basin Mixed Scrub alliance. This is a combination of series in a mosaic over the landscape. The soils, like the vegetation, are also in a mosiac over the area. The principal species in this area include spiny hop-sage (*Grayia spinosa*), menidoria (*Menodora spinescens*), four-wing saltbush, budsage, Indian ricegrass, and galleta grass (*Pleuraphis (Hilaria) jamesii*). According to the Esmeralda County Soils Survey (USDA NRCS, 1995), Indian ricegrass cover can be between 0% and 10 % in these soils series. Rangeland health assessments found Indian ricegrass in both sample areas, cover was between 1 and 16%. Two range health evaluations conducted in 1999 and the reevaluations conducted in 2007 found these sites met health standards. This is the major vegetation alliance in the proposed grazing area and the major forage producer.

The area in Sylvania Mountains in the middle and eastern portion of the allotment is occupied by pinyon pine woodlands. Here the typical species include pinyon pine (*Pinus monophylla*), big sage (*Artemesia tridentata*), bitterbrush (*Purshia tridentata Var. glandulosa*), green tea (*Ephedra veridis*), Needle and thread (Hesperostipa (Stipa) comata) and desert needlegrass (*Achnatherum (Stipe) speciosa*). Grazing within this vegetation alliance has been limited due to limited water resources. Water has been available at Kincade, Hidden Canyon and Willow Springs, and the grazing has typically occurred a short distance from these sites. Over 3/4 of this alliance, including Hidden Canyon and Willow Springs, is located outside the proposed grazing area. Currently health standards are being met in this alliance.

A small mixed willow alliance occurs at Willow Springs. This site did not meet range health standards in 1999 and was not reevaluated in 2007. this site is outside the proposed grazing area. Further information on this area is found in the Wetland/Riparian section of this document.

A creosote brush (*Larrea tridentata*) alliance occurs primarily outside the proposed grazing area on and adjacent to the Eureka Valley. This occurrence of Creosote brush along the southern edge of the allotment is nearly the northern extent of the range of this species in the region. This alliance produces very little perennial forage and has had very little grazing history in the allotment. Most of it is south of the Cucomungo Drift Fence.

Most plants in the allotment are growing-renewable resources which can tolerate some level of use on a sustained basis. Much of the perennial plant's production is directed at maintenance of energy reserves which are necessary to sustain future years' initial growth and flowering. Of secondary importance is the production of seeds. This means that perennial plants need to maintain an adequate level of photosynthetic processes through the year until they go dormant. Grazing removes photosynthetic material and stored energy from plants. The amount of material that can be removed from a plant depends upon the species, the time of year, overall health of the plant and growing conditions (soil moisture and nutrients). This amount of a perennial plant that can be safely removed

on a sustained basis is referred to as the proper use factor (PUF). It is expresses as a percent of the current year's growth that can be removed on a sustained basis. Each species has its own PUF. These can run from 50% for some grass species to 10% or less for some shrub species. These PUFs were developed for more average years and should be considered excessive in draught years. The CDCA Plan contains recommended PUFs (appendix 2 and USDI BLM 1980b).

The California Desert Conservation Area (CDCA) Plan rated the allotment in fair condition. The fair rating was the result of heavy grazing use in the southern portion of the allotment in Last Chance Canyon and around Last Chance Spring. The northern portion of the allotment was not getting much use at that time due to a lack of water developments. The Fish Lake Valley Lake Well and Pipeline was a new feature at that time. The CDCA Plan established the carrying capacity for the original Last Chance Allotment at 4887 AUMs. From this carrying capacity the CDCA Plan allocated 180 AUMs to wild horse and burro use, 18 AUMs to wildlife and 3267 AUMs to livestock allocations. In 1994, The Desert Protection Act transferred the southern portion of the allotment to the Death Valley National Park. It was estimated that 66,992 Acres along with 2129AUMs of production and 1423 AUMs of preference were transferred to the park. That left 34,332acres with 2758AUMs of production and an allocation of 1632 AUMs on BLM. Under the proposed action, the estimated production on the reduced area is 1950 AUMS and the recommended allocation is 396 AUMs.

2. Environmental Consequences

a. Impacts of Proposed Action Alternative:

The proposed action represents a change in the way grazing has been conducted in the past. With the proposed action, grazing would only occur in 11% of the area that the Last Chance Allotment occupied at the time of the CDCA Plan. The proposed grazing area is only 32% of the area where grazing was last authorized. Historically, this portion of the Last Chance Allotment has been in good condition. Range health assessments conducted in 1999 and 2007 concluded that this area met rangeland health standards. There is a certain amount of uncertainty as to how cattle will use the proposed grazing area. In past grazing in the proposed grazing area, cattle tended to use the area as a unit by itself. The proposed action has shorter grazing seasons and would not allow consecutive years of grazing during the spring growing season. The proposed allocation, which represents 20% of the estimated total livestock forage production, is conservative which will help ensure that overutilization does not occur. With the numerous changes in grazing that are proposed, it becomes extra critical that the vegetation monitoring is conducted. The proposed monitoring would ensure that the allocations and seasons of use are correct. Rangeland health evaluations are scheduled to ensure that the Health standards continue to be met. Based upon the observations of previous grazing, a more restrictive grazing season and a conservative allocation, forage consumption would continue to stay within utilization limits and the area would continue to meet rangeland health standards.

Use of the existing watering sites would continue the existing intense use on those areas which constitute around than 2 acres (0.006% of the allotment area). Additional new impacts to vegetation at the established sites are unlikely. The proposed range improvements construction does not include clearing so there will not be a significant direct impact to vegetation from that proposed project as the footprint of the project is less than 1 acre. Maintenance of range improvements should result in few impacts to vegetation as there is access to the sites for vehicles and the actual maintenance of the improvements is primarily with hand tools.

b. Impact of the No Action Alternative:

Many of the impact would be similar to, but much more intense than, the proposed action. Differences would be in the area grazed, the allocation, limits on the season of use and impacts to natural waters. With this alternative the allotment area would be approximately 34,000 acres with no fences to separate the proposed grazing area from the remainder of the allotment and along most of the boundary against the Death Valley National Park. Livestock control and trespass into Death Valley National Park would likely be major issues. Livestock movement in and out of the proposed grazing area could not be controlled. With the allocation of 1632 AUMs, four times the proposed alternative, cattle drift would likely result in cattle concentration in incorrect areas and potential overgrazing. In addition to the issue of stocking rate, there would be no seasonal control on grazing use, increasing the possibility of overuse of the grasses in the spring. The rangeland health analysis found that Willow Spring did not meet standards in 1999. With this alternative, there is no protection for Willow Spring and it is likely that the spring would not meet health standards for native vegetation with the no action alternative. Impacts from the maintenance of range improvements would be similar to the proposed actions with the addition of impacts from maintenance of Willow and Hidden Canyon Springs and the Cucomungo Fence. Both of these spring projects are in need of maintenance to make them fully functional. Maintenance at Willow Springs may require the removal of several hundred square feet of riparian vegetation and the installation of new pipe and a trough. Access to Hidden Canyon Springs would require access along previously rehabilitated roads in the Sylvania Mountain Wilderness. This would damage the vegetation rehabilitation that has taken place.

c. Impacts of No Grazing Alternative:

The no grazing alternative would remove cattle grazing as an impact to vegetation. Most of the allotment meets rangeland health standards and that would continue. The concentration areas constitute approximately 2 acres and these area would slowly recover to a condition similar to the surround areas. The application of rehabilitation measures would speed up the process and more likely result in the desires plant communities. The removal of existing range improvements would result in a disturbance of less than 2 acres.

V. CUMULATIVE IMPACTS

There are a number of resource disturbing activities in the region. Many of these are documented in the NEMO EIS (USDI BLM 2005a) and are incorporated by reference. These include paved and unpaved roads, farming, mining, rights-of-ways, residential and commercial development and livestock grazing. The roads, farming, mining, rights-of-ways and development activities tend to be permanent dedication of sites and constitute a total loss of the site productivity. Mining in the area dates back to the late 1800s and continues to today. This allotment has seen over 130 years of grazing. In the 60 years prior to the Taylor Grazing Act (1934), large herds of cattle used the area with no regulation.

Table 8. Cumulative Impacts to Various Resouces

Land use -→ Resource	Proposed Action	No Action	No Grazing	Paved Roads	Unpaved Roads	Farming	Mining
Air Quality	less than 0.01 % of regional PM 10 emissions No long term impact	less than 0.01 % of regional PM 10 emissions No long term impact	No impact	1% of regional PM10 emissions	20 % of Regional PM 10 emissions	less than 0.1 % of regional emissions in 2005	0.5 % of regional emissions
Biological Soil Crusts	Minimal impact	Minimal impact	No impact	Paved roads are a total dedication of resources	unpaved roads are a total dedication of	Total dedication of site for use	Casual use also some Sand and Gravel represent partial to total loss of habitat
Flood Plains	No effect	No effect	No effect	Roads can concentrate water and direct flows	Roads can concentrate water and direct flows	Most farming in area in flood plains	No effect
Invasive, Non-Native Species	Non-native invasive species favor intense use sites (under 10 acres) Historic heavy use	Non-native invasive species favor intense use sites (under 10 acres) Historic heavy use	Historic use sites will recover to resemble surrounding specie mix and densities	Roadsides and associated maintenance are a major vector for introduction and spread of new species	Roadsides and associated maintenance are a major vector for introduction and spread of new species	Intense use sites favor some non-native invasive species	Intense use sites favor some non-native invasive species Construction equipment is a major vector for introduction and spread of new species
Soils	small surface disturbance especially in concentration areas	small surface disturbance especially in concentration areas	none	Paved roads are a total dedication of resources	unpaved roads are a total dedication of resources	Total dedication of site for use	Casual use also some Sand and Gravel represent

							partial to total loss of soils
Land use -→ Resource	Proposed Action	No Action	No Grazing	Paved Roads	Unpaved Roads	Farming	Mining
Special Status Plants Species	None	None	None	None	None	None	None
Water Quality	None	None	None	some from runoff	some from runoff and surface erosion, also channeling water	Possible from agricultural chemicals in Fish Lake Valley	Possible from toxics and erosion
Wetlands/ Riparian Areas	Low potential from vehicle use of Sylvania canyon	Low potential from vehicle use of Sylvania canyon	Low potential from vehicle use of Sylvania canyon	None	Road in Sylvania Canyon	None on allotment	Potential exploration in Sylvania Canyon
Wilderness	Improvement in wilderness character and values overall from that at the time of wilderness designation.	Loss of wilderness character and values due to widespread and pervasive grazing impacts in the area.	Dramatic improvement in wilderness character and values in all wilderness portions of the allotment.	N/A	N/A	N/A	N/A
Wildlife	Low impact from other activities	Moderate impact to wildlife	Low impact from other activities	HWY 168 within ¼ mile of allotment, vehicle impacts on deer potential	Roads on allotment, moderate impacts on deer, rodents	Alfalfa fields 2 miles from allotment boundary, subsidized food for raptors, deer	Minor potential from exploratory activity.
Vegetation	Moderate impact to renewable vegetation recovery in one growing season	Moderate impact to renewable vegetation recovery in one growing season	none	total dedication of sites	total dedication of sites	can result in long term total dedication of site	can result in long term total dedication of site

	Historic use heavier	Historic use heavier					

Livestock Grazing

The cumulative impacts of the proposed action on livestock grazing would be to concentrate grazing in the area of the allotment most conducive to grazing and where it can be most easily controlled and monitored so as not over use the area. This enhances the permittee's ability to use the allotment on a long term basis.

Air Quality

The cumulative effect area for air resources for is the Great Basins Valleys Air Basin. The measure of cumulative emissions is reflected in concentrations measured at a series of monitoring stations located in the region. The area is currently unclassified for all of the NAAQS. There are few sources of emissions in the Last Chance Allotment area. These sources include area sources such as farming, travel on paved and unpaved roads and mobile sources such as vehicles (ARB 2006b). All of these sources combined have not resulted in exceedances of the national air quality standards (NAAQS). The expected emission levels are within the cumulative NAAQS 24 hour and one year PM2.5 and PM10 emission standards and the one and eight hour ozone emission standards and are not likely to result in or contribute to exceedences of the National Ambient Air Quality Standards.

Soil Crusts

There are a number of soil disturbing activities in the allotment areas. These include paved and unpaved roads, farming, rights-of-ways and livestock grazing. The roads and rights-of- tend to be permanent dedication of sites and constitute a total loss of the crustal community. Grazing activities are low intensity, short term activities and allow for yearly recovery. Evidence indicates that the complex crust communities that exist in the area will continue with grazing and the allotments will continue to meet health standards for soil crusts.

Invasive non-native species

There are a number of activities that result in site modifications and/or are vectors to move invasive/non-native species. Construction activities can disturb large areas and construction equipment is a well known carrier of seeds as it moves from infested areas to non infested area. The Ridgecrest Field Office Integrated Weed Management Plan includes a weed prevention section that addresses cleaning construction equipment to avoid contamination (BLM 2006b). Road maintenance moves seeds along the road sides as it progresses. Fill used for maintenance can contain seeds. Several new exotic species are following roads into and through the desert. Cattle use at intense use sites such as corrals and watering sites can cause conditions that favor some invasive non-native species. Experience and observations in these allotments indicate that these will be preexisting sites and the species will already be there. None of these alternatives would result in significant impacts from invasive non-native species.

Soils

The existing grazing activities would contribute little to any soil losses occurring on a regional basis. Many of the existing grazing intense use sites have been used for many years. Most of the regional erosion problems come from poor drainage on and adjacent to roads and rights-of ways.

Special Status Plants

A number of activities in the region potentially could impact Special Status Plants. These include roads, rights-of-ways, farming and grazing. Many of these activities result in total habitat destruction. As there is only on special status plant in the area and it occurs away for most activities, the threat is very small. Cattle-grazing is more likely to cause the loss of individual plants rather than habitat. The special status plants have coexisted with cattle grazing for over 100 years.

Water

There are a number of activities in the region which could degrade water quality. Grazing represents only a very small portion of the non-point-source pollution in the watersheds. Other sources include paved and unpaved roads, rights-of-ways, farming and highway construction,. The implementation of grazing BMPs or the elimination of grazing would not change the impaired classification for the watersheds. Most of the regional sediment problems come from poor drainage on and adjacent to highways, roads, trails and rights-of-ways.

Wetland/Riparian

A road passes through Sylvania Canyon, a dry canyon with little actual riparian vegetation. Vehicle traffic has little effect on developing riparian vegetation as long as there is insufficient surface or subsurface flow.

Wilderness

The cumulative impacts of the proposed action on wilderness would be to improve wilderness character and values overall. Grazing would be eliminated in 16% of the Piper Mountain Wilderness and 50% of the Sylvania Mountains Wilderness. Two of three spring areas in the Sylvania Mountains would be protected from cattle. Developments associated with these springs could be removed, along with other developments no longer needed in the non-use area. Removal of these developments would help offset the construction of a new drift fence in wilderness. Where grazing would be resumed, cattle impacts to wilderness are expected to occur. However, these impacts would be less than they were at the time of designation. Permitted use levels would be reduced to levels comparable or below actual use levels between 1992-1996. Seasons of use would change, from year-round to Summer-Fall-Winter use only. Spring grazing would be discouraged and would be restricted to every third year. This would help ensure long term sustainability and would allow for fuller recovery between seasons of active use.

Wildlife

The alfalfa fields likely have the most impact on the wildlife on the allotment. Being two miles away, raptors and deer are able to supplement their food supply during the time they're in operation. The cottonwoods around the ranch houses provide potential nest sites for raptors. There is little chance that the agriculture operations will expand in the future, because of the lack of water. There is also a low probability that human activity (hunting, camping, recreating, etc) will increase in the next ten years.

Vegetation

Grazing activities are short duration and allow for yearly recovery. Grazing consumes a portion of the renewable production and the rest and restrictions on use allow for recovery. Grazing is one of

several land uses that result in impacts to vegetation. Other impacting uses include paved and unpaved roads, rights-of-ways and farming. All of these uses result in a total removal of vegetation from areas. The removal of grazing would still allow the other uses to continue to impact vegetation.

Cultural Resources

The degree of potential cumulative impacts and effects to cultural resources, to a large degree, depends upon which allotment is at issue. The size, location relative to the prehistoric and historic uses of it, along with other BLM approved uses within the allotment, all factor into the cumulative determinations. The combination of grazing and other activities in the area, such as recreation and OHV uses, within the area could reach significant levels. However, compared to these other on-going activities, the cumulative effects of grazing upon cultural resources would not be a significant increase.

Native American Concerns

Consultation with Native Americans has been conducted during November 2007 to determine whether or not there may be significant effects and impacts to Tribally important locations and resources associated with the Proposed Action. No specific information was offered though by the five Tribes. Thus there will be no cumulative impacts to Native American concerns.

Socio-Economic

The loss of grazing privileges by any one ranch is probably negligible to the local economy as a whole. Cumulative impacts would be felt in the Bishop, California and Fishlake Valley, Nevada communities because they are traditional ranching communities and part of the traditional character of these communities would be jeopardized by the loss this entity.

Wild Horse and Burro

The cumulative impacts of renewing the grazing permits should not affect the wild horses and burros with the current forage allocations for all species. However, the cumulative impacts by fencing projects, may have impacted the free-roaming nature of wild horses and burros.

CHAPTER 4 – CONSULTATION AND COORDINATION

1. Public Participation & CCC

Consultation, Coordination, and Cooperation with Affected Interests groups, Interested Public groups, and other Government Agencies has taken place from the October 2007 through the present. The Affected Interest group consisted primarily of lessee and no response has been forthcoming from them. Government agencies included the US Fish and Wildlife Service, the California Department of Fish & Game, and the California State Lands Commission. To date, only the **** has responded and that was to individual specialists who had specific questions. The CDF&G has not responded to the full environmental assessment document. Interested public groups to which the document was submitted included environmental groups and a few individuals. (see Appendix 2 for chronology of Consultation, Coordination, and Cooperation).

Participating staff:

Name	Title	Specialty
David Sjaastad	Resources Branch Chief	Interdisciplinary Team Leader
Sam T. Fitton	Natural Resource Specialist	Grazing Management
Donald J. Storm	Archeologist	Cultural, Native American
Glenn Harris	Natural Resource Specialist	Botany, Soil, Air, and Water
Shelley Ellis	Wildlife Biologist	Riparian & Wildlife, special status plants
Robert Parker	Wildlife Biologist	Riparian & Wildlife
Alex Niebergs	Wild Horse & Burro Specialist	Wild Horse & Burro Management
Craig Beck	Recreation Specialist	Recreation
Martha Dickes	Wilderness Specialist	Wilderness
Peter Graves	NEPA	

Below is listed the CCC with the permittee/lessees and other interested public that have been contacted for this action.

Cultural

Consultation with the State Historic Preservation Officer regarding the range permit renewal process is accomplished pursuant to the procedures outlined in the *Supplement* to the *Protocol*. Grazing permit renewals have been scheduled for review in accordance with the *Supplement*. BLM Ridgecrest has submitted a schedule for the phased identification and evaluation of historic properties that might be threatened by continued grazing within the allotment. The Supplement provides a systematic long term management strategy to accomplish the identification and evaluation of cultural properties, as well as Standard Treatment Measures that may be utilized when BLM determines that significant historic properties would be affected by livestock grazing. In cases where BLM identifies that conflicts cannot be resolved, the BLM would consult with the California State Historic Preservation Officer pursuant to Section 106 of the National Historic Preservation Act and the *Protocol*.

The *Supplement* applies to the renewal of grazing permit authorizations and existing range improvements. All proposed undertakings for range improvements or changes in management prescription would be reviewed for effects to cultural properties pursuant to procedures set forth in the in the *Protocol* and in accordance with Section 106 of the National Historic Preservation Act (NHPA).

Native American

BLM has consulted with five Native American Tribes regarding the proposed action. The Tribes include the Bishop Paiute Tribe, the Big Pine Paiute Tribe, the Fort Independence Paiute Tribe, and the Lone Pine Paiute-Shoshone Tribe, and Timbisha Shoshone Tribe. BLM requested comment on the proposed undertaking during November 2007, and invited the Tribes to consult under the *Executive Memorandum of April 29, 1994* (Government-to-Government Consultation) and other applicable laws and regulations. None have requested to initiate consultation, or have commented on this proposed action.

Wilderness

December 20, 2007: Notice of Proposed Action (NOPA) sent out to affected interests and interested public. The NOPA covered the Last Chance allotment which encompasses wilderness areas.

Wildlife

November 2007: Scoping document and a letter sent to California Department of Fish and Game.

Affected Interests:

November 2007: Scoping document and a letter sent to all permittees/lessees asking for comments and input to the Oasis Ranch, White Wolf, Last Chance, Lacey-Cactus-McCloud, Tunawee Common, Walker Pass, and Hansen Common Environmental Assessments.

November 30, 2007: Letter to Native American Tribes concerning permit renewals on the Oasis Ranch, White Wolf, Last Chance, Lacey-Cactus-McCloud, Tunawee Common, Walker Pass, and Hansen Common allotments mailed, and request comments.

Interested Public:

November 2007: Scoping document and a letter sent to all interested publics asking for comments and input to the Oasis Ranch, White Wolf, Last Chance, Lacey-Cactus-McCloud, Tunawee Common, Walker Pass, and Hansen Common Environmental Assessments.

December 20, 2007: Notice of Proposed Action in Wilderness for the Oasis Ranch, White Wolf, Last Chance, Lacey-Cactus-McCloud, Tunawee Common, Walker Pass, and Hansen Common allotments mailed.

Government Agencies:

November 2007: Scoping document and a letter sent to all Government agencies asking for comments and input to the Oasis Ranch, White Wolf, Last Chance, Lacey-Cactus-McCloud, Tunawee Common, Walker Pass, and Hansen Common Environmental Assessments.

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APPENDIX 1
ALLOTMENT MAPS

APPENDIX 2
DERIVATION OF ANIMAL UNIT MONTHS (AUMs)

LAST CHANCE AUM DERIVATION:

1. Identify spectral classes within boundaries of Last Chance Allotment grazing area from spectral analysis map.
2. Establish sampling transects on map.
3. Measure millimeters of each spectral class along transects.
4. Divide total number of millimeters sampled of each spectral class by 0.9 and get the number of pixels sampled per spectral class where a pixel measures approximately 0.9 of a millimeter.
5. Sum the number of pixels per spectral class sampled to get the total number of pixels sampled.
6. Divide the pixels sampled of each spectral class by the total number of pixels sampled to get the percent of pixels sampled by spectral class.
7. Multiply the percent of pixels sampled by spectral class by 11,600 acres where 11,600 acres is the total acres of grazing area in the allotment. This yields the acres in each spectral class for the grazing area.
8. Multiply the acres in each spectral class times the production factor assigned to that spectral class, times 0.64 to get the kilograms of production for each spectral class in acres. 0.64 converts production factor Kg/Ha to production factor Kg/acre.
9. Divide the kilograms of production for each spectral class by 450 where 450 converts kilograms to pounds which is what is used when calculating Animal Unit Months. (990 lbs = 450 kg @ 2.2 lbs/1kg)
10. The sum of the kilograms of production by spectral class is total kilograms of production available. Divide this number by 450 and the answer is the number of total AUMs available within the grazing area.
11. The total AUMs is reduced by 10% as a correction factor applied to all the data. This was originally done when the CDCA Plan was formulated. This new corrected sum is equal to the Total Renewable Forage Production (TRFP).
12. Multiply the corrected AUMs times 56% and the answer is the Adjusted Renewable Forage Production (ARFP). 56% was chosen because this was the percent of the TRFP and attributed to the ARFP at the time the determination was done for the CDCA Plan. The ARFP is an adjustment for suitability and wet-dry year variation.
13. Take the ARFP and multiply it by 30% which is a reduction factor applied because many of the AUMs are a long distance from water.
14. Subtract 9 AUMs for wildlife.
15. Subtract 100 AUMs for Wild Horses and Burros.
16. This is the number of potential AUMs.
17. These potential AUMs are multiplied by .605 Drought Factor reflecting the severe drought conditions being experienced in Southern California over the past decade.

Last Chance AUM Derivation

spec class	mmeters	pixels	%of2036	acres in s,c,	prod. Factor (Kg/Hectare)	Kg	AUMs	acres	% acres
4	106	117.7778	0.057829	670.812765	15.86	6809.018	15.13115	183.7333	0.057829
5	15	16.66667	0.008183	94.9263347	37	2247.856	4.995235	26	0.008183
6	10	11.11111	0.005456	63.2842231	15.86	642.3602	1.427467	17.33333	0.005456
7	895	994.4444	0.488271	5663.93797	176.28	639001	1420.002	1551.333	0.488271
8	127	141.1111	0.069285	803.709634	146.7	75458.69	167.686	220.1333	0.069285
9	3	3.333333	0.001637	18.9852669	67.6	821.3786	1.825286	5.2	0.001637
10	37	41.11111	0.020185	234.151626	110.14	16505.25	36.67834	64.13333	0.020185
11	487	541.1111	0.265685	3081.94167	104.07	205272.1	456.1602	844.1333	0.265685
12	38	42.22222	0.020731	240.480048	57	8772.712	19.49492	65.86667	0.020731
14	80	88.88889	0.043644	506.273785	30.4	9850.063	21.88903	138.6667	0.043644
15	6	6.666667	0.003273	37.9705339	48.92	1188.812	2.641804	10.4	0.003273
27	28	31.11111	0.015276	177.195825	74.64	8464.574	18.81016	48.53333	0.015276
28	1	1.111111	0.000546	6.32842231	54.41	220.3709	0.489713	1.733333	0.000546
		2036.667		11599.9981		975254.1	2167.231	3177.2	

1. Total Kg 975,254 Kg
2. 975,254 Kg = 2167.2
AUMs
3. 2167 AUMs * 10% correction factor applied to data as per CDCA Plan = 1950 AUMs
   equals Total Renewable Forage Production
4. 1950 AUMs * 56% = 1092 AUMs = Adjusted Renewable Forage Production
   Where 56% = the % TRFP calculated to be the Adjusted RFP as used at the time of the determination.
5. 1092 AUMs - (30% of 1092) = 764 AUMs where a 30% exclusion is applied because distance from water.
   Factor applied at time of determination
6. Reduction for Wildlife, 9 AUMs = 755 AUMs
7. Reduction for WH & Burro, 100 AUMs = 655 AUMs
8. Reduction for severe drought, .605 = 396 AUMs

APPENDIX 3

PROPER USE FACTORS FOR FORAGE SPECIES

PROPER USE FACTORS FOR FORAGE SPECIES

IN THE RIDGECREST FIELD OFFICE AREA

Proper Use Factors (P.U.F.'s) are related as a percentage of plant that is allowed to be grazed. Usually an average is taken from sampling a local population at a site. These P.U.F.'s are taken from the CDCA Plan of 1980. Under the No Action alternative P.U.F.'s for key perennial forage species are used as guidelines for utilization. When the Regional Standards and Guidelines become effective with the signing by the Secretary of Interior the P.U.F's of key forage perennial species will still be used to measure utilization.

Plant- Scientific Name	Common Name	P.U.F.
	TREES & SHRUBS	
Acamptopappus sphaerocephalus	Goldenhead	10
Ambrosia dumosa	Burrobush	10
Artemesia spinescens	Budsage	20
Artemesia tridentata	Great Basin Sage	<5
Atriplex canescens	Four-wing Saltbush	40
Atriplex confertifolia	Shadscale	10
Atriplex hymenelytra	Desert Holly	<5
Atriplex polycarpa	Cattle Spinach	20
Chrysothamnus nauseosa	Rubber Rabbit Brush	<5
Chrysothamnus viscidiflorus	Green Rabbit Brush	<5
Coleogyne ramosissima	Blackbrush	<5
Encelia farinosa	Brittlebrush	<5
Ephedra nevadensis	Nevada joint fir, Mormon Tea	30
Ephedra viridis	Mountain joint fir	20
Ericameria cooperi	Goldenbush	0
Ericameria linearifolius	Linear-leaved Goldenbush	<5
Eriogonum fasiculatum	California buckwheat	20

Eriogonum wrightii	Wright's buckwheat	40
Grayia spinosa	Spiny Hopsage	30
Gutierrezia sarothrae	Snakeweed	0
Hymenoclea salsola	Cheesebush	<5
Isomeris arborea	Bladder-pod	10
Juniperus californica	California Juniper	0
Juniperus occidentalis	Western Juniper	0
Juniperus osteosperma	Utah Juniper	0
Krascheninnikovia lanata	Winter Fat	40
Larrea tridentate	Creosote bush	0
Lepidium fremontii	Desert Alyssum	<5
Lepidospartum squamatum	Scale-broom	<5
Lycium andersonii	Anderson thornbush	10
Lycium cooperi	Peach thornbush	10
Machaeranthera tortifolia	Desert aster	20
Menodora spinescens	Spiny menodora	20
Opuntia basilaris	Beavertail cactus	0
Psorothamnus fremontii	Indigo brush	10
Salazaria mexicana	Paperbag bush	10
Salix lavaegata	Red Willow	10
Salvia dorii	Purple Sage	10
Senna armata	Desert cassia	<5
Stephanomeria pauciflora	Desert Straw	30
Tetradymia spinosa var. *longispina*	Cotton felt-thorn	0
Yucca brevifolia	Joshua tree	<5

	FORBS	
Mirabilis bigelovii	Wishbone bush	40
Sphaeralcea ambigua	Desert Mallow	40
	GRASSES	
Achnatherum hymenoides	Indian Rice Grass	50
Achnatherum speciosa	Desert Needlegrass	50
Distichilis spicata	Saltgrass	30
Erioneuron pulchellum	Fluffgrass	20
Hilaria jamesii	Galleta grass	50
Poa scabrella	Pine bluegrass	50
Sitanion hystrix	Squirrel-tail	40
Sporobolus airoides	Alkali Sacaton	40

APPENDIX 4

PROPOSED REGIONAL STANDARDS & GUIDELINES, &

FALLBACK STANDARDS & GUIDELINES

GOVERNING LIVESTOCK MANAGEMENT

PART I

The following standards & guidelines are the proposed regional standards which the BLM must meet to assure public rangeland health. These standards and the guidelines may not be implemented until approved and signed by the Secretary of the Interior.

Regional Standards:

Soil

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

- Canopy and ground cover are appropriate for the site;
- There is diversity of plant species with a variety of root depths;
- Litter and soil organic matter are present at suitable sites;
- Maintain the presence of micro biotic soil crusts that are in place;
- Evidence of wind or water erosion does not exceed natural rates for the site;
- Hydrologic and nutrient functions maintained by permeability of soil and water; infiltration are appropriate for precipitation.

Native Species

Healthy, productive and diverse habitats for native species, including special status species (Federal T&E, federal proposed, federal candidates, BLM sensitive, or California State T&E, and CDD UPAs) are maintained in places of natural occurrence as indicated by:

- Photosynthetic and ecological processes continue at levels suitable for the site, season, and precipitation regimes;
- Plant vigor, nutrient cycle, and energy flow are maintaining desirable plants and ensuring reproduction and recruitment;
- Plant communities are producing litter within acceptable limits;
- Age class distribution of plants and animals are sufficient to overcome mortality fluctuations;
- Distribution and cover of plant species and their habitats allow for reproduction and recovery from localized catastrophic events;
- Alien and noxious plants and wildlife do not exceed acceptable levels;
- Appropriate natural disturbances are evident;
- Populations and their habitats are sufficiently distributed to prevent the need for listing special status species.

Riparian/Wetland and Stream Function

Wetland systems associated with subsurface, running, and standing water, function properly and have the ability to recover from major disturbances. Hydrologic conditions are maintained as indicated by:

- Vegetative cover will adequately protect banks, and dissipate energy during peak water flows;
- Dominant vegetation is an appropriate mixture of vigorous riparian species;
- Recruitment of preferred species is adequate to sustain the plant community;
- Stable soils store and release water slowly;
- Plants species present indicate soil moisture characteristics are being maintained;
- There is minimal cover of invader/shallow-rooted species, and they are not displacing deep-rooted native species;
- Maintain shading of stream courses and water sources for riparian dependent species;
- Stream is in balance with water and sediment being supplied by the watershed;
- Stream channel size and meander is appropriate for soils, geology, and landscape;
- Adequate organic matter (litter and standing dead plant material) is present to protect the site and to replenish soil nutrients through decomposition.

Water Quality

Surface and groundwater complies with objectives of the Clean Water Act and other applicable water quality requirements, including meeting the California State Standards, as indicated by:

- The following do not exceed the applicable requirements: chemical constituents, water temperature, nutrient loads, fecal coliform, turbidity, suspended sediment, and dissolved oxygen;
- Achievement of the Standards for riparian, wetlands, and water bodies;
- Aquatic organisms and plants (e.g., macro invertebrates, fish and algae) indicate support of beneficial uses;
- Monitoring results or other data that show water quality is meeting the Standard.

Regional Guidelines:

- Facilities shall be located away from riparian-wetland areas wherever they conflict with achieving or maintaining riparian-wetland functions.

- The development of springs and seeps or other projects affecting water and associated resources would be designed to protect the ecological function and processes of those sites.

- Grazing activities at an existing range improvement that conflict with achieving proper functioning conditions (PFC) and resource objectives for wetland system (lentic, lotic, springs, adits, and seeps) shall be modified so PFC and resource objectives can be met, and incompatible projects shall be modified to bring into compliance. The BLM would consult, cooperate, and coordinate with affected interest and livestock producers(s) prior to authorizing modification of existing projects and initiation of new projects. New range improvement facilities shall be located away from wetland systems if they conflect with achieving or maintaining PFC and resource objectives.

- Supplements shall be located a sufficient distance away from wetland systems so they do not conflict with maintaining riparian wetland functions.

- Management practices shall maintain or promote perennial stream channel morphology (e.g., gradient, width/depth ratio, channel roughness, and sinuosity) and functions that are appropriate to climate and landform.

- Grazing management practices shall meet State and Federal water quality Standards. Where impoundments (stock ponds) and having a sustained discharge yield of less than 200 gallons per day to surface or groundwater are excepted from meeting State drinking water Standards per SWRCB Resolution Number 88-63.

- In the California Desert Conservation area all wildfires in grazing allotments shall be suppressed. However, to restore degraded habitats infested with invasive weeds (e.g., tamarisk) prescribed burning may be utilized as a tool for restoration. Prescribed burns may be used as a management tool where fire is a natural part of the regime.

- In years when weather results in extraordinary conditions seed germination, seedling establishment and native plant species growth shall be allowed by modifying grazing use.

- Grazing on designated ephemeral rangeland shall be allowed only if reliable estimates of production have be made, an identified level of annual growth or residue to remain on site at the of the grazing season been established, and adverse effects on perennial species are avoided.

- During prolonged drought, range stocking shall be reduced to achieve resource objectives and/or prescribed perennial forage utilization. Livestock utilization of key perennial species on year-long allotments shall be checked about March 1 when the Palmer Severity Drought Index/Standardized Precipitation Index indicates dry conditions are expected to continue.

- Through the assessment process or monitoring efforts, the extent of invasive and/or exotic plants and animals shall be recorded and evaluated for future control measures. Methods and prescriptions shall be implemented, and an evaluation would be completed to ascertain future control measures.

- Restore, maintain or enhance habitats to assist in the recovery of federally listed threatened and endangered species. Restore, maintain, or enhance habitats of special status species including federally proposed, Federal candidates, BLM sensitive, or California State T&E to promote their conservation.

- Grazing activities shall support biological diversity across the landscape and native species and micro biotic crusts are to be maintained.

- Experimental research efforts shall be encouraged to provide answers to grazing management and related resource concerns through cooperative and collaborative efforts with outside agencies, groups, and entities.

PART II

These are the Fall Back Standards and Guidelines which will be in effect until the Secretary of Interior signs the new Regional Standards and Guidelines.

43 CFR 4180.2 Standards and Guidelines for Grazing Administration

(1) Fallback standards.

(i) Upland soils exhibit infiltration and permeability rates that are appropriate to soil type, climate and landform.

(ii) Riparian – wetland areas are in properly functioning condition.

(iii) Stream channel morphology (including but not limited to gradient width/depth ratio, channel roughness and sinuosity) and functions are appropriate for climate and landform.

(iv) Healthy, productive and diverse populations of native species exist and are maintained.

(2) Fallback Guidelines

(i) Management practices maintain or promote adequate amounts of ground cover to support infiltration, maintain soil moisture storage, and stabilize soils;

(ii) Management practices maintain or promote soil conditions that support permeability rates that are appropriate to climate and soils;

(iii) Management practices maintain or promote sufficient residual vegetation to maintain, improve or restore riparian-wetland functions of energy dissipation, sediment capture, groundwater recharge, and stream bank stability;

(iv) Management practices maintain or promote stream channel morphology (e.g., gradient, width/depth ratio, channel roughness and sinuosity) and functions that are appropriate to climate and landform;

(v) Management practices maintain or promote the appropriate kinds and amounts of soil organisms, plants and animals to support the hydrologic cycle, nutrient cycle, and energy flow;

(vi) Management practices maintain or promote the physical and biological conditions necessary to sustain native populations and communities;

(vii) Desired species are being allowed to complete seed dissemination in 1 of every 3 years (Management actions will promote the opportunity for seedling establishment when climatic conditions and space allow.);

(viii) Conservation of Federal threatened or endangered, Proposed, Category 1 and 2 candidate, and other special status species is promoted by the restoration and maintenance of their habitats;

(ix) Native species are emphasized in the support of ecological function;

(x) Non-native plant species are used only in those situations in which native species are not readily available in sufficient quantities or are incapable of maintaining or achieving properly functioning conditions and biological health;

(xi) Periods of rest from disturbance or livestock use during time of critical plants growth or re-growth are provided when needed to achieve healthy, properly functioning conditions (The timing and duration of use periods shall be determined by the authorized officer.);

(xii) Continuous, season-long livestock use is allowed to occur only when it has been demonstrated to be consistent with achieving healthy, properly functioning ecosystems.

(xiii) Facilities are located away from riparian-wetland areas wherever they conflict with achieving or maintaining riparian-wetland function;

(xiv) The development of springs and seeps or other projects affecting water and associated resources shall be designed to protect the ecological functions and processes of those sites; and

(xv) Grazing on designated ephemeral (annual and perennial) rangeland is allowed to occur only if reliable estimates of production have been made, an identified level of annual growth or residue to remain on site at the end of the grazing season has be established, and adverse effects on perennial species are avoided.