ENVIRONMENTAL ASSESSMENT

DOI-BLM-CA-D090-2010-0017-EA

Issuance of 10-Year Grazing Lease for Horsethief Springs Allotment

(California Valley and the Kingston Range)

U.S. Department of the Interior
Bureau of Land Management
Needles Field Office

1. Purpose and Need

A. Introduction

This Environmental Assessment (EA) has been prepared to disclose and analyze the potential environmental consequences associated with the reauthorization of a livestock grazing lease for ten years on the Horsethief Springs Allotment.

This EA is a site-specific analysis of potential impacts that could result with the implementation of a proposed action or alternatives to the proposed action. This EA assists the BLM in project planning and ensures compliance with the National Environmental Policy Act (NEPA) when making a determination as to whether any "significant" impacts could result from the proposed action or one of the viable alternatives. "Significance" is defined in Title 40 Code of Federal Regulations (CFR) 1508.27. This EA provides evidence for determining whether to prepare an Environmental Impact Statement (EIS) or a statement of "Finding of No Significant Impact (FONSI)." Should the decision maker determine that this project has "significant" environmental impacts following analysis, an EIS would be prepared for the proposed project. If not, a Decision Record (DR) may be signed approving a selected alternative. A DR, including the FONSI statement, document the reasons why implementation of the selected alternative would not result in "significant" environmental impacts.

B. Allotment Summary

Land Use Plan area:	California Desert Conservation Area, Northern and Eastern Mojave
Allotment Name:	Horsethief Springs
Kind of Livestock:	Cattle (cow/calf)
Current Authorized Use:	2,424 AUMs
Authorized Season of Use:	Year-long
Ephemeral or perennial:	Perennial/Ephemeral
Acres of Public Lands	108,113
Acres of State Lands	4,480
Acres of Private Lands	776
Total	113,369 (from BLM GIS data)
Desert Tortoise Critical Habitat	
Acres critical habitat	None
Acres non-critical habitat	None

C. Purpose and Need for the Proposed Action

The purpose of the proposed action is to determine whether to authorize grazing within the Horsethief Springs Grazing Allotment (HSA) and whether changes are necessary to current management.

The need for the proposed action is to address grazing of the HSA in compliance with the Federal Land Policy and Management Act (FLPMA), as amended by the Public Rangelands Improvement Act, Taylor Grazing Act, Title 43 CFR 4100, prescriptions of the 2002 Northern and Eastern Mojave Plan amendment (NEMO), provisions of the 2005 Biological Opinion for the California Desert Conservation Area Plan [Desert Tortoise] (1-8-04-F-43R), and BLM's proposed Regional Rangeland Health Standards.

D. Scoping and Issues

Notification of the proposed action and analysis has been posted on the Needles Field Office (NFO) web site during the environmental review process. The web site main page provides a link to projects currently under environmental review.

1. Native American Consultation and Coordination

10/31/04: The NFO mailed consultation letters to eight Indian Tribes, initiating government-to-government consultation. The eight tribes included the Chemehuevi Indian Tribe, Colorado River Indian Tribes, Fort Mojave Indian Tribe, Las Vegas Piute Tribe, Moapa Paiute Tribe, Pahrump Paiute Tribe, Timbisha Shoshone Tribe and Twenty-Nine Palms Band of Mission Indians of California.

11/1/04: The NFO received a letter from the Timbisha Shoshone Tribe stating that they had no comments on the proposed action.

12/14/04: The NFO initiated consultation regarding the proposed action with tribal chairs of the Las Vegas Piute Tribe, Chemehuevi Indian Tribe and Fort Mojave Indian Tribe. Tribal chairpersons requested a copy of the proposed action.

04/14/05: The NFO mailed detailed proposed actions to the eight consulted Tribes.

05/12/05: The NFO left telephone messages with Tribal chairpersons requesting concerns, comments, questions, or the need for additional information regarding the proposed action.

06/07/05: The Fort Mojave Tribal Chairperson requested a meeting with NFO Field Manager to discuss/address any potential Fort Mojave Indian

Tribe concerns/questions. The Needles Field Manager met with the Fort Mojave Tribal Council to review the project with the Council. No concerns about the proposed action were expressed by the Tribal Council during the meeting.

2. Cooperation, Communication, and Coordination with the Lessee

06/03/04: The NFO met with the Lessee to discuss the proposed action and develop a list of needed range improvements.

07/26/04: The NFO received completed Application for Grazing Lease Renewal.

07/29/04: The NFO left message with the Lessee regarding faxing the terms and conditions in the proposed action of grazing lease renewal environmental assessment.

07/30/04: The NFO faxed additional information on the terms and conditions of the new grazing lease to the Lessee.

09/10/04: The NFO contacted the Lessee to inform him that the grazing lease renewal process was suspended due to a court decision vacating and remanding the Biological Opinion for the NEMO Plan amendments to the U.S. Fish and Wildlife Service.

12/20/04: The NFO mailed a letter to the Lessee discussing the delay in the lease renewal process due to the lawsuit remanding the June 17, 2002 Biological Opinion to the United States Fish and Wildlife Service.

04/05/05: The NFO contacted the Lessee to inform him that a new Biological Opinion had been issued by the U.S. Fish and Wildlife Service.

05/11/09: BLM met with Lessee for input regarding a new main corral location and placement of four water traps for the proposed pipeline extension from the north branch of the Horsethief Springs pipeline. Not meeting the needs of the Lessee, and after further surveys, no other site was made available in that area. The Lessee was asked to provide a copy of their proposed livestock management plan for incorporation into this EA.

09/18/09: Received from Lessee per BLM request, a narrative description of their conceptual livestock management plan and projects.

09/30/09:	District and Field Office staff met on the allotment to discuss current livestock grazing within the allotment.
10/22/09	Amargosa Conservancy met with BLM to discuss allotment riparian and lease issues.
05/25/10	BLM met with the Lessee to discuss the Horsethief Springs Allotment Management Plan, internal pastures, range improvements and wilderness areas.

E. Land Use Plan Conformance

The proposed action is subject to and in conformance with the California Desert Conservation Area Plan 1980 as amended (CDCA Plan). The proposed action is in accordance with 43 CFR 1610.5-3, and, is tiered into the Northern and Eastern Mojave plan amendment which provides site-specific grazing management direction within grazing allotments. Tiering into the CDCA and NEMO plan amendment allows this EA to focus on issues related to livestock grazing on the Horsethief Springs Allotment while relying on NEMO plan amendment for guidance. Analysis of environmental issues previously considered and addressed in the NEMO plan amendment are incorporated into this EA by reference. Management direction from the CDCA Plan and NEMO plan amendment include:

1. CDCA Plan

a. Use range management to maintain or improve vegetation to meet livestock needs and to meet other management objectives sit (sic) forth in the Plan.

b. Continue the use of the California Desert for livestock production to contribute to satisfying the need for food and fiber from public land.

c. Maintain good and excellent range condition and improve poor and fair range condition by one condition class, through development and implementation of feasible grazing systems or Allotment Management Plans (AMPs). Adjust livestock use where monitoring data indicate changes are necessary to meet resource objectives.

2. NEMO Plan Amendment

a. The NEMO plan amendment was developed expressly to address special status plant and animal species and to establish conservation strategies for those species within the multiple use context required of the CDCA Plan by section 601 of the FLPMA.

b. 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, the NEMO plan amendment established programmatic management prescriptions, including regional land health standards and guidelines for grazing management; seasonal utilization prescriptions for perennial species; restrictions on cattle grazing within desert tortoise habitat; monitoring requirements; and specific management prescriptions for Desert Wildlife Management Areas (DWMAs) such as the elimination of ephemeral authorizations and the implementation of an ephemeral forage production threshold of 230 pounds per acre (NEMO plan amendment, section 2.2.3 pg. 2-27 and 2-28). This EA analyzes the specific application of the programmatic management prescriptions of the NEMO plan amendment and considers alternative means to achieve the purpose and need on this allotment as described in section C of this chapter.

c. The NEMO plan amendment considered a range of alternatives to the public land livestock grazing program. The alternatives considered to be more and less restrictive management approaches were addressed at a regional level for approximately 3.8 million acres of public lands in the NEMO Plan amendment action area. This EA analyzes the range of alternatives for grazing consistent with the NEMO plan amendment, including a proposed action and continuation of current management (the "No Action" alternative). Chapter 2 of this EA describes the alternatives analyzed in detail, and identifies the alternatives considered but dismissed from detailed consideration.

d. Impacts of livestock grazing are addressed at a regional level in the NEMO plan amendment. 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. This regional analysis is incorporated by reference (from the NEMO FEIS, Chapter 4); general discussion of these impacts is repeated. This EA analysis focuses on the specific environmental issues associated with areas where livestock are having or may have substantial site-specific effects, including areas where livestock congregate on the allotment. Discussion of specific topics analyzed in the EA, as well as other resource topics addressed regionally (but be excluded from further analysis in the EA) is contained in Chapter 3.

e. NEMO plan amendment balances conservation with public use,

occupancy, and development on a regional level. For example, Areas of Critical Environmental Concern (ACECs) 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 the NEMO plan amendment, BLM proposes specific lease terms and conditions to ensure that an appropriate multiple use balance is maintained on this allotment while providing for conservation in accordance with the NEMO plan amendment and the 2005 CDCA BO (1-8-04-F-43R).

f. In addition, BLM may use its authority to close an area of the allotment to grazing use and/or take other measures to protect resources as 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)).

g. The NEMO plan amendment does not identify the Horsethief Springs Allotment for voluntarily relinquishment. The current Lessee may request voluntary relinquishment of their lease at any time, however, because the allotment was not identified for voluntary relinquishment, a plan amendment would be required for subsequent designation of the allotment as unavailable for livestock grazing.

F. Authority and Regulatory Relationships:

1. Authority for the proposed action includes the Taylor Grazing Act of June 28, 1934 as amended (43 United States Code 315, 315a through 315r); the Federal Land Policy and Management Act of 1976 (43 U.S.C. 1701 et seq.) as amended by the Public Rangelands Improvement Act of 1978 (43 U.S.C. 1901 et seq.); Public Land Orders, Executive Orders, and agreements authorize the Secretary to administer livestock grazing on specified lands under the Taylor Grazing Act or other authority as specified.

2. BLM will ensure that livestock grazing will comply with 43 CFR 4100.

3. In August 2004, the BLM California State Director and the California State Historic Preservation Officer (SHPO) addressed the issue of compliance procedures for Section 106 the National Historic Preservation Act (NHPA), 36 CRF 800, for processing grazing permit lease renewals for livestock as defined in 43 CFR 4100.0-5. The State Director and the SHPO amended the State Protocol Agreement between California Bureau of Land Management and the California State Historic Preservation Officer with the 2004 Grazing Amendment,

Supplemental Procedures for Livestock Grazing Permit/Lease Renewal. This amendment allows for the renewal of existing grazing leases in accordance with the 2007 Protocol, as amended, implementing the National Programmatic Agreement Among the BLM, the National Council of State Historic Preservation Officers and the Advisor Council on Historic Preservation, (see Appendix 3).

4. Pursuant to 50 CFR 402, BLM will ensure compliance with the incidental take statement of the 2005 Biological Opinion for the California Desert Conservation Area Plan. BLM would immediately report injuries or mortality of desert tortoises as a result of grazing to the US Fish & Wildlife Service (USFWS)``. BLM and USFWS would review the circumstances to determine if any additional protective measures are required. BLM would compile and report annually to USFWS instances of take of the desert tortoise due to grazing. If the combined annual level of take reaches five tortoises for all allotments in the NEMO and Northern and Eastern Colorado Desert Plan amendment areas, BLM and USFWS would determine if reinitiation of consultation is necessary.

5. The wilderness areas are managed primarily to preserve natural conditions. The Wilderness Act prohibits commercial enterprises, permanent and temporary roads, the use of motor vehicles, motorized equipment, or mechanical transport, landing of aircraft, and placement of new structures and installation. Each or these prohibitions are subject to special provisions provided both in the Wilderness Act and the California Desert Protection Act designating the area as wilderness.

For allotments within wilderness areas, the management provisions of the 1964 Wilderness Act and/or enabling legislation for the wilderness area shall apply. Congress provided additional guidance for managing livestock within wilderness areas through the Congressional grazing guidelines found in the 1980 Colorado wilderness legislation. Regulations to manage livestock in wilderness are found in 43 CFR 6300.

G. Rangeland Health

Indicators for Rangeland Health assessments (Range Health) are monitoring techniques used to provide early warnings of resource problems on upland range sites. These qualitative techniques were first performed in August of 1998 when the process and paperwork was just beginning to be used and has since been revised on several occasions to become today's Indicators for Rangeland Health (Version 4). This monitoring technique was repeated again in March 1999 and supplemented with Pace/Frequency data.

Indicators for Rangeland Health was conducted at one study site in May of 2007. The incomplete data set suggests nothing regarding soil site stability and biotic integrity,

however concerns about hydrological function was noted as functioning at risk with no apparent trend on several occasions. Probable cause attributed to the uncontrolled presence of livestock.

On May 20, 2008, another qualitative method for riparian areas, Properly Functioning Condition, was performed at Horse Thief, Crystal, Wildhorse and Tule Springs and the subsequent results indicated that these four riparian areas were functioning at risk with no apparent trend. The rational stated that livestock caused the damage and this was exacerbated by the presence of invasive weedy species. Invasive plant species known to occur include salt cedar (*tamarisk ramosissima*), tree of heaven (*Alianthus altissima)* puncturevine (*Tribulus terrestrius*) Multa starthistle (*Centaurea melitensis*) and are being expressed from the seed bank and appearing in the riparian areas. Presently weed eradication efforts have been ongoing and are expected to continue until these four riparian areas are weed free.

BLM is required under 43 CFR 4180 to implement remedial action that would make progress towards achievement of riparian health standards. After the 2008 assessment, four exclosure fences were built in April, 2010 to exclude livestock from entry onto Horse Thief, Crystal and Wildhorse Springs. There are two adjacent spring sites at Wildhorse Springs. The last spring assessed in 2008 was Tule Springs that remains unfenced today and is not expected to be impacted by livestock when scheduled to use Pasture 2 because this site will not be developed as a livestock water production site, however should livestock exploit the site it would be enclosed by another riparian exclosure fence.

2. Proposed Action and Alternatives

Proposed Action

The proposed action is to re-issue a 10-year lease that is in conformance with the CDCA Plan, as described in parts 1–5 of this section. The intent of the proposed action is to balance environmental protection while continuing to use the allotment for livestock grazing.

1. The Horsethief Springs Allotment grazing lease.

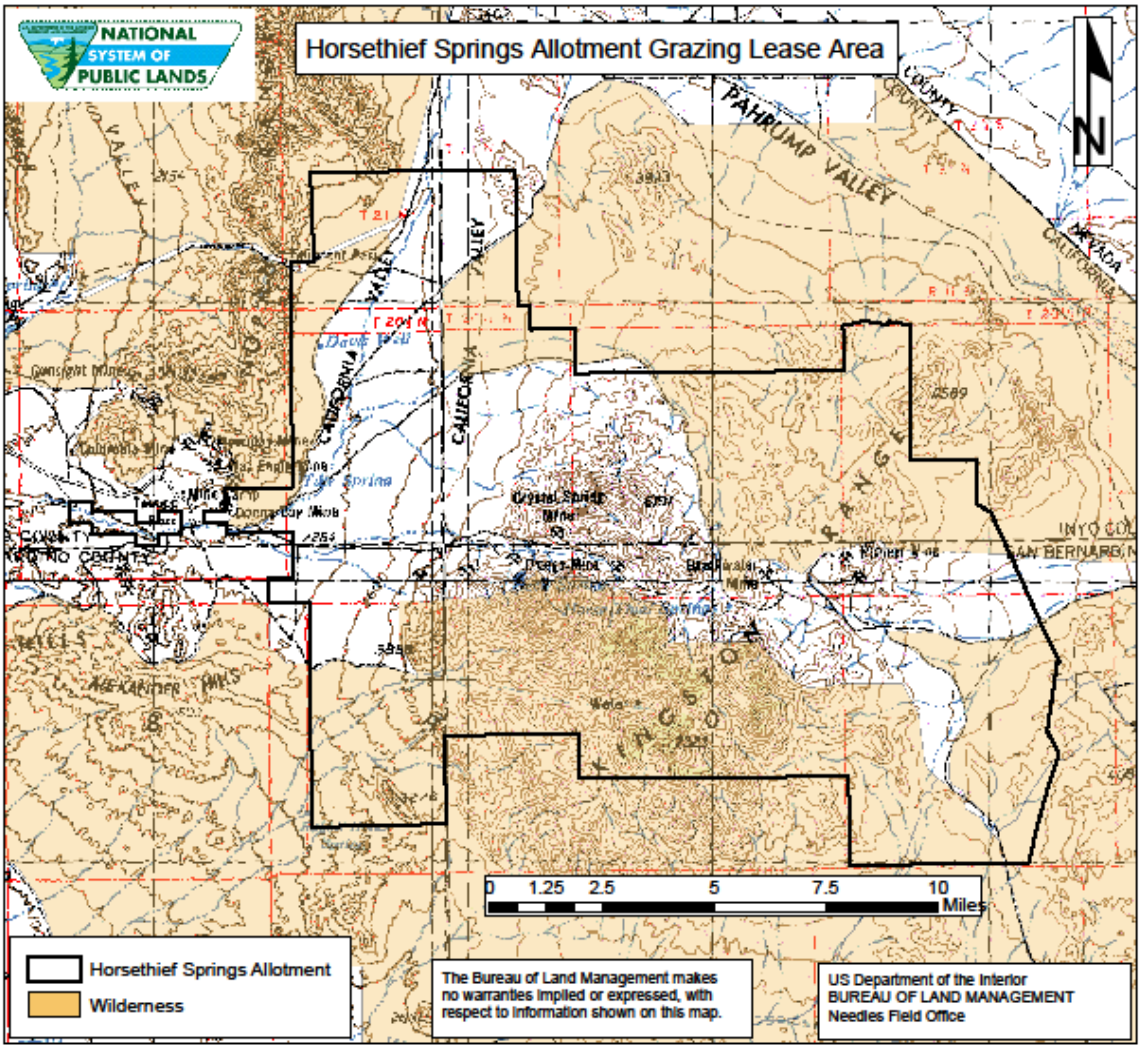
The grazing lease for the Horsethief Springs Allotment would be for a ten-year period and begin with the approval of a new grazing lease. The allotment number for Horsethief is 09007. The grazing lease would allow up to 202 cattle to graze year-long on the allotment, or, allow the harvest of up to 2,424 animal unit months (AUMs). An animal unit is defined as the amount of forage consumed by a mature (1,000-pound) cow or twenty-six pounds of forage dry matter per day (Society for Range Management Glossary). This makes an AUM

equal to 31 days x 26 pounds per day or about 800 pounds of air-dried forage and is expressed in the following table.

Table 2. Horsethief Springs Allotment Grazing lease

Allotment Name	Cattle Number	AUMs	Season of Use	
			From	To
Horsethief Springs	202	2,424	March 1	February 28

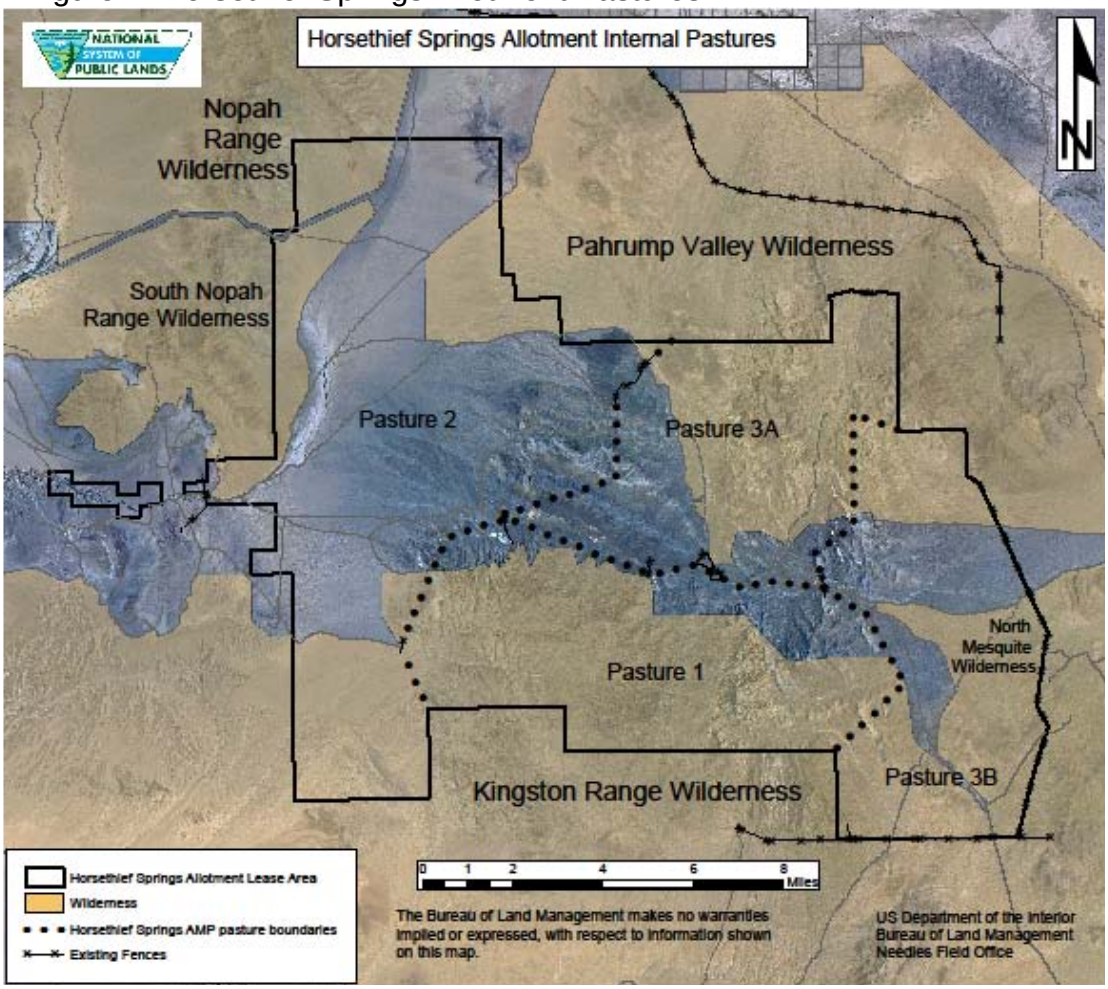
Figure 1. Horsethief Springs Allotment Grazing Lease Area



2. Livestock Management

Under this proposed action, BLM would authorize a yearlong cow-calf grazing operation with a maximum active use of 2,424 AUMs or 202 cows yearlong, and, fully implement the Horsethief Springs Allotment Management Plan (AMP). The AMP was prepared in accordance with CDCA Plan that established direction for writing the AMP. "The purpose of this AMP is to increase forage production to its maximum potential while protecting the rangeland resource through application of range science. Other resource values are not to be adversely affected by livestock grazing. The AMP also provides for planned use by: 1) designating livestock numbers, 2) providing specific pastures, and 3) specifying times of the year for pasture use." The allotment map (Figure 1) shows the grazing lease area and five wilderness areas. The total AUMs were derived from range adjudication information from the mid 1970s and forms the basis of this grazing plan.

Figure 2. Horsethief Springs Allotment Pastures



Recalculated today with ArcGIS data, the Horsethief Springs Allotment contains 108,113 acres of Public land, 4,480 acres of state land and 776 acres of private. Portions of Pahrump Valley, Kingston Range, North Mesquite Mountain, Nopah Range and South Nopah Range Wilderness Areas overlap Horsethief Springs Allotment boundaries as shown in Figure 2 below. These wilderness areas amount to more than 59,438 acres or 52% of the entire allotment. Figure 2 illustrates where these five areas overlap and intersect with the allotment pastures. No areas within the allotment have been designated as critical habitat by the US Fish and Wildlife Service nor are there any Desert Wildlife Management Areas.

The Horsethief Springs Allotment Management Plan designated livestock numbers, individual pastures and specific seasons of use for each pasture with the goal of improving range condition, see Appendix 1, AMP. Information from the range adjudication was used to calculate AUM numbers for each pasture based upon biomass production from key plant species from within each of the major plant communities found on the allotment.

Table 3. AUMs per pasture.

Pasture	AUMs from adjudication	Percent of total AUMs/Pasture
1	103	4%
2	738	30%
3a	391	16%
3b	1192	49%
Totals	**2,424**	**100%**

Using 202 head of cattle, the results from Table 3 were then used to more clearly define use periods for each pasture, and develop a 12-month grazing schedule as shown in Table 4.

Table 4. Livestock grazing schedule.

Years 1, 5 and 9.				Pasture 2 rested all year	
Mar	May	June	June Aug	Aug	Feb
1	**31**	**1 16**	**17 14**	**15**	**28**
Pasture 3b		Pasture 1	Pasture 3a	Pasture 3b	

Years 2, 6 and 10			Pasture 3a rested all year
Mar	Mar Apr	May	Feb
1 16	**17 30**	**1**	**28**
Pasture 1	Pasture 2	Pasture 3b	

Years 3 and 7				Pasture 3a rested all year and Pasture 3b is differed rested April to June	
Mar	Apr	Apr May	May June	July	Feb
1	**28**	**29 14**	**15 30**	**1**	**28**
Pasture 3b		Pasture 1	Pasture 2	Pasture 3b	

Years 4 and 8			Pasture 1 rested all year		
Mar	Aug	Aug Oct	Oct Dec	Dec	Feb
1	**27**	**28 25**	**26 12**	**13**	**28**
Pasture 3b		Pasture 3a	Pasture 2	Pasture 3b	

To achieve AMP goals and be in accordance with CDCA and NEMO, Pastures 1, 2, and 3a would be rested for entire years with Pasture 3b differed-rested (rested for a portion of the growing season). Because forty-nine percent or 1,192 AUMs of the 2,424 AUMs originate in Pasture 3b, 3b is being differed rested between April and June or until post seed ripe. Post seed-ripe grazing allows plants to mature and "shatter" dispersing their seed upon the ground with seed deposition. This is further aided by livestock hoof action that presses seeds into direct contact with the soil . This refined AMP grazing schedule provides yearlong periods of rest for Pastures 1, 2, and 3a and differed-rest for pasture 3b.

Livestock control and movements among the pastures would be achieved by Lessee's use of existing "water-traps" and strategically placed fences. Livestock movements would follow the grazing schedule and may be modified based upon

results of short term monitoring collected during each grazing period within each pasture.

Water-traps as defined in this document, are small corrals with float valve equipped water troughs inside. Water is made available to livestock after they enter water-traps. Gates in water-trap corrals are manipulated by the Lessee to either allow or deny livestock access, closed water trap gates force livestock to move to other locations for their daily supply of water. However there are several water troughs that are not found in corrals like West End, Red Sox and Yankee, where simply turning off the water is sufficient. This technique would be used to move livestock among and within the four pastures of the allotment and be used in conjunction with the limited amount of pasture and allotment boundary fencing. When livestock are scheduled to us a particular pasture, water access would only be made to them when inside that pasture. This works especially well with gregarious breeds of cattle such as Corriente/long horn crosses and other commercial herds. BLM visits revealed that each water trough has been equipped with bird ladders (or similar devices) and float valves to conserve water.

Pasture 3b with forty nine percent of the forage produced in the allotment would be differed rested until post seed ripe, which would also lead to more forage production over time. Upon the Secretary of Interior's approval of the of Public Land Health and Rangeland Guidelines for Grazing Uses for the NEMO Planning Area, a range condition rating of "Fair" in the CDCA Plan would require implementing a NEMO plan amendment mitigation measure that establishes specific utilization levels beyond those shown in the HSA AMP. As data is collected over the following years, the AMP will be tested for desired affects through range monitoring.

3. Existing Range Improvements

The success of this four-pasture rest/differed rest rotation grazing schedule to attain Rangeland Health Standards depends in part on fully operational range improvements necessary to control livestock movements in accordance with the AMP grazing schedule. Maintenance of all range improvements that support livestock grazing would be the responsibility of the grazing leaseholder following re-assignment. All current range improvements are those, which existed when Pahrump Valley, Kingston Mountains, North Mesquite Mountain, Nopah Range and South Nopah Range Wildernesses were designated in 1994. The NEMO plan amendment limited any new improvements to those listed in the AMP. The list of existing range improvements found on the allotment is shown in Table 5.

One range improvement that continues to support livestock grazing is the Mitchell Boundary Fence, range improvement number, 169512, that was built in 1986 when the northern areas of the allotment and beyond were Wilderness

Study Areas 150 and 154. Because most of the northern boundary of the allotment is and remains unfenced, the Mitchell Boundary Fence continues to be needed to control livestock that drift north off the allotment and onto private lands in California and southern Nevada. The road cut commonly known as the Old Traction Road, was used to build this continuous fence due to limited access in that area.

Table 5. Existing Range Improvements.

Range Improvements Entirely within Wilderness		
Number	**Project Name**	**Type**
169636	Talc Corral	Corral
169502	Sandy Valley Drift Fence	Fence
9550	West End Water Trough	Trough
9558	Red Sox Trough	Trough
9559	Yankee Trough	Trough
9566	Talc Water Trough	Trough
12212	Mesquite Trough	Trough
Range Improvements Partially within Wilderness		
8201	Horsethief Springs Pipeline (North & Northeast arms)	Pipeline
12211	Mesquite Pipeline	Pipeline
169497	Adams Drift Fence	Fence
8210	M & M Fence Addition	Fence
169433	Mesquite Drift Fence	Fence
9555	Sandy Valley Drift Fence	Fence
9551	West Sandy Valley Drift Fence	Fence
9270	Tecopah Pass (east) Re-Vegetation Study 2010	Fence
169512	Mitchell Boundary Fence	Fence
Range Improvements Entirely outside Wilderness		
8204	Noon Day Cattle Guard	Cattle Guard
8211	Mitchell Boundary Fence Cattle Guard	Cattle Guard
8212	Horsethief Fence Cattle Guard	Cattle Guard
8213	Half Mile Stretch Fence Cattle Guard	Cattle Guard
8214	Adams Drift Fence Cattle Guard	Cattle Guard
8215	Kingston Drift Fence Cattle Guard	Cattle Guard
9552	West Sandy Valley Cattle Guard	Cattle Guard

169651	Mesquite Mountain Cattle Guard	Cattle Guard
9273	Tecopah Pass East Cattle Guards	Cattle Guards
8206	Quail Corral	Corral
8207	Chaparral Corral	Corral
9548	RR Tie Corral	Corral
169638	Dagger Corral	Corral
169641	South Corral	Corral
169642	Silver Corral	Corral
169495	Noon Day Fences	Fence
169468	Horse Thief Fence	Fence
169496	Fish Canyon Drift Fence	Fence
169499	Half Mile Stretch Fence	Fence
169500	Kingston Drift Fence	Fence
169501	Tecopah Pass Fence	Fence
9266	Horsethief Springs Riparian Exclusion Fence 2010	Fence
9271	Crystal Springs Exclosure Fence 2010	Fence
9272	Wildhorse Springs Exclosure Fences 2010	Fence
169432	Mesquite Mt. Fence	Fence
9430	Crystal Pipeline	Pipeline
9433	Wildhorse Pipeline	Pipeline
169118	Horsethief Springs Pipeline (Realignment)	Pipeline
9561	Quail Water Storage Tank	Tank
9564	Chaparral Water Storage Tank	Tank
9565	RR Tie Water Storage Tank	Tank
TBD	Tecopah Pass (east) Water Storage Tank	Tank
9432	Crystal Water Trough	Trough
9434	Wildhorse Water Trough	Trough
9545	Moqua Creek Water Trough	Trough
9547	Silver Water Trough	Trough
9549	RR Tie Water Trough	Trough
9560	Quail Water Trough	Trough
9562	South Corral Water Trough	Trough
9563	Chaparral Water Trough	Trough
9567	Dagger Water Trough	Trough

4. AMP Proposed Range Improvements

The HSA AMP has considered two range improvements for the allotment. The first was the Chaparral Corral (No. 008207) built around the terminal water trough on the southeastern leg of Horsethief Springs Pipeline as it extends towards the southeast corner of Pasture 3b. The second proposed improvement considered a three-mile pipeline extension northward from Wildhorse Springs within Pasture 2. The Chaparral Corral was constructed, but the Wildhorse Springs pipeline was abandoned due to anticipated difficulty when trenching in the rocky terrain and was deemed unfeasible.

6. Monitoring

Rangeland monitoring (both upland and riparian) on the Horsethief Springs Allotment would continue to be conducted annually and periodically within three categories, short term monitoring, long term monitoring, and rangeland health assessments. There are three key areas within the allotment, one in Pasture 1, one in Pasture 3A, and one in Pasture 3B (see figure 3, next page).

“Key Areas” as used in this evaluation are defined as: “A relatively small portion of a range selected because of its location, use, or grazing value as a monitoring point for grazing use. It is assumed that key areas, if properly selected, will reflect the overall acceptability of current grazing management over the range.“ (Bedell 1998).

Two of the three are within Mojave mixed woody/succulent Scrub and the third is within Mojave creosote bush scrub, the dominant plant community in terms of area. Additional Key Areas would be set up to gather information on other dominant and unrepresented plant communities.

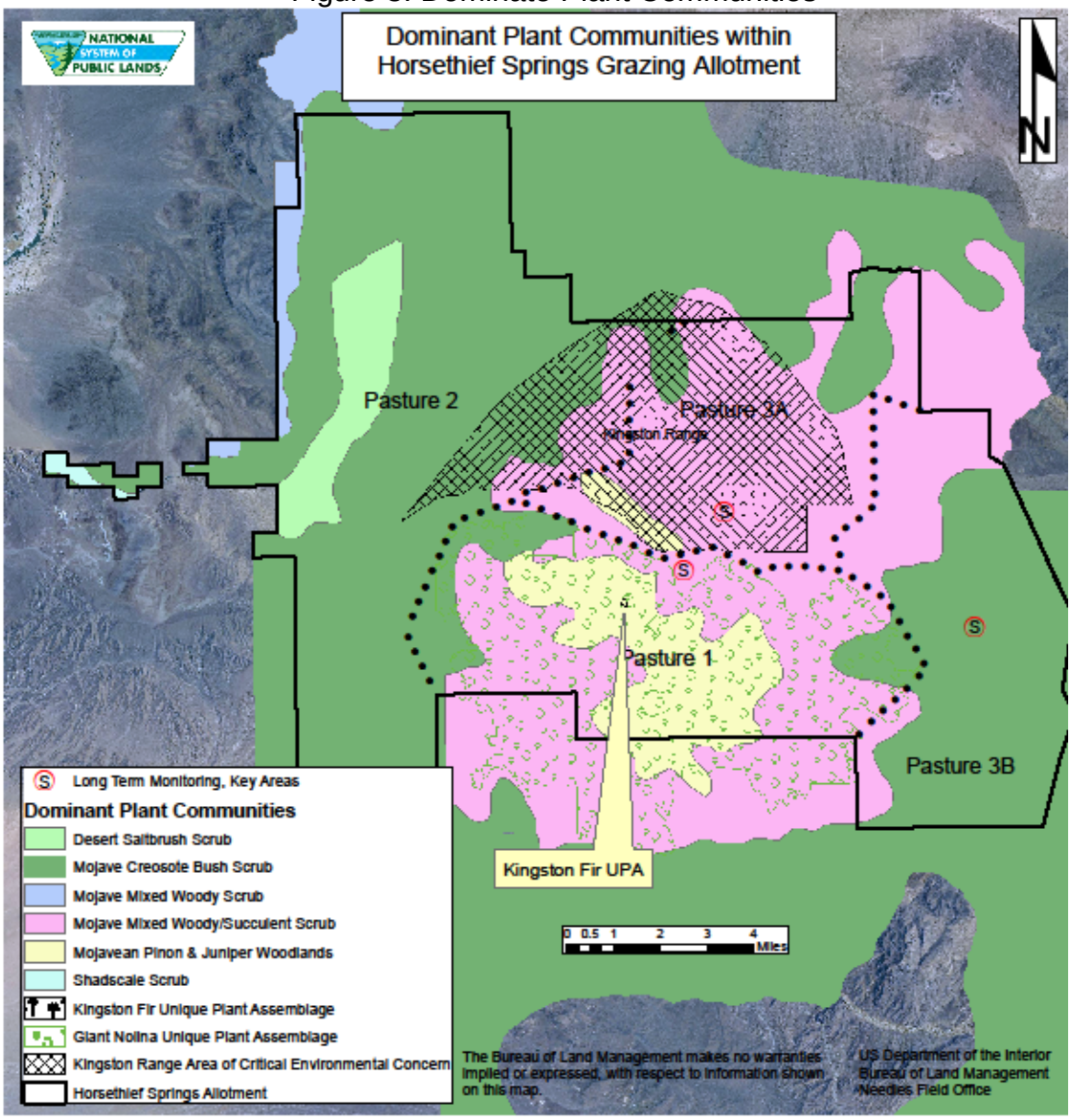
The use of short term monitoring is a tool to gauge the cause and effect of current livestock grazing management. This type of monitoring consists of actual use, current climatic conditions and the collection of utilization data, and be supplemented with additional methods to characterize shrub browse. At a minimum, short-term data would be collected from the three key areas and would be supplemented with data from other locations to obtain data for each plant community within the allotment. Utilization data would be collected from key species at the end of each period of use within each pasture with data collected from plant species such as big galleta grass, desert needlegrass, ephedra, white bursage, spiny hopsage and others. Data collection would correlate with important phenological events of key species, and data would be collected for any other forage species when observed utilized by livestock. Short term monitoring would provide information on effectiveness of the four-pasture rest-rotation grazing plan and limit livestock utilization levels to those outlined in the

terms and conditions of the grazing lease for a Fair rated allotment.

Precipitation within this allotment is highly variable depending on mountain aspect, elevation, slope and weather variables. Therefore, in accordance with HSA AMP rain gauges would be placed in each pasture to monitor precipitation with data collection occurring every three months.

Long term monitoring data is typically collected once every three years with the results used to determine the direction of plant community change and to identify if management actions are meeting the goals of the AMP and to make inferences on the effectiveness of long-term grazing management strategies.

Figure 3. Dominate Plant Communities



Properly Functioning Condition monitoring would be conducted on Horse Thief Creek and all springs sources within the allotment. Pace/Frequency methodology would resume and results compared to twenty years of data from the 70s and 80s. A renewed effort to collect this type of data would be an important goal during the life of the ten-year grazing lease.

The assessment of indicators of rangeland health information is a qualitative and quantitative method that requires formation of an interdisciplinary team who observes and directly measures various ecological indicators to determine the health of rangelands and achievement of fallback or regional standards. This method is considered a long-term process and typically occurs every six to ten years.

The analysis of rangeland monitoring data, including the Rangeland Health Assessment determinations would be used to determine if adjustments in stocking rates are warranted, or if additional management actions are necessary to protect upland and riparian habitats and reduce soil erosion.

7. Rangeland Health Fallback Standards and Guidelines for Livestock grazing.

Until such time as the Standards of Public Land Health and Rangeland Guidelines for Grazing Uses for the NEMO Planning Area are approved by the Secretary of the Interior the following standards and guidelines would apply.

Standards [43 CFR 4180.2(d)(1)]:

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

b. Riparian-wetland areas are in properly functioning condition.

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

d. Healthy, productive and diverse populations of native species exist and are maintained.

Guidelines [43 CFR 4180.2(d)(2)]:

a. Management practices maintain or promote adequate amounts of ground cover to support infiltration, maintain soil moisture storage, and stabilize soils.

b. Management practices maintain or promote soil conditions that support

permeability rates that are appropriate to climate and soils.

c. Management practices maintain or promote sufficient residual vegetation to maintain, improve or restore riparian-wetland, functions of energy dissipation, sediment capture, ground water recharge and stream bank stability.

d. 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.

e. 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.

f. Management practices maintain or promote the physical and biological conditions necessary to sustain native populations and communities.

g. Desired species are being allowed to complete seed dissemination in 1 out of every 3 years (management action will promote the opportunity for seedling establishment when climatic conditions and space allow.

h. Conservation of Federal threatened or endangered, Proposed, Category 1 and 2 candidates, and other special status species is promoted by the restoration and maintenance of their habitats.

i. Native species are emphasized in the support of ecological function.

j. 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.

k. Periods of rest from disturbance or livestock use during times of critical plant 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.).

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

m. Facilities are located away from riparian-wetland areas wherever they conflict with achieving or maintaining riparian-wetland function.

n. 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.

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

8. Regional Standards and Guidelines

The Standards of Public Land Health and Rangeland Guidelines for Grazing Uses for the NEMO Planning Area (NEMO Plan Amendment Record of Decision December 20, 2002) would apply to the grazing lease upon approval by the Secretary of the Interior (43 CFR 4180.2(b). The regional standards and guidelines would replace the current fallback Rangeland Health Fallback Standards and Guidelines (43 CFR 4180.2(d)).

Standards for Public Land Health

a. Soils

Soils exhibit infiltration and permeability rates that are appropriate to soil type, climate, geology, land form, 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:

1. Canopy and ground cover are appropriate for the site.

2. There is diversity of plant species with a variety of root depths.

3. Litter and soil organic matter are present at suitable sites.

4. Microbiotic soil crusts are maintained and in place.

5. Evidence of wind or water erosion does not exceed natural rates for the site.

6. Hydrologic and nutrient functions maintained by permeability of soil and water infiltration are appropriate for precipitation.

b. Native Species

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

1. Photosynthetic and ecological processes continue at levels suitable for the site, season, and precipitation regimes.

2. Plant vigor, nutrient cycle, and energy flow are maintaining desirable plants and ensuring reproduction and recruitment.

3. Plant communities are producing sufficient litter.

4. Age class distribution of plants and animals are sufficient to overcome mortality fluctuations.

5. Distribution and cover of plant species and their habitats allow for reproduction and recovery from localized catastrophic events.

6. Alien and noxious plants and wildlife do not exceed acceptable levels.

7. Appropriate natural disturbances are evident.

8. Populations and their habitats are sufficiently distributed and healthy to prevent the need for new listing as special status species.

c. 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:

1. Vegetative cover would adequately protect banks and dissipate energy during peak water flows.

2. Dominant vegetation is an appropriate mixture of vigorous riparian species.

3. Recruitment of preferred species is adequate to sustain the plant community.

4. Stable soils store and release water slowly.

5. Plant species present indicate soil moisture characteristics are being maintained.

6. There is minimal cover of invader/shallow-rooted species, and they are not displacing deep-rooted native species.

7. Shading of stream courses and water sources for riparian dependent species is maintained.

8. Stream is in balance with water and sediment being supplied by the watershed.

9. Stream channel size and meander are appropriate for soils, geology, and landscape.

10. Adequate organic matter (litter and standing dead plant material) is present to protect the site and to replenish soil nutrients through decomposition.

d. 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:

1. The following do not exceed the applicable requirements: chemical constituents, water temperature, nutrient loads, fecal coliform, turbidity, suspended sediment, and dissolved oxygen.

2. Standards are achieved for riparian, wetlands, and water bodies.

3. Aquatic organisms and plants (e.g., macro-invertebrates, fish, algae, and plants) indicate support for beneficial uses.

4. Monitoring results or other data that show water quality is meeting the standard. For surface waters, the primary objectives are to (A) maintain the existing quality and beneficial uses of water, (B) protect waters where they are threatened (and livestock grazing activities are a contributing factor), and (C) restore waters where they are currently degraded (and livestock grazing activities are a contributing factor). Of particular importance are areas:

A. Where beneficial uses of water bodies have been listed as threatened or impaired pursuant to Section 303(d) of the Federal Clean Water Act

B. Where aquatic habitat is present or has been present for federal threatened or endangered, candidate, and other special status species dependent on water resources.

C. In designated water resource sensitive areas such as riparian and wetland areas.

Regional Grazing Guidelines

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

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

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

4. Salt/mineral blocks would be located a sufficient distance away from wetland systems so they do not conflict with maintaining riparian wetland functions.

5. Management practices would 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 land form.

6. Grazing management practices would meet state and federal water quality standards. Impoundments (stock ponds) having a sustained discharge yield of less than 200 gallons per day to surface or groundwater are excepted from meeting California drinking water standards per California State Water Resources Control Board Resolution Number 88-

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

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

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

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

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

12. Habitats would be restored, maintained, or enhanced to assist in the recovery of federally listed threatened and endangered species. Habitats of special status species including federally proposed, federal candidates, BLM sensitive, or California threatened or endangered species, would be restored, maintained or enhanced to promote their conservation.

13. Grazing activities would support biological diversity across the landscape, and native species and microbiotic crusts are to be maintained.

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

15. Livestock utilization limits of key perennial species would be as shown in Table 6 for the various range types.

Table 6. Proposed Plan Grazing Guidelines for Range Types

Range Type	Percent Use of Key Perennial Species	
	Poor – Fair Range Condition or Growing Season*	Good - Excellent Range Condition or Dormant Season*
Mojave/Sonoran Desert Scrub	25	40
Salt Desert Shrubland	25	35
Semi-desert Grass and Shrubland	30	40
Sagebrush Grassland	30	40
Mountain Shrub land	30	40
Pinyon-Juniper Woodland	30	40
* Rangeland in good condition or grazed during the dormant season can withstand the higher utilization level. Rangelands in poor condition or grazed during the active growth season would receive lower utilization levels.		

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16. Monitoring of grazing allotments resource conditions would be routinely assessed to determine if Public Land Health Standards are being met. In those areas not meeting one of more standards, monitoring processes would be established (where none exist) to monitor indicators of health until the standard or resource objective has been attained. Livestock trail networks, grazed plants, livestock facilities, and animal waste are expected impacts in all grazing allotments and would be considered during analysis of the assessment and monitoring process. Activity plans for other uses or resources that overlap an allotment could have prescribed resource objectives that may further constrain grazing activities (e.g., ACEC). In an area where a standard has not been met, the results from monitoring changes to grazing management required to meet standards would be reviewed annually. During the final phase of the assessment process, the Range Determination includes the schedule for the next assessment of resource conditions. To attain standards and resource objectives, the best science would be used to determine appropriate grazing management actions. Cooperative funding and assistance from other agencies, individuals, and groups would be sought to collect prescribed monitoring data for indicators of each standard.

9. NEMO Plan Amendment - Cattle Grazing Stipulations in Northern and Eastern Mojave Desert Tortoise Habitat

a. Allotments rated in good or excellent condition would not exceed 40 percent utilization and allotments rated in poor or fair conditions would not exceed 30 percent utilization. The CDCA plan designated range condition on all allotments. Utilization of key perennial forage species would not exceed 40 percent from February 15 to October 14 in the Crescent Peak, Jean Lake, Piute Valley, and Valley View Allotments and 30 percent from February 15 to October 14 in Clark Mountain, Horsethief Springs, Pahrump, and Valley Wells Allotments. No averaging of utilization data among perennial forage species or key areas would occur. When utilization approaches authorized limits in any key area, steps would be taken to redistribute or reduce cattle use for that key area. Monitoring of perennial vegetation such as utilization and trend would occur with methods detailed and prescribed in BLM manuals, handbooks, and plans. Grazing use would be managed to improve trends for native perennial and annual plants where site potential permits. Galleta grass would be a key forage species where it is found.

b. Cattle would be evenly dispersed throughout their area of use, and herding would be limited to shipping and animal husbandry practices. Grazing use would be managed according to grazing regulations, allotment management plans, CDCA Plan, and the current biological opinion. Feeding of roughage, such as hay, hay cubes, or grains to supplement forage quantity is prohibited. Grazing use would be curtailed to protect perennial plants during severe or prolonged drought. The steps may include removal of cattle or, where feasible, turning off water at troughs (especially when livestock are not present) to reduce adjacent grazing use.

c. All cattle carcasses found within 300 feet of any road would be removed and disposed of in an appropriate manner, and no prior notification to the BLM would be necessary if off-road vehicle use is required, but permission from the authorized officer would be required to remove livestock within wilderness.

d. The authorization to use temporary, non-renewable perennial forage above permitted grazing use would be authorized for no longer than three-month increments in non-DWMA desert tortoise habitat.

e. Authorization for ephemeral forage (annual grasses and forbs) in non-DWMA desert tortoise habitat would occur when 230 pounds or more by

air-dry weight per acre of ephemeral forage is available. Ephemeral production data would be collected when necessary if requests are made for ephemeral grazing use. Any cattle authorized to use ephemeral forage would be removed whenever threshold for curtailing ephemeral grazing is reached.

f. Construction and maintenance of range improvements in desert tortoise habitat are limited to existing and proposed facilities listed in this plan and as detailed in Biological Opinions 1-6-92-F-19 and 1-8-94-F-17. All proposed range improvements would receive NEPA and FWS review as needed. For all construction, operation, and maintenance of range improvements involving land disturbance in desert tortoise habitat the following requirements would apply:

g. Surface disturbance during construction of range improvements would occur on previously disturbed sites and disturbing soil in habitat would be minimized whenever possible. Routine vehicle use would be limited to existing roads and disturbed areas, and off-the-road vehicle activity would be held to a minimum. Construction of new roads shall be minimized. Construction of new or replacement facilities would be carried out only from October 15 to March 15, unless specifically authorized because of safety or emergency considerations. After completion of a project, the disturbed soil would be blended and contoured into the surrounding soil surface. To reduce attraction of desert tortoise predators, debris and trash from construction or maintenance of a facility would be removed immediately.

h. Range improvement construction, operation, and maintenance would be modified as necessary to avoid direct impacts to the desert tortoise and their burrows e.g. construction of fences or pipelines near tortoise burrows would be avoided. All proposed range improvement projects would be designed and flagged to avoid impacts to tortoises and their burrows. A qualified biologist would conduct pre-construction desert tortoise surveys of proposed project sites. Existing access and areas of disturbance would be utilized when trenching a section of new pipe or during performance of maintenance. Hazards to the desert tortoises created by construction, such as auger holes and trenches, would be monitored by biological monitor at least twice daily for desert tortoises that become trapped. These hazards will be eliminated before workers leave the site.

i. Prior to ground-disturbing activities, a field contact representative (FCR) will be designated to ensure compliance with protective measure stipulations for the desert tortoise and would be responsible for coordinating with the U.S. Fish and Wildlife Service. A FCR would have

the authority and responsibility to halt activities in violation of FWS stipulations.

j. Only authorized personnel would be permitted to handle desert tortoises. If construction or maintenance of range improvements endangers the life of a desert tortoise then authorized persons may move the animal a short distance away or hold the animal overnight to release it in the same area the next day.

k. All construction and maintenance workers would strictly limit their activities and vehicles to areas flagged or cleared by persons authorized by Service. When off-road use with equipment is required, the Lessee is to notify BLM at least two working days prior to construction or maintenance of a facility.

10. Biological Opinion for the California Desert Conservation Area Plan [Desert tortoise] (6840 CA930(B0) (1-8-04-F-43R))

a. To reduce attraction of desert tortoise predators, debris and trash from maintenance of a facility would be contained and removed immediately.

b. The Lessee would notify BLM prior to any surface-disturbing activities.

c. Handling of the desert tortoise by the Lessee is prohibited.

d. By signing the lease, the Lessee would acknowledge receipt of provided information on the desert tortoise and its conservation, its status, the protection it receives under ESA, and the actions that should be taken to avoid killing or injuring desert tortoises when working in the desert.

e. The Lessee is required to notify BLM immediately upon any instance of "take" (defined by ESA Section 3(18) as "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in any such conduct); "harass" includes disruption of breeding, feeding, or sheltering of a desert tortoise.

f. The Lessee must contact BLM immediately if a desert tortoise is injured or killed by grazing-related activity. Grazing may continue pending a review of the incident by BLM and USFWS provided all other stipulations of the lease have been followed.

g. All existing cattle guards will be modified to prevent entrapment of desert tortoises. New cattle guards will be designed to prevent entrapment.

11. Other Management

Grazing

a. All livestock grazing will be in accordance with the Horsethief Springs Allotment Management Plan.

b. If the objectives of the HSA AMP are not obtained or showing improvement towards the intended goals, then livestock grazing management on the allotment would be re-evaluated earlier than ten years.

c. Maintenance of assigned range improvements is the responsibility of the Lessee. The NFO BLM would be notified by the lessee 14-days prior to any surface disturbing activities

b. Submission of actual use reports would be required on or before March 15 yearly. Actual use reports would be required to provide detailed periods of use, pasture locations and actual livestock numbers.

d. During prolonged drought, the BLM would require the Lessee to reduce livestock stocking rates,

e. The BLM may require the Lessee to modify HSA AMP grazing schedule so as to allow seed germination, seedling establishment, and reproduction of native plant species.

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

h. Salt or mineral supplements would not be place closer than ¼ mile from any natural water source such wetlands, riparian areas, and springs.

k. When utilization levels of 25% are met or exceeded, the Lessee will be required to remove livestock from key areas.

When livestock are scheduled to use a particular pasture in accordance with the grazing schedule and the maximum utilization levels are reached, then the entire grazing schedule would be moved up temporally. If utilization levels in all pastures are reached early for the grazing year, then

all livestock would be removed from the allotment until the next grazing year.

Exclosures Close to Livestock

a. All areas within Horse Thief, Crystal and Wildhorse Springs riparian area exclosures and Tecopah Pass (east) vegetation exclosure would be closed to livestock grazing.

b. Should livestock be found within these exclosures, the Lessee would be required to immediately remove the livestock, notify the NFO rangeland management specialist and repair or restore the exclosure to preclude future access.

c. Recurring unauthorized use would be subject to 43 CFR 4150.1 administrative remedies.

Motorized or mechanized vehicles and/or equipment in wilderness

a. The Lessee and his agents would be issued specific authorization for the use of motorized or mechanized vehicles and/or equipment in wilderness. The Lessee would be required to carry a copy of the access authorization letter when using motorized or mechanized vehicles or equipment within wilderness to complete repair and maintenance activities. All motorized vehicle travel would be restricted to routes that existed prior to the passage of the California Desert Protection Act (CDPA). Use of routes that have been restored would not be permitted except in cases of emergency.

b. Motorized vehicles shall only be used when activities cannot be reasonably and practically be accomplished on horseback or foot. The Lessee and his agents would be encouraged to make every effort to avoid traveling along the routes during periods of inclement weather.

c. Motorized and/or mechanized vehicles would be limited to no larger than a pickup truck and trailer. Any vehicle larger would require prior written approval by the authorized officer.

d. The Lessee and his agents would be required to make every effort to access wilderness during periods when impacts to wilderness visitors would be at a minimum.

e. The Lessee and his agents would be responsible for keeping gates locked when not in actual use.

f. The Lessee and his agents would be responsible for all maintenance necessary for continued use of authorized routes. Motorized/mechanized vehicles/equipment would not be used for routine road maintenance. Routine maintenance would be defined as that maintenance which can be completed by one to four individuals using hand tools (such as shovels, Pulaskis, McClouds). Maintenance requiring the use of motorized or mechanized vehicles and equipment would require prior written approval by the authorized officer and would be evaluated under a separate site-specific NEPA compliance.

g. Upon completion of activities, the Lessee and his agents would be responsible for:

1. Obscuring vehicle tracks visible from the wilderness boundary up to 100 feet upon exiting from the wilderness (a broom would be carried specifically for this purpose).

2. Reporting any needed or completed repairs on the gate, barriers or fences;

3. Reporting any needed or completed route maintenance; and

4. Removing all effects of repair and maintenance activities, such as equipment, tools, supplies, trash.

5. Vehicle speeds would not exceed 30 miles per hour

6. If in an emergency, it becomes necessary to use motorized and/or mechanized vehicles and/or equipment on a route that has been previously restored to a natural appearance, the Lessee would be required to notify the NFO as soon as possible after the emergency access occurs and would be responsible for returning the route to its pre-emergency condition.

7. At the end of each grazing year, the Lessee would be required to submit a wilderness access log report (Appendix x) with their actual use grazing report.

Cultural Resources

a. An exclosure fence has been constructed and would maintained by the BLM around archaeological site CA-SBR-2652. Fencing would protect existing cultural resources from being impacted as a consequence of

cattle grazing activities. Monitoring for effectiveness would be required.

Solid and Hazardous Materials

a. The Lessee would comply with solid and hazardous material-related Federal, State, and local Environmental Regulations and directions. Hazardous materials with a potential to spill would be required to be stored in secondary containment, and spill media would be on-hand to immediately remediate a spill. The Lessee would report, immediately, to the Federal Interagency Communications Center (FICC) at (909) 383-5652, releases of any material not authorized (such as waste oil). An initial written report would be provided to the authorized officer within 24 hours of an incident's discovery.

b. Equipment would be inspected daily to ensure that there are no discharges. Equipment maintenance activities would not be conducted on the allotment. Appropriate spill containment material would be kept on site. All fuels and other materials used would be contained within the equipment or stored in appropriate containers. All materials would be removed from the allotment upon completion of construction activities.

No Action Alternative

Under this alternative, the Horsethief Springs grazing lease would continue under the existing terms and conditions pursuant to Public Law 106-113 until February 28, 2014 at which time it would expire with no action, or the grazing lease could be reconsidered for renewal.

No Grazing Alternative

This alternative would not authorize grazing and would initiate a process in accordance with the 43 CFR 4100 regulations to eliminate grazing and make the allotment unavailable for grazing.

If the Lessee submits a request for voluntary relinquishment of the lease for this allotment at any time during the life of the lease, BLM would review the analysis contained in this EA for purposes of determining whether to accept such request. As the NEMO plan amendment does not provide for relinquishment of the Horsethief Springs Allotment, a plan amendment would be required for designating the allotment as unavailable for livestock grazing.

Chapter 3. Environmental Analysis

A. Prologue

This chapter addresses, by affected resource, the affected environment, environmental consequences, and consultation section of the EA for twenty (20) resource elements. These elements include the standard critical elements of the human environment (H-1790-1, appendix 5, BLM NEPA handbook, as amended) and several other resource elements commonly affected by livestock grazing. Elements that are not present and will not be further analyzed include, Farmlands, Prime or Unique*, Floodplains*, Wild and Scenic Rivers*, and Wild Horse and Burros

B. Elements:

Air Quality*
Areas of Critical Environmental Concern *
Cultural Resources
Environmental Justice*
Livestock Grazing
Native American Concerns*
Paleontology
Socioeconomics
Soils
Threatened or Endangered Species*
Vegetation/Invasive, Non-native Species*
Hazardous and Solid Wastes*
Recreation*
Surface and Ground Water Quality *
Wetlands/Riparian Zones*
Wilderness*
Wildlife

*, indicates Critical Elements of the Human Environment

Air Quality

Affected Environment

The Mohave Desert Air Quality Management District (MDAQMD) has state air quality jurisdiction over the area associated with the proposed action. The MDAQMD has rules that apply to this project along with permitting requirements. Much of the time, air quality throughout the project area is generally good. There are, however, times that the area does not meet air quality standards due to locally generated and/or wind transported pollutants. The area within the Horsethief Springs Allotment is currently classified as a federal non-attainment area for ozone and PM-10 under national

standards. The area is within the Mojave Desert PM-10 Planning Area and the South East Desert Ozone non-attainment area. The State Implementation Plan (SIP) identifies sources of PM-10 emissions and control measures to reduce emissions. The SIP emphasizes controls and management.

Environmental Consequences

A. Impacts of Proposed Action

Soil disturbance from grazing livestock when soil moisture levels are low would result in increased fugitive dust emissions (PM10) from the allotment. This is particularly true on clayey and loamy soils but less so on sandy or gravelly soils due to soil texture. Vehicles use by the Lessee on non paved roads in association with livestock operations, also would generate would generate small additional amounts of PM10 emissions and various precursor emissions for ozone.

However, the overall effect on air quality would be slight due to the presence of livestock in only one pasture during any one grazing year which limits visits to just that pasture. Occasionally, livestock will be concentrated in corrals or temporary holding areas for short periods when livestock are moved between pastures, during animal husbandry practices and when moved off the allotment. Emissions would be higher during this time but would not likely exceed standards. Excluding any future maintenance of range improvements, PM-10 and ozone emissions within the allotment would be deminimous and no further conformity determination is required. No new range improvements are being proposed nor would they be approved in accordance with NEMP and the HSA AMP.

B. Impacts of No Action (Current Management)

Vehicular activity associate with animal husbandry under the No Action would increase because all areas within the allotment would have to be visited every time the Lessee and BLM conduction use supervision.

C. Impacts of No Grazing

Air Quality on the allotment would improve slightly without the presence of grazing livestock and allotment visitation by the Lessee and BLM. Without grazing livestock on the allotment livestock grazing use supervison would no longer occur.

Areas of Critical Environmental Concern

Affected Environment

The Kingston Range Natural Area, Area of Critical Environmental Concern (ACEC) was designated through the CDCA Plan in 1980. The BLM established the 19,620-acre Kingston Range ACEC east of Tecopah, California, to protect unique scenic, floral and faunal values. All of the land mass comprising the Kingston Range Natural Area ACEC is within the higher elevations of the allotment; with 7,698 acres within the Pahrump Valley Wilderness. The ACEC includes portions of Pastures 1, 2 and 3a. Specific natural resource values in this ACEC include desert bighorn sheep (*Ovis canadensis*), giant nolina (*Nolina parryi*), and a relic white fir (*Abies concolor*) stand.

Significant cultural resources include habitation sites with midden, food processing sites and ground stone artifacts indicating processing of piñon. These sites appear to date to the Elko Period (ca. 5000-3500 B.P.) and some of the sites are multi-component with a late prehistoric occupation evidenced by ceramic remains.

Environmental Consequences

Impacts of Proposed Action.

The Kingston Range ACEC management plan allows for livestock use of the area. Implementation of the HSA AMP, biological opinion mitigation, proposed terms and conditions, Standards and Guidelines and forage utilization levels establish guidelines on how and when areas within the HSA are grazed and the levels of utilization that can occur. These figures are further broken down depending upon the plant species and biological opinion stipulations, along with grazing strategies that require proper cattle distribution and periodic rest of each pasture during the critical growing season. Full implementation of the Kingston Range ACEC management plan, which also incorporates the HSA AMP, would aid in sustaining native plant communities and reducing the impacts associated with cattle grazing in the ACEC.

No specific impacts are anticipated at identified significant sites (eligible for inclusion in the National Register of Historic Places) that contribute to the values associated with the ACEC, although grazing impacts would be anticipated at any gathering locations (e.g. corrals, water troughs, salting areas) that are co-located or located in proximity to these important resources. These impacts would include displacement, breakage or burial of artifacts and disturbance of features such as trails.

Impacts of No Action (Current Management).

The Kingston Range ACEC would continue to be impacted at current levels.

The same impacts as the proposed alternative.

Cultural Resources

Affected Environment

In the late 1970s BLM archaeologists and contractors conducted extensive Class I cultural resource surveys (records search and literature reviews) and Class II cultural resource pedestrian surveys (intuitive and random sample) within the eastern Mojave Desert. The Class I and II surveys provided the BLM with a large data base for analysis of extant cultural resources within the boundaries of the California Desert District. The results of the eastern Mojave Desert records and literature surveys and archaeological field surveys were reported within a series of BLM archaeological and historic resource publications prepared by Gallegos et al. (1980); King, Casebier et al. (1981); Hall (1981); Warren et al. (1981); Rector (1981). The areas surveyed included the Horsethief Springs grazing allotment. These surveys provide the BLM with a significant historic and archaeological data base for cultural resource studies within the eastern Mojave Desert. Based on the above cultural surveys, the density and location of historic and prehistoric archaeological sites may be predicted (e.g., presence/absence of water sources; naturally occurring lithic or stone materials for tool and weapons manufacture; floral and faunal resources available for subsistence [food, medicines, ceremonies, and shelter]; historic period roads, minerals, and other resources).

The acreage of public lands within the Horsethief Springs grazing allotment is 108,113. Numerous range improvements (e.g., ground disturbing activities such as drift fences, allotment boundary fences, cattle guards, two abandoned well casings, water tanks, water troughs, developed spring sites, water pipelines, corrals, etc.) have been constructed on the subject range allotment (see list of individual range improvements constructed on the allotment above). Approximately 2½% of the public lands within the boundaries of the grazing allotment have been surveyed for cultural resources. Less than half of the range improvements have been surveyed for cultural resources by federal, private consultants, and vocational archaeologists within the past fifty (50) or sixty (60) years. These surveys include eight (8) 1 mile x 1/8 mile survey blocks conducted as part of the 1978-80 Class II survey of the eastern Mojave Desert, one linear utility electrical transmission corridor survey, and several linear pipeline surveys, and 5 acre or less pedestrian surveys for recreational, mining, range, and land actions.

The Kingston Range ACEC is located within the Horsethief Springs grazing allotment. This 19,620 acres , designated in the California Desert Conservation Area Plan of 1980, was intended to protect wildlife, floral and scenic values present within the designated ACEC boundaries. In addition to the Kingston Range ACEC, five Wilderness areas are also partially located within grazing allotment boundaries. the Kingston Range Wilderness (36,724 acres), Nopah Range Wilderness (7,680 acres), North Mesquite Mountains Wilderness (32,209 acres), Pahrump Valley Wilderness (40,240 acres), and

South Nopah Range Wilderness (3,200 acres). Significant cultural resources known to occur within the ACEC include habitation sites with midden, food processing sites and ground stone artifacts indicating processing of piñon. These sites appear to date to the Elko Period (ca. 5000-3500 B.P.) and some of the sites are multi-component with a late prehistoric occupation evidenced by ceramic remains.

Prehistoric and historic Native American populations, 19th Century EuroAmerican explorers, emigrants, ranchers, miners and homesteaders have lived and/or traveled through the regions occupied by the Horsethief Spring allotment, exploiting the abundant natural resources (e.g., plant, animal, and mineral) present. The region which comprises the grazing allotment is an area of high sensitivity to Native American values (ca. 1989, Management Plan for Kingston Range Natural Area, an Area of Critical Environmental Concern, Barstow Resource Area, Bureau of Land Management). Site types known to be present within the boundaries of the grazing allotment include prehistoric trails, habitation sites, lithic reduction and tool manufacture sites, resource procurement sites, rock rings/alignments, rock shelters, rock art, traditional ritual sites, historic era mines, emigrant trails, historic roads, ranching facilities, and habitation sites. While a number of recorded archaeological sites located within the allotment are considered eligible for inclusion on the National Register of Historic Places (NRHP), no sites within the allotment have been formally nominated or listed on the NRHP. All sites without formal determinations of eligibility for inclusion on the NRHP are presumed eligible for planning purposes. Current site condition and trends are unknown. An intensive archaeological survey of existing locations where cattle congregate within the grazing allotment was completed by the BLM in May, 2007.

Fifty-nine (59) prehistoric and historic archaeological sites have been identified and formally recorded within the overall Horsethief Springs grazing allotment. Type sites are identified and characterized below, Table 7. Geographic locations (e.g., Mountain, Valley, Transition Zone, or Spring) where prehistoric and historic resources have been recorded within the grazing allotment are identified and characterized in Table 8.

Table 7: Cultural Resources Information:

SITE NUMBER	TYPE SITE	LOCATION	CATTLE DISTURBANCE
CA-SBR-2370	Rock Alignment	Transitional Zone	None Recorded
CA-SBR-2373	Trail	Transitional Zone	None Recorded
CA-SBR-2652	Large Multi-Component Campsite (rock shelter 200 yards east)	Transitional Zone	Range Improvements (water tanks, water pipes, road, cattle corral, etc.)
CA-SBR-3069	Historic Road	Valley	None Recorded
CA-SBR-4599	Campsite	Transitional Zone	None Recorded
CA-SBR-4600	Lithic Scatter	Transitional Zone	None Recorded
CA-SBR-4601	Lithic Scatter	Valley	None Recorded
CA-SBR-4602	Sleeping Circle (rock alignment or habitation)	Transitional Zone	None Recorded

SITE NUMBER	TYPE SITE	LOCATION	CATTLE DISTURBANCE
CA-SBR-4603	Roasting Cairn	Transitional Zone	None Recorded.
CA-SBR-4604	Campsite	Transitional Zone	None Recorded
CA-SBR-4605	Campsite	Spring	None Recorded
CA-SBR-4608	Lithic Scatter	Transitional Zone	None Recorded
CA-SBR-4609	Campsite	Transitional Zone	None Recorded
CA-SBR-4610	Sleeping Circles (rock alignment or habitation)	Transitional Zone	None Recorded
CA-SBR-4611	Lithic Scatter	Valley	None Recorded
CA-SBR-4612	Groundstone	Transitional Zone	None Recorded
CA-SBR-4613/H	Lithic Scatter	Transitional Zone	None Recorded
CA-SBR-4617	Lithic	Transitional Zone	None Recorded
CA-SBR-4618	Pictographs	Spring	None Recorded.
CA-SBR-4619	Pictographs	Spring	None Recorded. Trail by site.
CA-SBR-4620	Possible Rock Shelter	Transitional Zone	None Recorded
CA-SBR-4622	Temporary Campsite and Lithic Scatter	Mountain	None Recorded. Trail by site.
CA-SBR-4621	Lithic Scatter (6 small thinning flakes, 1tool frag)	Transitional Zone	None Recorded.
CA-SBR-4623	Temporary Campsite	Mountain	None Recorded.
CA-SBR-4624	Temporary Campsite	Transitional Zone	None Recorded.
CA-SBR-4625	Temporary Campsite	Transitional Zone	None Recorded.
CA-SBR-4626	Possible Roasting Pits	Transitional Zone	None Recorded.
CA-SBR-4628	Temporary Campsite	Mountain	None Recorded
CA-SBR-4629	Sparse Lithic Scatter	Mountain	None Recorded.
CA-SBR-4630	Temp. campsite (Destroyed by mining)	Transitional Zone	None Recorded.
CA-SBR-4631	Temporary Campsite w/sparse groundstone	Transitional Zone	None Recorded
CA-SBR-4632	Poss. Temp. Campsite w/sparse groundstone	Mountain	None Recorded.
CA-SBR-4633	Temporary campsite	Transitional Zone	None Recorded.
CA-SBR-4634	Lithic Scatter	Valley	None Recorded
CA-SBR-4635	Ceramic Pot Break (“Mud ware”)	Transitional Zone	None Recorded.
CA-SBR-4636	Sparse Lithic Scatter	Transitional Zone	None Recorded.
CA-SBR-4599	Temporary Campsite	Transitional Zone	None Recorded.
CA-SBR-4637	Temporary Campsite. (Impacted by Mining Ops)	Transitional Zone	None Recorded.
CA-SBR-2653	Sparse Scatter	Transitional Zone	None Recorded.
CA-SBR-2676	Rock Shelter	Transitional Zone	None Recorded.

SITE NUMBER	TYPE SITE	LOCATION	CATTLE DISTURBANCE
CA-SBR-2653	Sparse Surface Scatter	Transitional Zone	None Recorded.
CA-SBR-2843H	Historic Road	Valley	None Recorded.
CA-SBR-9348H	Historic Mining Camp	Transitional Zone	None Recorded.
CA-Iny-1446	Temporary Campsite	Transitional Zone	None Recorded
SBCM-413/H	Temporary Campsite/-Homestead	Spring	None Recorded.
CA-Iny-2872	Lithic Scatter	Valley	None Recorded.
CA-SBR-2958/H	Campsite	Transitional Zone	None Recorded
CA-Iny-2322/H	Campsite	Mountain	None Recorded.
CA-Iny-1450	Lithic Scatter	Transitional Zone	None Recorded.
SBCM-1376	Temporary Campsite	Transitional Zone	None Recorded
CA-SBR-4272	Historic Emigrant Trail	.Valley	None Recorded
CA-SBR-4627	Temporary Campsite	Mountain	None Recorded
CA-SBR-4652	Temporary Campsite	Valley	None Recorded
CA-SBR-376	Temporary Campsite	Transitional Zone	None Recorded
CA-SBR-734	Temporary Campsite	Transitional Zone	None Recorded
Pending Historic Mining Site	Mine	Mountain	None Recorded
Pending Historic Mining Site	Mine	Mountain	None Recorded
Pending Historic Mining Site	Mine	Mountain	None Recorded
Pending Historic Mine Site	Mine	Transitional Zone	None Recorded

Table 8 below lists geographic locations (e.g., Mountain, Valley, Transition Zone, or Spring) where prehistoric and historic resources have been recorded within the Horsethief Springs Allotment:

Table 8. Horsethief Springs Allotment Archaeological Sites By Location:

Type Site	Mountain	Valley	Transition Zone	Spring
Prehistoric				
Lithic Scatter	1	4	9	
Rock Art				2
Roasting Pit/Groundstone			3	
Campsite/Rock Shelter	6	1	19	1
Pottery Scatter			1	
Rock Alignment/Cairn			1	
Trails			1	
Historic				
Mining	3		2	

Transportation route		(3)	(3)	
Multi-component				
Prehistoric Campsite/Historic Ranch			1	1

As Table 8, documents, the majority of the prehistoric sites (predominantly lithic scatters, habitation and food procurement) are located within the Transition Zone. Linear transportation sites (e.g., historic roads and emigrant trails) and electrical transmission lines traverse the valleys, transitional zones, and mountains. Of the 59 archaeological sites recorded within the boundaries of the Horsethief Spring grazing allotment, forty-one, or 69%, are located within the Transitional Zone (i.e., upper bajadas, lower mountain slopes, canyons, and/or in proximity to springs). An additional eight (8), or 13% of the recorded sites, are located within alluvial valley floors. Sites found in the valleys include prehistoric lithic sites and temporary campsites (5), and three historic transportation routes (3). Ten (10) archaeological sites, or 16%, are located on hill sides, mountain slopes and ridges. Three of the sites located in the mountains are historic mining sites; the remaining five sites are prehistoric. The archaeological records and literature search indicated that one multi-component site (prehistoric and historic loci within the site boundaries), had been impacted by cattle grazing and rangeland improvement facilities.

2. Environmental Consequences

Impacts of Proposed Action

Soil hardness, moisture, and vegetation cover are factors that influence the level and types of impacts attributable to cattle grazing activities. Erosion is a secondary impact resulting from grazing that can also have impact cultural sites. In zones where livestock are more dispersed, such as upland locations away from water sources, impacts would be restricted to surface displacement and anticipated to be minimal and would not impair site eligibility. In rock areas and zones that lack plants grazed by livestock, minimal impacts to cultural resources are likely to occur (ASPPN 1990; Roney 1977).

Although cattle use on the allotment is generally dispersed, cattle may congregate near springs, water sources and other facilities (e.g., wells, tanks, troughs, and corrals) where cultural resources are known to occur. Potential impacts to cultural resources (e.g., artifact damage, artifact displacement, loss of site integrity and soil erosion) will be highest in these congregation areas where range improvement projects have been constructed and lowest in open range areas. Consequently, livestock grazing has the potential to impact important cultural resources within a grazing allotment, particularly at developed springs, corrals, water troughs, and mineral suppliment locations where archaeological sites and grazing activities may co-occur.

One archaeological site, CA-SBR-2652, has documented impacts due to grazing and

construction of range improvement facilities. The archaeological record indicates that one site, CA-SBR-2652, a large multi-component prehistoric campsite with a developed midden deposit, has been impacted as a consequence of cattle grazing activities, construction of range improvements (construction of water tanks, buried water lines, grading of vehicle and trailer storage areas, etc.), and vehicular traffic associated with range management. The site has also been impacted by road grading activities not directly related to cattle grazing activities. The initial site record form, prepared in January 1963, describes the site as a village and quarry site with a trail that transects the site boundaries. An active spring is also located within the archaeological site boundaries. The initial 1963 site record form noted that the site had not been impacted as of January 1963. ("Possibility of destruction None").

The archaeological site record for CA-SBR-2652 was updated in April 1980. A significant Anasazi component was identified within the site boundaries. Additionally, the location of the "site area" was reconfigured, and an aircraft landing strip, wire fence, graded road w/gate (listed as a "main road"), and a water [tank] tower were mapped around and outside the perimeter of the re-recorded site boundaries. Additionally, two separate loci were drawn south of the main site deposit, the main road, water storage tanks, and the landing strip. Much of the site was described as "Destroyed" as a consequence of being bladed flat. CA-SBR-2652 continued to be impacted by grazing (and human activity associated with ranching activities). Sometime in the mid 1990s a large cattle corral facility was placed within the boundaries of the site. A rectangular area on a gentle sloping surface adjacent to the existing water tanks has been graded flat for use as a trailer/vehicle parking location. Existing short utility access roads provide vehicular access to the parking area in front of the trailer parking location. Because of cattle grazing activity (and artifact collectors) many of the surface artifacts associated with the site have been obliterated. In November 2006, archaeologists from the BLM and the Harry Reid Center, University of Nevada, Las Vegas (UNLV) conducted a preliminary site re-survey and re-recording of CA-SBR-2652, attempting to identify and map site boundaries and the presence/absence of visible midden. The areal extent of the deposit has been determined. Additionally, UNLV was tasked with making a preliminary assessment of impacts to the site, determining appropriate site stabilization and mitigation measures, and making a recommendation of CA-SBR-2652's eligibility for nomination to the National Register of Historic Places.

Based on the reconnaissance data provided by UNLV, the BLM constructed an exclosure fence around the site and disconnected the water supply within the corral to prevent impacts to the site caused by cattle grazing activities. Additional measures to be implemented include, but are not limited to, archaeological testing to determine the extent of the previous impacts to the site, identify cultural resources existing on site, determining the areal and subsurface extent of the site, and make recommendations for nomination to the National Register of Historic Places as either an individual site or as an archaeological district. The site would be monitored on a yearly basis. If monitoring of the exclosure fencing reveals that the enclosure fence(s) does not adequately

protect this site complex, alternative measures may also be implemented (e.g., shifting cattle use by moving water tanks/troughs). Measures have been taken to remove cattle use from the area, including turning off water available to the cattle and fencing off portions of the site that were heavily damaged.

The Grazing Amendment stipulations of the Protocol Amendment, Supplemental Procedures for Livestock Grazing Lease Renewals (Grazing Amendment), to The State Protocol Agreement between California Bureau of Land Management and the California State Historic Preservation Office, would be applicable under the proposed action. Active grazing leases would be scheduled for cultural resource compliance coverage, in consultation with the SHPO, over the next ten years. As stipulated in the Grazing Amendment, the BLM notified the State Historic Preservation Officer that a Section 106 survey of the HSA was completed fiscal year 2007. This was completed.

Impacts of No Action (Current Management):

Same as the Proposed Action. Impacts to cultural resources with the No Action alternative would remain the same as the Proposed Action for the Horsethief Springs grazing allotment.

Impacts of No Grazing

Impacts cultural resources under the No Grazing alternative would be significantly less than under the other alternatives. Cattle removal would stop traditional artifact displacement by grazing activities and thereby lessen impacts to site integrity. Soil erosion due to previous grazing activities would continue until natural vegetation returns to hold the soils in place. Erosion would contribute to artifact displacement and subsequent loss of site integrity.

Native American Religious Concerns

Affected Environment

The Horsethief Springs Allotment may be considered as traditional territory to five Native American tribes that historically occupied and/or exploited the natural resources present within the allotment boundaries. These tribes are the Las Vegas Paiute, Pahrump Paiute Tribe, Colorado River Indian Tribes, the Chemehuevi Indian Tribe, and the Fort Mojave Indian Tribe. None of the tribes' reservation lands include the allotment, nor do any tribal members currently reside on allotment lands. There are no treaty rights (e.g., hunting, fishing, etc.) associated with any of the plant or animal communities on the allotment. Some tribal members hunt game, conduct subsistence and resource collection of materials from the public lands (such as gathering mesquite beans, basket weaving materials, medicinal plants, clay, etc.) within the allotment. Sacred sites and ceremonial use of small areas are also known to occur within the

allotment area. A majority of the lands within the allotment have been identified as possessing traditional Native American values. The Kingston Mountain Range is of particularly high sensitivity (1991 Management Plan). A named Paiute village site, variously referred to as *Moqua*, *Mo-quats*, or *M*okwats*,* is located within the allotment.

BLM conducted Nation to Nation coordination and consultation with the aforementioned Native American Tribes. In the consultation letter the Field Manager requested information about Tribal concerns over issues associated with cattle grazing, water and range developments, spring rehabilitation projects, and any other issues or concerns that the tribes may have with the BLM's management of the grazing allotment.

Environmental Consequences

Impacts of Proposed Action

No specific concerns were identified by the potentially affected Tribes. In general, Native Americans are concerned about both cultural and natural values, implementation of the Rangeland Health Fall Back Standards and Guidelines for Livestock Grazing will address much of these concerns. Should Native American traditional values, or cultural uses be impacted, appropriate mitigation would be identified in consultation with the tribes who ascribe these values to the area.

Impacts of No Action (Current Management)

Same as the proposed action.

Impacts of No Grazing

Same as the proposed action.

Environmental Justice

Affected Environment

No minority communities or low income communities are located within or adjacent to the Horsethief Springs Allotment.

Environmental Consequences

The proposed action would not impact distinct Native American cultural practices or result in disproportionately high or adverse human health or environmental effects on minority and/or low income communities, or children.

Hazardous and Solid Wastes

Affected Environment

Range improvements that temporarily use generators and pumps, like the northward extension of the Horsethief Springs Pipeline and water storage tank, with associated fuel storage, waste oil generation, and batteries are known to be used on the allotments. When water is pumped into that water storage tank, releases of fuels, petroleum products, battery acid, and lead may occur. Since the proposed use of these sites is consistent with past range land use, previous hazardous material contamination may exist, although the extent of such contamination has not been quantified.

Environmental Consequences

There is a potential for releases of hazardous and/or solid wastes. Affects to resources include air, soil, and water (including surface and ground water) contamination, and increased risk to public health and safety. The specified mitigating action in the proposed action for Hazardous Materials will sufficiently reduce the affects to health, safety and the environment.

It is unlikely that continued use will exacerbate current conditions. The mitigating actions defined in the proposed action should be sufficient to ensure responsible management of sold waste and hazardous materials.

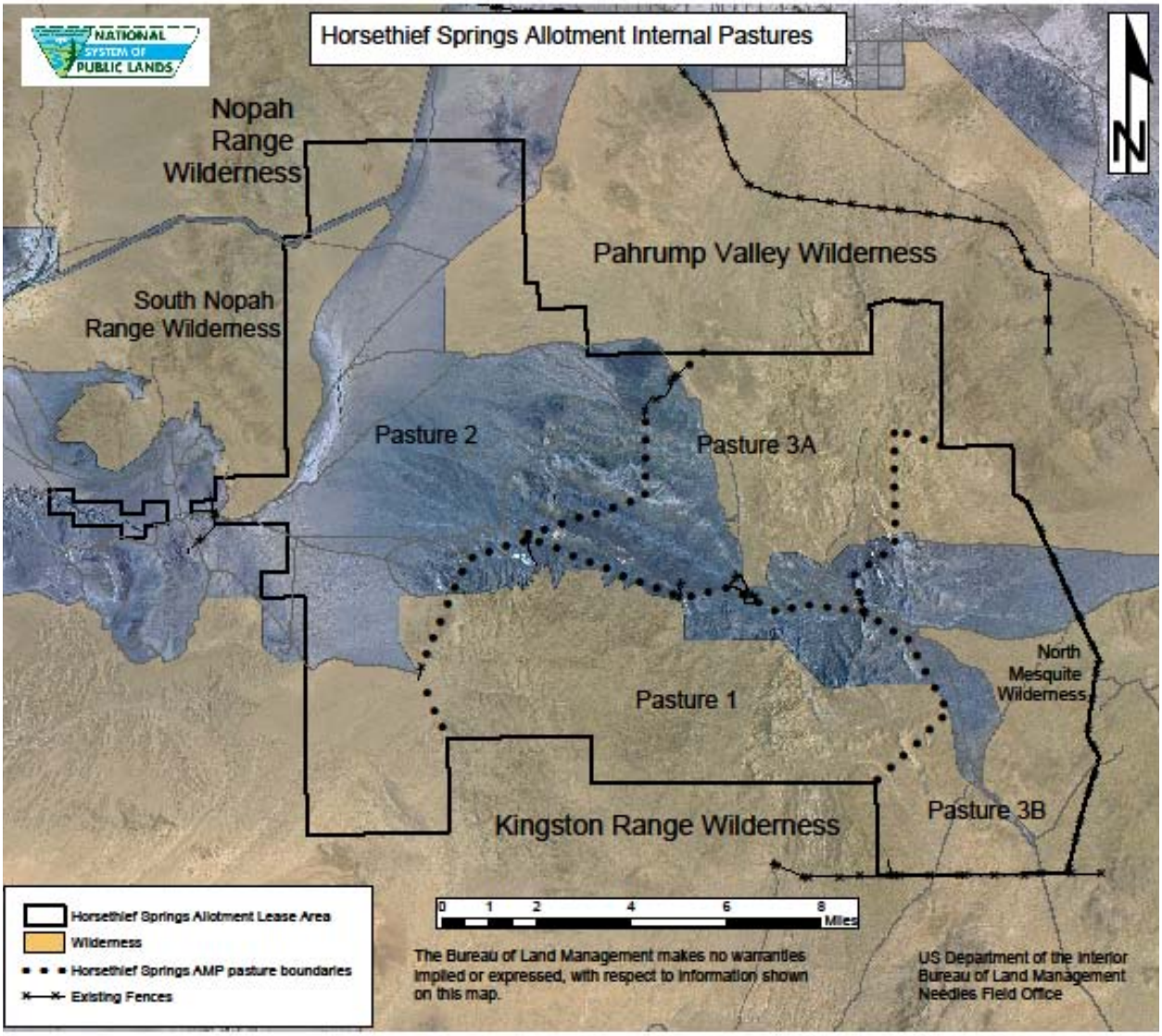
Livestock Grazing

Affected Environment

Livestock grazing in this area of the Mojave Desert has been occurring as an industry since the late 1800's and based upon BLM records, cattle grazing on the Horsethief Springs Allotment has been ongoing since the mid 1950s.

The allotment encompasses 108,113 acres of public lands, 4,480 acres of state lands and 776 acres private lands (see Figures 1 and 2). Just five miles east of the allotment are center-pivot irrigated turf grass fields of Sandy Valley Nevada. China Ranch (six miles) and Tecopah California (eight miles) both are west of the Noon Day drift fence. Although road distances may vary, downtown Pahrump Nevada, just north of the allotment, is within thirty miles and downtown Las Vegas Nevada is around fifty miles away. The Needles Field Office is just under a 3 hour drive away.

Figure 4. Horsethief Springs Allotment Pastures



Most visitors to the allotment travel the Excelsior Mine Road for access from the west and from the south at the Cima exit on Interstate 15. Tecopah Highway crosses through the northwest corner. The Horsethief Springs Allotment straddles the eastern end of the boundary between San Bernardino and Inyo Counties. Elevations range from less than 1,804 feet at Furnace Creek Wash to 7,326 feet at Kingston Peak. Most of the Kingston Range is located within the allotment.

The HSA allotment management plan was developed to reflect historic livestock movements manifested by a four-pasture configuration. Natural barriers and limited fencing segregate pastures within the allotment. Much of the lease area is without perimeter fencing. Lessee controlled livestock water access is the primary means of controlling livestock movements and their placement within the allotment. There are several strategically positioned drift fences that also define pasture locations. Much of

the area within this allotment is below 3,500 feet in elevation and is ephemeral range. This evaluation will consider pasture locations as shown on the AMP Base Map. For an understanding of internal pasture alignments, see Figure 4, previous page.

The Horsethief Springs Allotment, number 09007, is an ephemeral/perennial allotment with potential forage production that allows BLM to authorize cattle grazing on a yearly basis for 202 head, yearlong for a total of 2,424 AUMs. The forage base for livestock grazing is the difference between net primary production and gross primary production, which has been traditionally measured in AUMs. This fundamental ecological concept has been manifested in utilization limits on grazing animals and expressed as terms and conditions for grazing leases. The 1980 CDCA Plan rated the Horsethief Springs Allotment as Fair. No portion of the allotment is within critical desert tortoise habitat nor desert wildlife management areas.

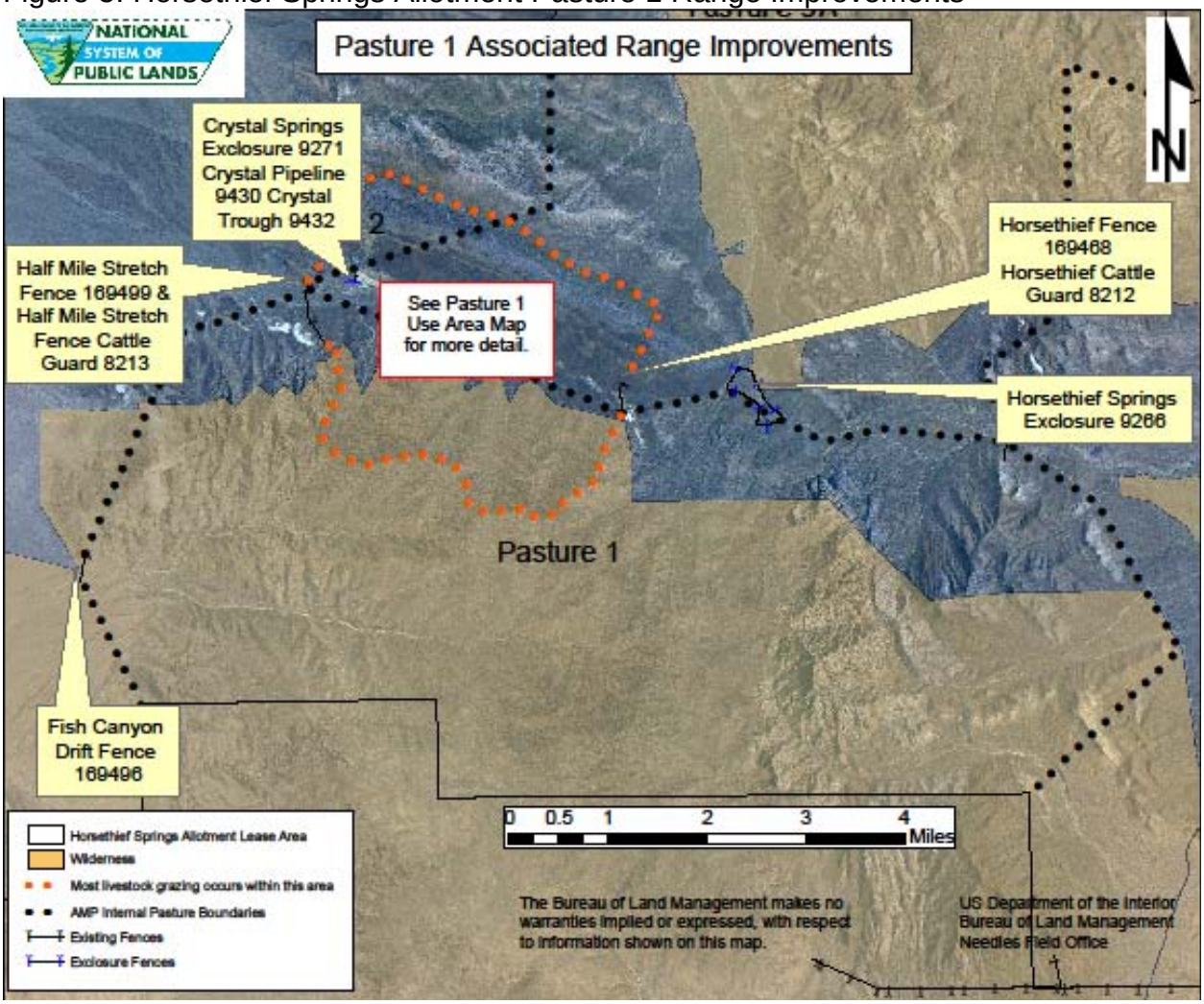
There is one Lessee on the Horsethief Springs Allotment who uses the allotment yearlong. All Lessee livestock would rotate through the four pastures of the allotment as one herd. Not all areas within the allotment are grazed such as the unattached but fenced off blocks of public land west of the Noon Day Fence. Because of a lack of water, Fish Canyon is another area that receives minimal livestock use other than stray cattle roaming through the Kingston Range. No herding is allowed in accordance with the terms and conditions of current biological opinions, but livestock movements are primarily achieved through water management. However, Corriente/Long Horn breeds are very gregarious and will frequent areas not considered as prime grazing areas due to topography and distances from water. When livestock are scheduled to use any of the four pastures, water for livestock would only be made available within that pastures and all other water in other pastures turned off. The Lessee has not stocked to full stocking rate and adjusts livestock numbers in conjunction with their other business endeavors. The Lessee is on "Actual Use" billing and will supply a written record of all livestock movements onto and off the allotment using the "Actual Use" form to report livestock movements to the BLM.

The table on page twenty-four of the HSA AMP (Appendix 1) shows designated periods of livestock use within four distinctly different pastures. This information was further refined in the proposed action and grazing schedule as shown in Table 4. The livestock-grazing year begins March 1 annually and is the starting point for the following description on how livestock would be rotated through three of four pastures during year one of the livestock grazing schedule. Pasture 2 would be rested for fourteen months prior to its scheduled use in year 2 of the grazing lease life cycle. Information regarding each subsequent year of the livestock rotation plan is addressed on page fifteen.

Four pastures are shown in the HSA AMP grazing schedule and shown in the map of the Horsethief Springs Allotment Pastures. What follows are descriptions of these four pastures, which have been traditionally grazed by previous Lessees. Each of the pastures are an assemblage of rugged, mountainous topography, livestock water sites,

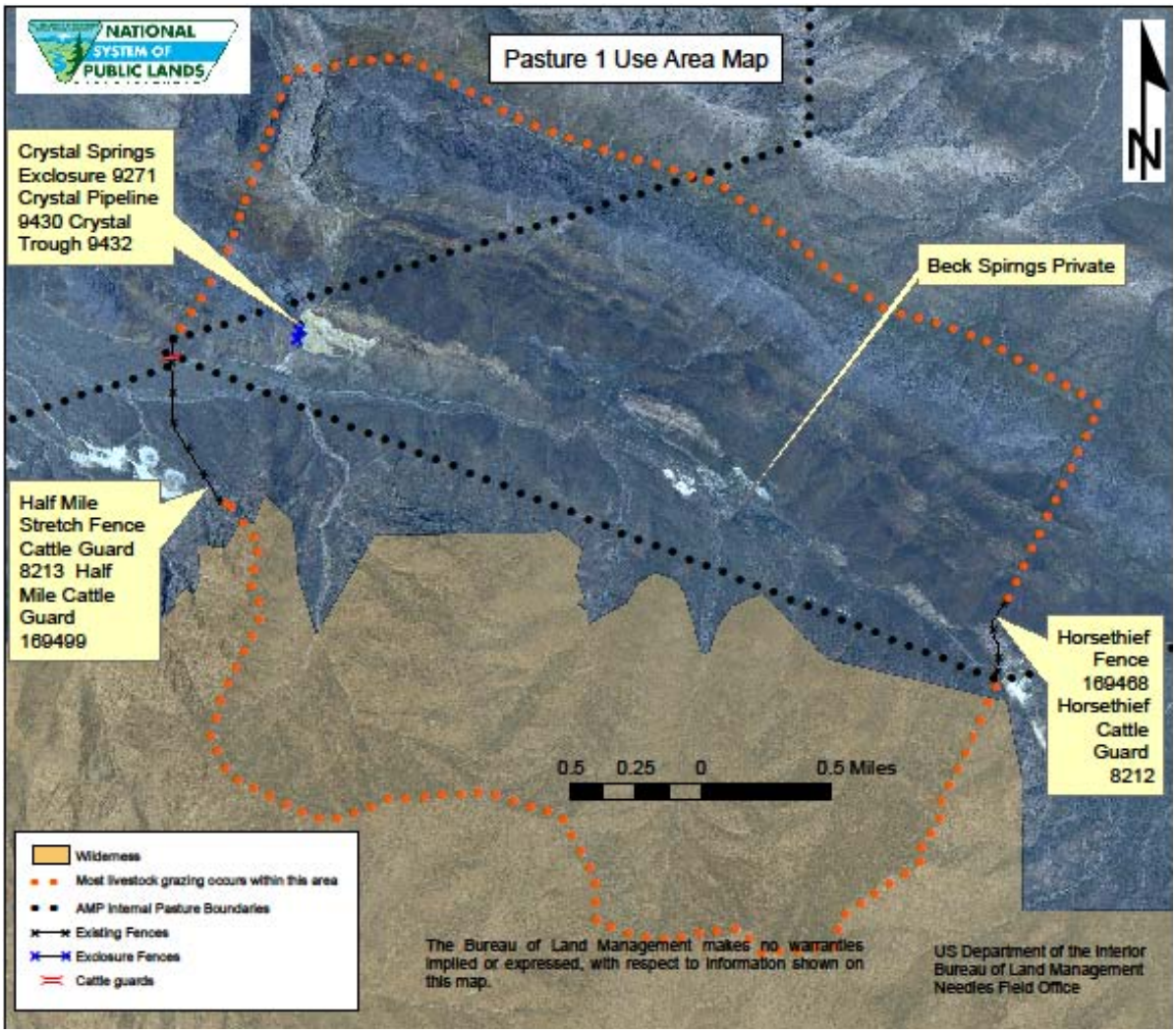
drift fences and cattle guards that together are used to confine and control livestock within each of the four pastures.

Figure 5. Horsethief Springs Allotment Pasture 1 Range Improvements



Pasture 1 is located in the south central area of the allotment, Figure 5 and Figure 6 showing greater detail of where most livestock grazing occurs in this pasture. Livestock containment within Pasture 1 is dependent upon rugged mountainous topography to the north and south of Beck Canyon. Both ends of Beck Canyon have been fenced to confine livestock within the valley floor of Beck Canyon. The Half Mile and Horsethief drift fences were built in the 60's to control livestock drift out of the canyon. Cattle guards placed within these two fences and on Excelsior Mine Road allow for vehicular passage through the area without the need to manually close gates.

Figure 6. Horsethief Springs Allotment Pasture 1 Use area

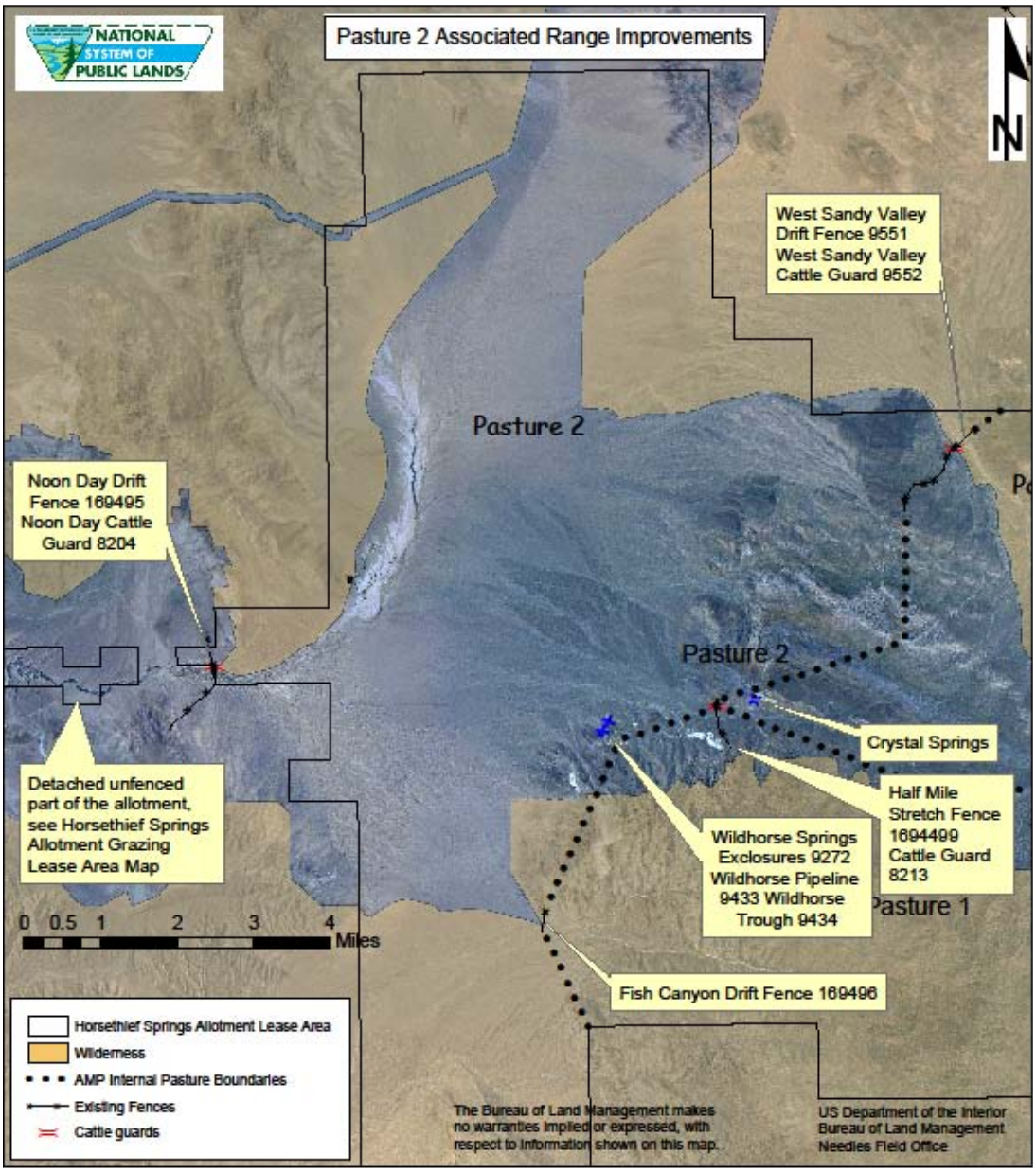


Livestock typically graze the gentle terrain of the canyon bottom, however some livestock have been known to frequent upper elevations of the Kingston Wilderness and Fish Canyon. Figure 6 illustrates were most livestock grazing does occur when livestock graze Pasture 1.

Grazing would occur on the dominant Mojave mixed woody/ succulent scrub plant community with a minor amounts of grazing occurring in a Mojavean pinyon pine/juniper woodland. Range adjudication information suggests that around 103 AUMs may be available in a good year of plant production, which would feed 202 cows for 16 days. Figure 3 illustrates plant communities and other areas of special vegetation management.

Pasture 2 is the largest of the four pastures and is comprised of western and northwestern facing bajadas of the Kingston Range and the California Valley basin and almost six miles of the eastern terminus of Salt Creek/Furnace Creek Wash. The lowest point on the allotment at ~1,804 feet, is found within Furnace Creek wash. See cover photo. The western half of the Kingston Range Natural Area, an ACEC, is also located within this pasture.

Figure 7. Horsethief Springs Allotment Pasture 2 Range Improvements.



When livestock graze pasture 2, they are confined by the Noon Day Drift fence and cattle guard that were built in the 60's to control livestock drift onto several ACECs west of the allotment and private lands adjacent to the fence. The Noon Day Drift Fence also separates small, noncontiguous parcels of the allotment to the west in Furnace Creek Wash. Other drift fences include the Fish Canyon drift fence and the West Sandy Valley drift fence and cattle guard that prevent livestock from trailing eastward into Fish Canyon and south into Pasture 3A. There are no other fences to restrict livestock movements out of Pasture 2.

Plant communities include Mojave creosote bush scrub, a minor amount of desert saltbush scrub and widely scattered inclusions of galleta grass. Pasture 2 comprises approximately half of the total area of this allotment, however the range adjudication suggests that around 738 AUMs may be available to feed 202 cows for 45 days. Permanent water essential in the support of livestock grazing in Pasture 2 can only be found at Wildhorse Springs southwest of Beck Canyon and consists of a (yet to be completed) float valve equipped water trough located outside and away from Wildhorse Springs Exclosure fences.

Although there are no other approved range improvements for water in Pasture 2, shallow topographic depressions do provide ephemeral water for livestock when local and heavy precipitation events occur. Water does accumulate in sufficient quantities to support short but unpredictable periods of livestock grazing. This water may last a few hours to several days depending upon water infiltration rates, ambient temperature, relative humidity and the number of livestock drinking from these shallow pools. Nevertheless, incorporation of such water sources into the livestock management plan is impractical due to the unpredictable nature of Mojave Desert rain events.

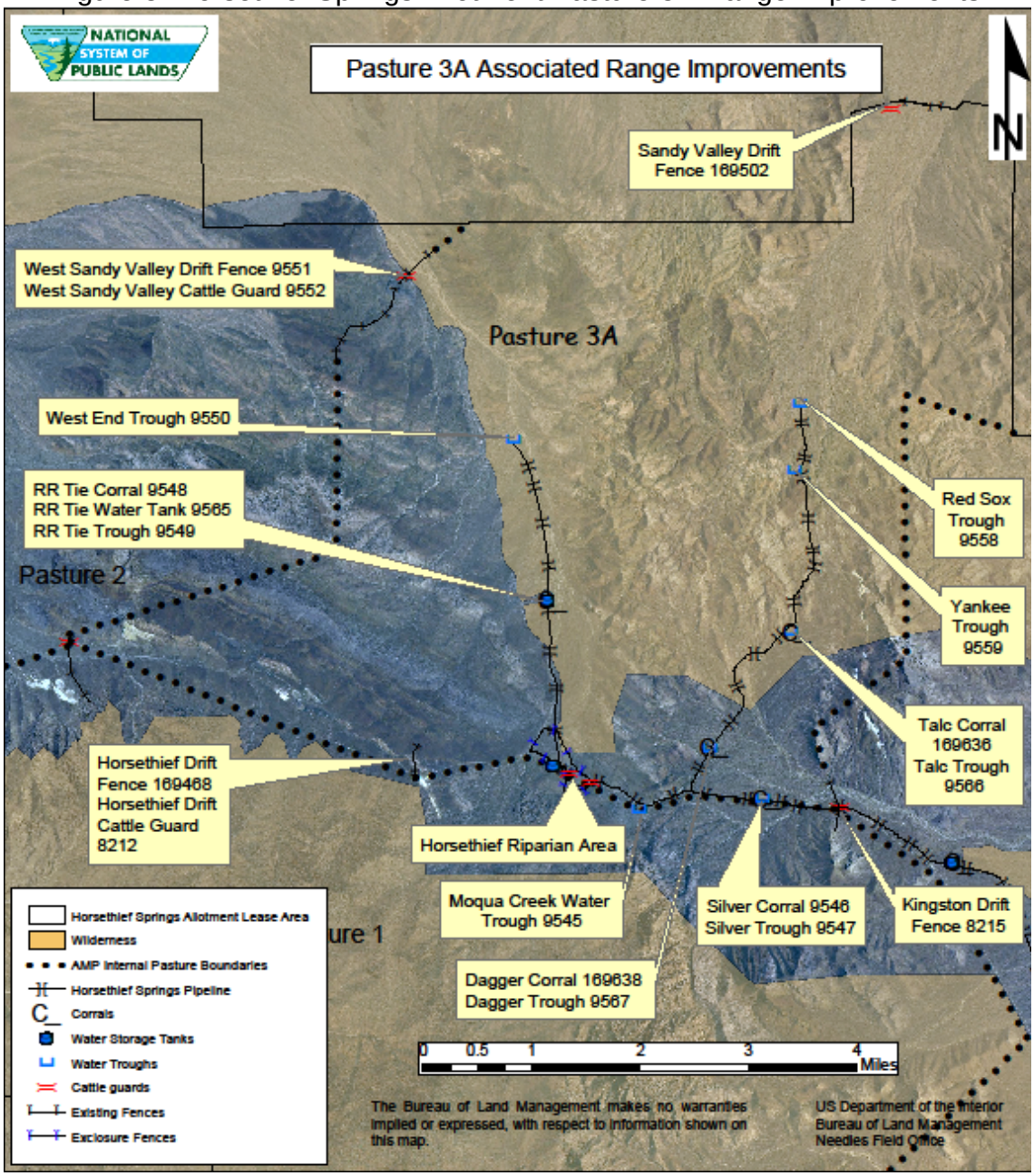
Pasture 3A is located in the north central part of this allotment. Most of this pasture is north of the Excelsior Mine Road, which, as mentioned before, is an unfenced boundary between pastures. As discussed in the description for Pasture 1, livestock drift over the unfenced pasture boundary line to graze on the northern slopes of Beck Canyon and obtain water from Crystal Springs.

When livestock are schedule to use Pasture 3A, containment is realized through the use of Horsethief drift fence and cattle guard, West Sandy Valley drift fence and cattle guard, Sandy Valley drift fence, and the Kingston drift fence and cattle guard. These range improvements combined with steep rugged mountainous topography and Lessee manipulated water availability hold livestock within Pasture 3A.

The dominant plant community is a Mojave mixed woody/succulent scrub with minor amounts of Mojave creosote bush scrub and, Mojavean Pinon and Juniper woodlands. Range adjudication suggests that approximately 391 AUMs are available in good forage production years, which would feed 202 cows for 28 days.

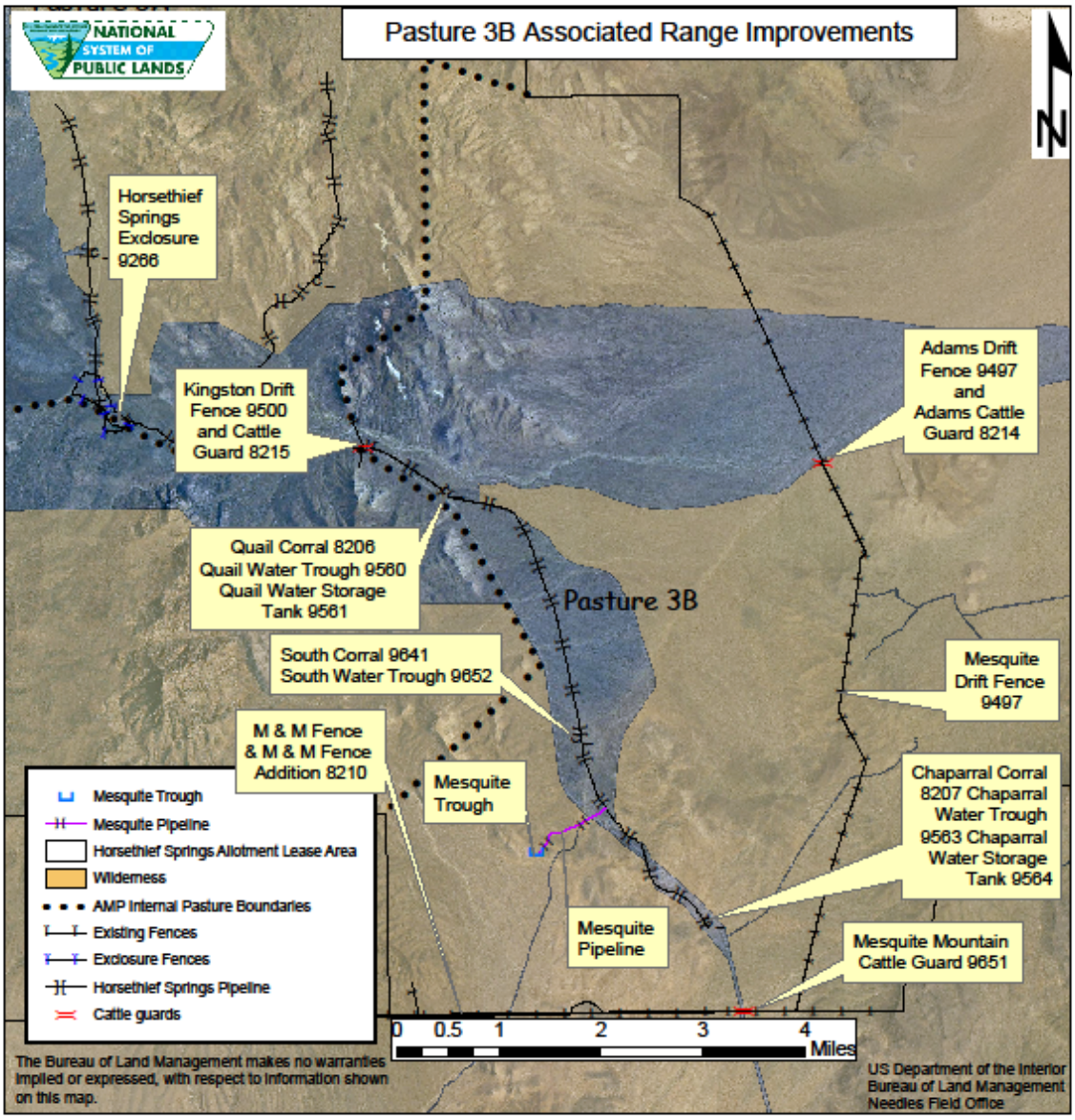
Livestock water is piped northward into the middle of Pasture 3A through the Horsethief Springs pipeline which splits to extend northward into two separate basins. RR Tie, Dagger, Talc and Silver Corrals are water traps on the pipeline. West End, Red Sox, Yankee and Moqua Creek are water troughs not within corrals. All water locations can be manipulated by the Lessee to provide water when livestock are scheduled for to use this pasture. Based upon the distance most desert cattle will travel for a drink of water, the water infrastructure is sufficient to water major portions of Pasture 3A.

Figure 8. Horsethief Springs Allotment Pasture 3A Range Improvements



Pasture 3b is composed of the southeastern corner of the allotment. The southern and eastern boundaries of this pasture are fenced, however no fences exist on the west and north boundaries. When livestock are authorized to use this pasture, containment is realized by the Kingston, Adams, Mesquite, Mesquite Mountain and M & M and M & M extension fences and associated cattle guards. Livestock are kept from the agricultural fields in Nevada by the Adams drift fence and cattle guard.

Figure 9. Horsethief Springs Allotment Pasture 3B Range Improvements



The dominant plant communities found within this pasture are the Mojave Creosote Bush Scrub with the northern third of the area comprised of the Mojave mixed woody/succulent scrub that in a good production year may provide 1,192 AUMs. This

amount of forage would support grazing for 202 head of cattle for around 243 days.

Livestock water is piped into this pasture by the southeastern arm of Horsethief Springs pipeline. Water is made available to livestock at Quail, South and Chaparral water traps. When scheduled for livestock use, no other water troughs would be supplied with water, forcing livestock to stay in Pasture 3B.

Wildland fires have been and continue to be a major perturbation upon higher elevations within the allotment. As with the rest of the Kingston Range, wildfires have occurred numerous times in the last 20+ years and are expected to continue when fire fuel loads are favorable. The last wildfire in 2007 burned much of the 19,000-acre Kingston Range Natural Area in Pasture 2.

The Kingston Range receives from 4 to 8 inches of annual precipitation and is reflected in the following species being present. Not all inclusive, the following are forage species used by livestock when on the allotment as identified in the AMP are: bottlebrush squirreltail (*Elymus elymoides*), desert needlegrass (*Achnatherum speciosum*), low woollygrass (*Dasyochloa pulchella*), turpentinebroom (*Thamnosma montana*) spiny menodora (*Menodora spinescens*), blackbrush (*Coleogyne ramosissima),* Nevada jointfir (*Ephedra nevadensis*), burrobrush (*Hymenoclea salsola*), banana yucca (Yucca baccata), Mohave yucca (*Yucca schidigera*), Mexican bladdersage (Salazaria mexicana), desert bitterbrush (*Purshia glandulosa*), brittlebush (*Encelia farinose*), broom snakeweed (*Gutierrezia sarothrae*). narrowleaf goldenbush (*Ericameria linearifolia*), Eastern Mojave buckwheat (Eriogonum fasciculatum), redstem stork's bill (*Erodium cicutarium*), red brome (*Bromus rubens*), cheatgrass (*Bromus tectorum*) (See Appendix 5).

Others plant species not listed in the AMP but are often grazed include: galleta grass (*Pleuraphis rigida)*, bush muhly (*Muhlenbergia porter)*, Indian ricegrass (*Achnatherum hymenoides)*, Mediterranean grass (*Schismus barbatus*), globe mallow (*Sphaeralcea ambigua)*, range ratany (*Krameria parvifolia*), winterfat (*Krascheninnikovia lanata)*, wolfberry (*Lycium torreyi)*, and others plants to a lesser degree.

Environmental Consequences

Impacts of Proposed Action

Under the proposed action, the grazing lease for the allotment would be renewed for 10 years and conform to the livestock-grazing schedule as originally adopted from the AMP. The lease would be the same as that recognized over the last ten years for 202 cows, yearlong for a total of 2,424 AUMs.

The impacts associated with following the AMP would be localized to each pasture when scheduled for livestock use. Grazing livestock are expected to utilize forage plant

species such as needleandthread grass, Indian rice grass, cliffrose, winterfat and other forage species within each plant community with grazing livestock avoiding other plants entirely like cactus. The AMP, Appendix 1, contains a list of species that are expected to be utilized by livestock. This list may not be all-inclusive and any other species observed in utilization studies would be added to the list livestock prefer. When livestock obtain their daily supply of water they are expected to congregate and loaf in the immediate vicinity of water troughs or pinch points in corrals and gates between pastures. The degree of impacts associated with loafing livestock are expected to diminish rapidly the further away from water sources livestock travel. The proposed grazing schedule would shorten the length of time livestock spend in pastures 1, 2 and 3a based on available forage and an overall match between grazing livestock and anticipated forage production within each pasture.

Livestock water trough locations have typically avoided the best forage production areas in favor of more open or disturbed sites. In addition, livestock water placement at one to two mile intervals between water troughs and pasture boundaries distributes livestock impacts associated with grazing throughout the pasture and allotment. The effect of freezing and thawing loosens compacted soil and moderates to an extent impacts by livestock around water locations. And with periods of rest scheduled for each pasture, areas around water troughs, corrals and pinch points in would be rested along with that pasture.

The terms and conditions contained in the new lease would include grazing prescriptions from the NEMO plan amendment, as well as other terms and conditions deemed necessary by the Needles Field Office. These grazing prescriptions would not substantially change current grazing operations on the allotment but would follow a rest rotation schedule that rests each pasture once every four years or as in the case with Pasture 3b, would defer livestock use until post seed ripe in that forth year.

The implementation of the 40% utilization limit would have negligible effects o n cattle grazing as cattle distribute widely throughout the allotment. The livestock management schedule is expected to result in more forage production by resting all forage plant species in unused pastures for an entire year, allowing for seed set in each pasture rested. Areas around water troughs would receive the same rest as surrounding areas within each pasture. The AMP grazing schedule and pasture usage would eliminate trailing that currently occurs between Crystal and Wildhorse Springs.

The NEMO plan amendment requires site specific NEPA analysis and project-specific Endangered Species Act, Section 7 consultation be conducted as needed for proposed changes in grazing management that would be considered more than a minor change, In addition, new range improvements are limited to those listed in the AMP but either project proposal would have to be reviewed in accordance with 43 CFR 1610.5.5.

The proposed action based upon the AMP would be subject to adaptive management to

allow for the achievement of allotment specific objectives and improve range conditions conserving the flora for future generations.

3. Impacts of No Action (Current Management).

Grazing would continue on the Horsethief Springs Allotment as it currently exists, except that applicable NEMO grazing prescriptions would not be implemented or followed. Current management is based around dispersal of one hundred and five head of cattle among the working water troughs yearlong.

As with the proposed action, the livestock would be allowed to separate into smaller herds and forced to move between water traps by controlling access to water. Unlike the proposed action, livestock would split into smaller subgroups with movements between and among pastures and water locations determined by the Lessee.

The Lessee would be required through the lease transfer process to accept maintenance responsibility and perform needed repairs of range improvements listed in Table 4 before issuance of a new ten-year grazing lease. Then prior to any livestock grazing authorization within any pasture under the new lease, all range improvements on the entire allotment would have to be maintained to the conditions intended when they were first constructed. A complete list of range improvements can be found in Table 5, pp. 17.

4. Impacts of No Grazing

Under this alternative, grazing would not be authorized on Public lands. This alternative would initiate a process in accordance with the 43 CFR 4100 regulations to eliminate grazing and make the allotment unavailable for grazing. Because this allotment is not identified for voluntary relinquishment in the NEMO plan amendment, it would require a land use plan amendment.

Paleontological Resources

Affected Environment

The paleontological sensitivity map on file in the Needles Field Office indicates that there is a high potential for significant fossils on mountain tops in the Kingston Range area. Early Proterozoic to Mesozoic mudstones and sandstones are mapped in the central portion of the allotment. Late Proterozoic to Middle Devonian sandstones are mapped on the northern and northeastern areas of the allotment. There is an unknown, but suspected high potential for vertebrate fossils in proximity to fossil lake deposits in the California Valley.

Environmental Consequences

The impacts anticipated for all of the alternatives are the same. If cattle congregation areas co-occur with scientifically significant invertebrate or plant fossils and all vertebrate fossils, these resources could be broken or displaced. If impacts are identified, the fossils would be removed and curated at an appropriate repository.

Recreation

Affected Environment

Recreational use occurs throughout the Horsethief Springs Allotment. Visitation is moderate throughout the year.

The allotment is crisscrossed with designated open routes of travel, including a portion of the Kingston Wash non-wilderness corridor and a segment of the Mojave Adventure Trail (formerly East Mojave Heritage Trail). The Kingston Wash corridor trail is a popular off-highway vehicle (OHV) route, described in the BLM's *Kingston Wash OHV Trail Guide and Map* brochure and several popular public trail and route guides.

Dispersed recreational activities include hiking, camping, geo-caching, boulder and rock climbing, OHV touring, site-seeing, bicycling, horseback riding, wildlife and bird watching, photography, target shooting, hunting, and rock collecting.

Special Recreation Permits (SRP) are issued for the annual Los Angles to Barstow to Las Vegas (LA-B-2V) dual sport ride, commercial vision quest camping, and commercial hunting guide services.

Horse Thief Camp is located in pasture 3A near Excelsior Mine Road. The campground provides four pull-in camp sites, one which is designed as a group site. Other facilities consist of a kiosk, vault toilet, horseshoe pit, and a looped turn-a-around. The site receives frequent visitation during the spring and fall seasons owing to its panoramic views, historical interest and opportunities for watchable wildlife.

The Horse Thief Canyon nature trail is located in Pasture 1. Kingston Peak and North Kingston Peak are best accessed from the nature trail.

Dumont Dunes OHV Recreational Area is located a few miles southwest of the allotment and receives extensive seasonal use during fall, winter, and early spring, with the heaviest visitation occurring on weekends and holidays. Visitors, clubs, and groups often tour on the designated routes through the Allotment and down Kingston Wash on day trips while based at Dumont Dunes. The communities of Tecopa and China Ranch also use the public lands adjacent to and within the Allotment to recreate on and direct visitors to various sites. Recreation use levels in the area are generally low to moderate

and include a variety of recreational activities.

The wilderness areas located within the Horsethief Springs Allotment provide unique opportunities for solitude and primitive forms of recreation. Refer to the Wilderness section for further details.

Environmental Consequences

Impacts of Proposed Action

Cattle are known to congregate near pools of ephemeral water, tanks, troughs, and corrals. Since these same facilities serve as points of discovery and interest for recreational visitors, there is increased potential for interactions between cattle and visitors at these locations. Vehicle-cattle interactions can range from avoidance (animal leaves area) to aggressive (animal is provoked or is protecting young), depending largely on human behavior.

The proposed action would decrease potential impacts by rotating cattle through the pastures. Interaction between livestock and SRP event participants may occur when a permitted event is scheduled to take place within or through a pasture scheduled for use.

During livestock gathers recreational activities may be delayed as cattle are moved between pastures and/or loaded on stock trailers for transport. These types of human-cattle interactions are infrequent, so the overall impacts to recreation would not be appreciable.

The BLM's multiple use mission authorizes a variety of activities that all may occur on the same lands. The proposed action to re-issue a 10-year lease prescribes a rest-rotation schedule with only one pasture in use at a time would minimally affect dispersed recreation, SRP events, camping or hiking activities.

Impacts of No Action (Current Management)

The no action proposal would continue current operations, resulting in possible cattle-human interaction all year long and throughout the entire allotment.

Impacts of No Grazing

This action would eliminate any cattle-human interaction.

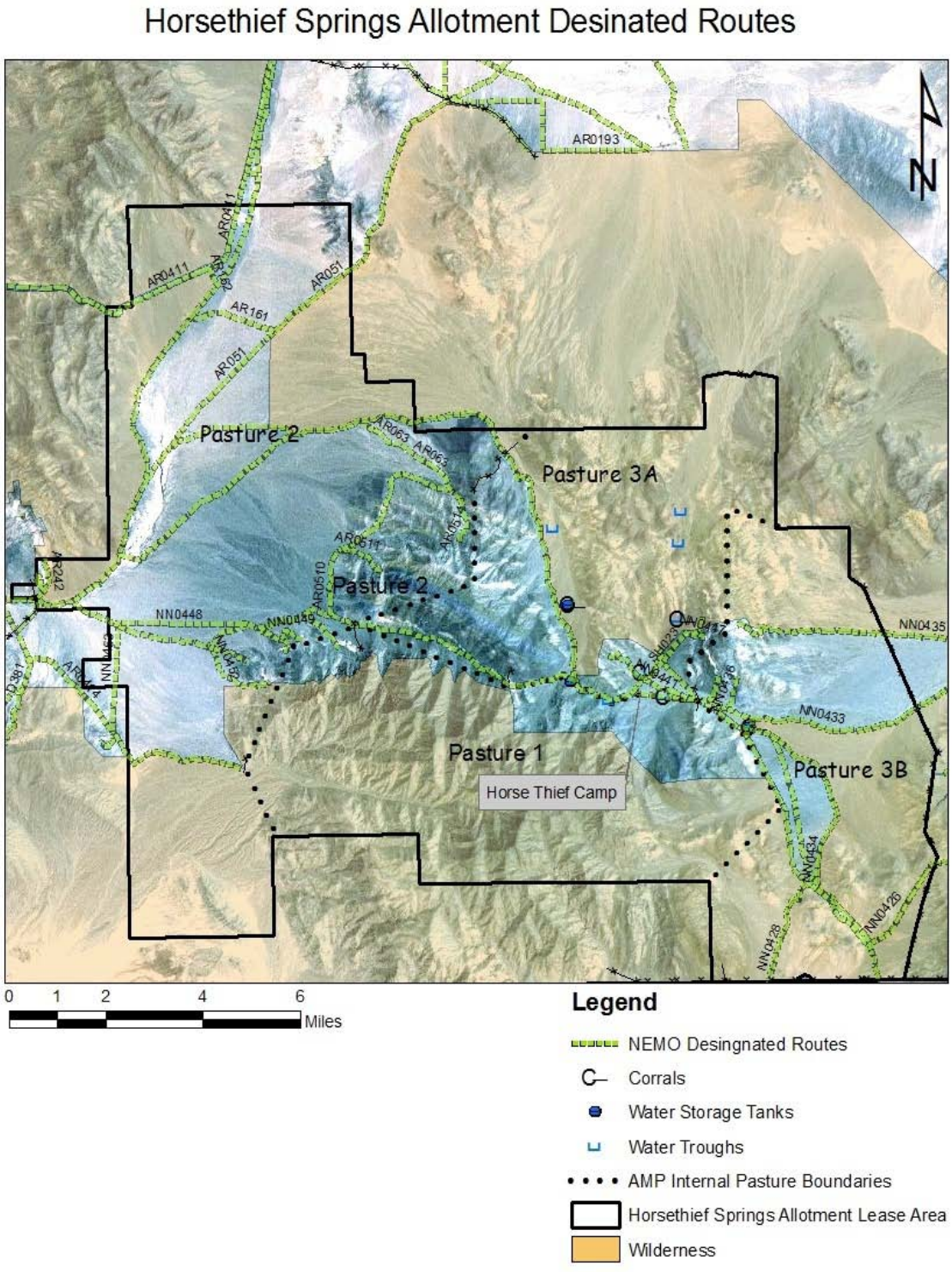


Figure 10. Designated Open Routes of Travel and Campground

Socioeconomics

Affected Environment:

The proposed action and alternatives within this EA are located in rural San Bernardino County. There are no human populations occur within or adjacent to the allotment. In the management of the grazing lease, the Lessee may hire local labor on a seasonal basis. This labor typically consists of one or more individuals.

Approximately $1,500.00 of the Bureau's grazing fees collected are returned to San Bernardino County annually depending on the price of an AUM for that year and the number of AUMs utilized. The Horsethief Springs Allotment contributes approximately 10 – 15 percent of the total grazing fees for San Bernardino County.

The contribution of the allotments to the goods and services of the local community is nominal. The sale of calves at the stock yard by the Lessee benefits the financial needs of the Lessee and provides capitol to purchase goods and services for continuation of the grazing operation and personal needs.

Environmental Consequences

A. Impacts of Proposed Action

During periods of drought the Lessee may be required to remove cattle from all or part of the allotment which may cause a loss in revenue to the Lessee. Under the proposed action, grazing would continue at current levels. These levels are at their lowest point when compared to historic levels. The grazing operations would continue to have a nominal influence on the local and regional economy of San Bernardino County.

Overall there would be slight or no impact economically to the Lessee or the regional economy of San Bernardino County. The operations are generally small and the effect on the local economy is low or minor.

B. Impacts of No Action (Current Management)

Same as the proposed action.

C. No Grazing.

Should livestock grazing no longer occur on the HSA, San Bernardino revenues from grazing fees would be reduced by a nominal amount. The Lessee would have to purchase rent pasture on private lands to support his livestock. Local temporary employment associated with the management of the grazing lease would be forgone.

Soils

Affected Environment

Detailed soil surveys have not been conducted for the region encompassing the Horsethief Springs Allotment. In general, soils of the region are predominately aridisols (calcids and durids) and entisols (ordents and psamments). Accurate classification below these subgroups requires more detailed study. However, some generalizations can be made.

The region in which the Horsethief Springs Allotment is located includes two major soil types. Areas of low topographic relief are mapped as light colored, red, desert alluvial, sandy soils. The mountain slopes consist of alluvium, colluvium and residuum from bedrock erosion.

The U.S. Department of Agriculture, Natural Resources Conservation Service (formerly the Soil Conservation Service) classifies soils into four hydrologic groups based on infiltration rates obtained for bare soil after prolonged wetting. Those four soil groups are described as follows:

Group A Soils

Group A soils have a low runoff potential and high infiltration rate. These soils generally consist of deep, well-drained sands and gravels. USDA soil textures normally included in this group are sand, loamy sand and sandy loam. Soils in this group have an infiltration rate of more than 0.3 inch per hour. Most of the areas underlain by undifferentiated alluvium and dune sand are mapped as Group A soils. This group of soils predominates in areas that are grazed.

Group B Soils

Group B soils have a moderate runoff rate and moderate infiltration rate. These soils generally consist of moderately deep to deep, moderately well- to well-drained sandy loams with moderately fine to moderately coarse texture. These soils have an infiltration rate between 0.15 and 0.3 inch per hour. These soils are very limited in the region.

Group C Soils

Group C soils have a moderate runoff rate and slow infiltration rate. These soils generally consist of silty loam with a layer that impedes the downward flow of water or has a moderately fine to fine texture. The soils have an infiltration rate of 0.05 to 0.15 inch per hour. Group C soils in the area occur in the lower part of the alluvial valleys and in the playa deposits.

Group D Soils

Group D soils have a high runoff potential and very slow infiltration. These soils consist of clay with high swell potential, soils with a permanent high water table, soils with a clay pan or clay layer near the surface or shallow soils above nearly impervious material such as bedrock. Soil textures in this group include clay loam, silt loam, sandy clay, silty clay and clay. The soils have a very low infiltration rate, at 0.05 inch per hour. Group D soils in the region are present in the areas mapped as bedrock.

Erosion and Sensitivity to Disturbance

Due to the sandy or loamy nature of the soil and the sparse vegetation in most of the region, the soil is susceptible to wind erosion. According to mapping by the BLM (1982), the sensitivities of soils in the area to disturbance can be classified as high, medium or low, corresponding generally to mountainous areas with shallow bedrock, alluvium on the flanks of the mountain ranges, and playa/lakebed deposits, respectively. Erosion potential of these soils ranges from slight to moderate.

BLM assessed the allotment in 1998 and 1999 to determine if the rangeland health standards were being met. Specific soils standards relate to permeability and infiltration.

Impacts to soils occur in the immediate vicinity of watering sources, corrals, and attendant access areas. An estimated sixty-two (62) acres of compacted soils currently exist due to existing range improvements within this allotment.

The open space between higher plants is not generally bare of all life. Highly specialized organisms can make up a surface community that may include cyanobacteria, green algae, lichens, mosses, microfungi and other bacteria. Soils with these organisms are often referred to as cryptogamic soils and form what is referred to as biological crusts.

In general, cyanobacteria and microfungal filaments weave through the top few millimeters of soil and aid in holding loose soil particles together forming a biological crust which stabilizes and protects soil surfaces. The biological crusts aid moisture retention, “fix” nitrogen, and may discourage the growth of annual weeds. Below the surface, the soil flora grows various rhizimes, hyphae and filaments that further bind the soil together. Most of the biological crust organisms make their growth during cool moist conditions. The intermountain region had many-extensive complex crusts. Many of those areas are so fragile that even casual foot traffic can cause extensive damage. Many of the intermountain areas have fine textures soils, cooler climates and summer rains which are conducive to crust development.

No species specific mapping of the allotment has been conducted for biological crusts. All data collected has been associated with the rangeland health evaluation and random spot observations.

Environmental Consequences

A. Impacts of Proposed Action

Under the proposed action, livestock grazing on the Horsethief Springs Allotment would continue to have a localized, negative effect on soils associated with congregation areas such as watering sites, and corrals through soil compaction caused by the concentration of livestock in a localized area. Soil compaction results in accelerated erosion by allowing for rapid run-off of water because of the lack of infiltration, and impedes seed germination. Seasonal rotation of pasture use and control of animal movement with installation and maintenance of fencing would allow some areas of compacted soils to improve (un-compact) slightly during periods of non use. The vast majority of soils in this allotment would continue to achieve the soils standard.

Grazing animals can apply compressional and shear forces to the soil. The crust response to these disturbances is highly variable. Moisture and burial are two important factors relating to the degree of impact. With coarse textured sandy soils, moist crusts are better able to withstand disturbances than dry soils. Many of the biological crust species are not mobile and cannot survive burial. However, the hot desert crusts are simple crusts that are highly mobile and quick to recover from disturbance. The large, filamentous cyanobacteria can move 5mm per day if it is wet. Although rain and moist soils occur at the start of the grazing season, grazing in the later part of the spring can reduce the cover of biological crusts because the soils are dry. These simple crusts would likely recover within days once the rain returns because the crusts are simple to nonexistent, site recovery, outside of congregation areas should be such that the impact would not be substantial.

B. Impacts of No Action (Current Management)

The impacts of the no action alternative would be greater than the proposed action because, livestock would be allowed to graze in all areas simultaneously with no areas receiving yearlong rest which is essential for crusting and stabilization of soil surfaces. The proposed action alternative would follow a rest rotation grazing schedule for livestock grazing among the pastures within the allotment

C. Impacts of No Grazing

Under the no grazing alternative livestock grazing would cease. Soil condition of areas disturbed by grazing cattle would stabilize and improve through time. There would be positive impacts to soils in congregation areas because they would begin the long, slow

process of de-compaction. The continued threat to biological soil crusts from fragmentation and/or destruction from grazing would cease.

Threatened or Endangered Species

Affected Environment

Desert tortoise (G*opherus agassizii*)

The Mojave population of the desert tortoise includes those animals living north and west of the Colorado River in the Mojave Desert of California, Nevada, Arizona, southwestern Utah, and in the Colorado Desert in California. On August 4, 1989, the Service published an emergency rule listing the Mojave population of the desert tortoise as endangered. In its final rule, dated April 2, 1990, the Service determined the Mojave population of the desert tortoise to be threatened. The Service designated critical habitat for the desert tortoise in portions of California, Nevada, Arizona, and Utah in a final rule, published February 8, 1994. Optimal habitat has been characterized as creosote bush//white bursage scrub in which precipitation ranges from two to eight inches, diversity of perennial plants is relatively high, and production of ephemerals is high (Luckenbach 1982, Turner and Brown 1982, Turner 1982, and Schamberger and Turner 1986). Soils must be friable enough for digging of burrows, but firm enough so that burrows do not collapse. In California, desert tortoises are typically associated with gravelly flats or sandy soils with some clay, but are occasionally found in windblown sand or in rocky terrain (Luckenbach 1982).

Desert tortoises are most active in California during the spring and early summer when annual plants are most common. Additional activity occurs during warmer fall months and occasionally after summer rain storms. Desert tortoises spend the remainder of the year in burrows, escaping the extreme conditions of the desert. Further information on the range, biology, and ecology of the desert tortoise can be found in Burge (1978), Burge and Bradley (1976), Hovik and Hardenbrook (1989), Luckenbach (1982), Weinstein et al. (1987), and Service (1994).

Livestock grazing affects desert tortoises in several ways. Desert tortoises can be killed or injured during the construction, maintenance, and use of range improvements. Cattle can be trampled desert tortoises. They also damage or destroy the burrows of desert tortoises. Predators, such as common ravens, can be attracted to and subsidized by livestock waters, carcasses of livestock, and some range improvements; predators attracted to or subsidized by these features could feed on desert tortoises. The construction, maintenance, and use of range improvements would affect desert tortoises in a manner generally similar to other smaller projects. Vehicles and workers could trample desert tortoises during any phase of these operations. In comparison with a large-scale development such as a solar power plant, the construction, maintenance, and use of range improvements likely result in the injury and mortality of few desert

tortoises.

Desert tortoises have been trampled by livestock; trampling can kill or injure desert tortoises either above ground or while they are in their burrows. Although documented instances exist of cattle crushing adult desert tortoises in their burrows, neonate and juvenile desert tortoises are likely at some greater risk of trampling because they use rodent burrows for shelter. Rodent burrows are often shallowly excavated and run parallel to the surface of the ground; therefore, they are more vulnerable to trampling by livestock than burrows of sub-adult and adult desert tortoises. The propensity for rodents to place their burrows near and under shrubs may offer some degree of protection.

No data exist on the frequency at which cattle trample desert tortoises. Cattle likely pose a low degree of risk to adult desert tortoises and possibly sub-adults above ground, simply because cattle would likely try to avoid stepping on what essentially would appear to them to be a rock (Boarman 2002). Cattle would be more likely to trample desert tortoises when they are being herded; while traveling in groups and at a faster rate, cattle are less likely to be aware of their surroundings. A study by Avery and Neibergs in 1997 found that more burrows of desert tortoises were partially or completely destroyed in areas that were grazed by cattle than in an area excluded from grazing. Within the enclosure, desert tortoises remained in their burrows significantly more than animals located outside the enclosure, which would be expected because more burrows were damaged outside of the enclosure. The increased time spent outside of their burrows likely exposes desert tortoises to greater risk of predation and to environmental extremes. Finally, an important concept to consider is that cattle, distributed over large areas of desert tortoise habitat, present a greater likelihood of killing or injuring more desert tortoises than cattle grazing over a smaller area.

Common ravens can be attracted to livestock waters, carcasses of livestock, and some range improvements. Carcasses and range improvements also provide subsidies to common ravens; common ravens are likely better able to survive and have greater reproductive success because of ranching activities. Increasing the number of potential predators poses a greater level of risk of predation to desert tortoises; additionally, common ravens attracted to carcasses and range improvements may also feed on desert tortoises. In a similar vein to that discussed in the previous paragraph, more range improvements over a greater area likely provide greater level of subsidy than a limited number of cattle facilities; large subsidies likely lead to greater numbers of common ravens, which, in turn, would be able to consume more desert tortoises.
We do not have information that conclusively links livestock grazing to recent declines in the numbers of desert tortoises in California. Until recently, the eastern Mojave Desert supported the highest densities of desert tortoises and was also the region most heavily used for cattle grazing. However, when populations of a long-lived animal, such as the desert tortoise, decline so precipitously, the continued loss of individuals in any age class is deleterious to the species= viability. The effects of grazing may function in

combination with other factors in the environment to lower the fitness of desert tortoises. Livestock grazing, as implemented under the direction of the California Desert Conservation Area Plan, likely kills or injures desert tortoises. The magnitude of the mortality of desert tortoises attributable to the trampling of individuals or their burrows and increased predation by common ravens is extremely difficult to quantify, simply because cattle, common ravens, and desert tortoises are so widely distributed.

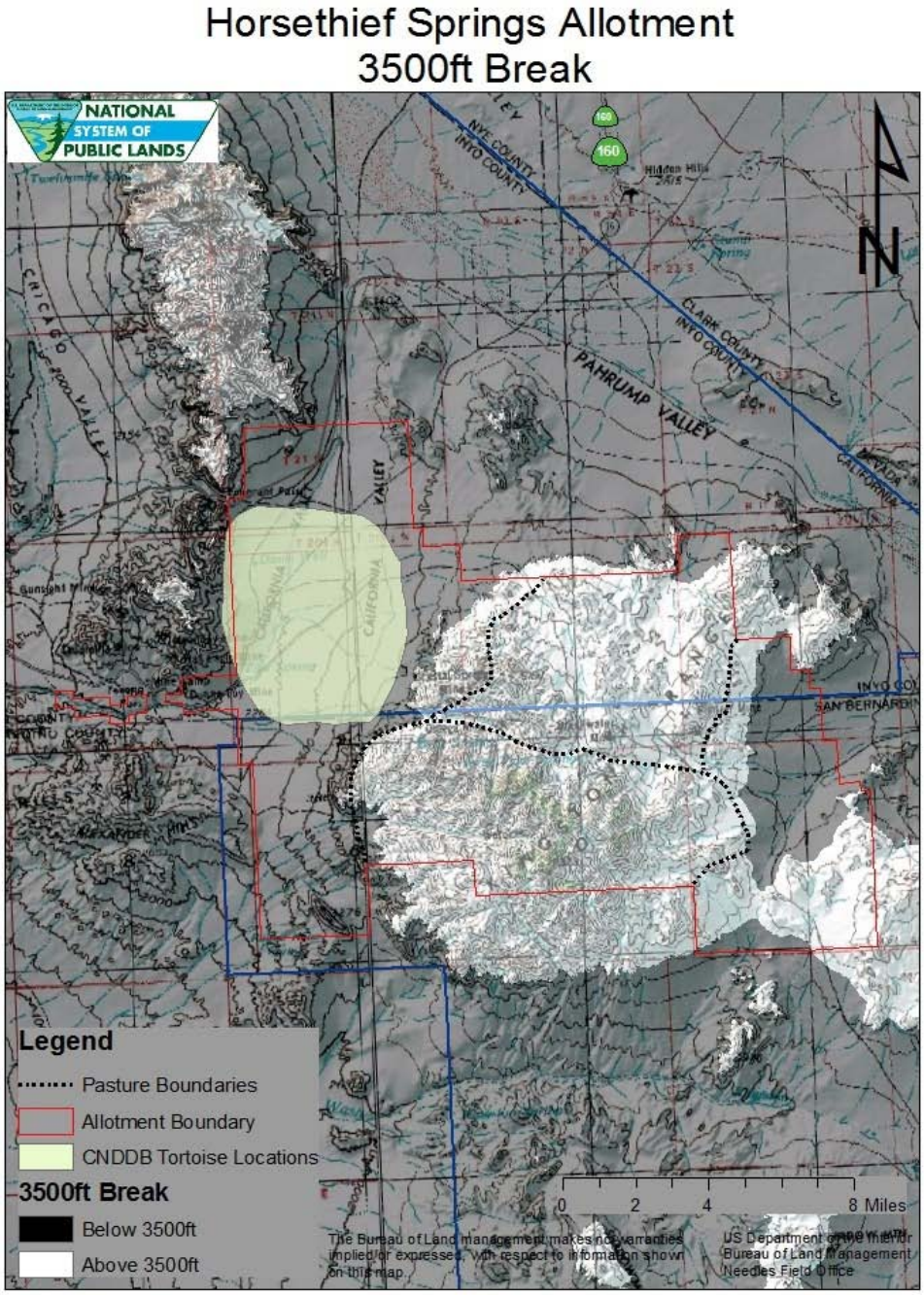
Densities of the desert tortoise that inhabit the HSA are generally quite low as the only suitable habitat is non-DWMA. The highest densities are found in the creosote-white bursage and big galleta vegetation types of the central and northern portions of the allotment, in the 1900 to 4000 foot (elevation with much of the HSA below 3,500 feet (see figure 11) in elevation much of the allotment is tortoise habitat). The remaining Joshua tree woodlands and blackbrush vegetation types are generally too high to support the desert tortoise.

California Valley located in the northwest section of Pasture 2 within the allotment is Category III, desert tortoise habitat. Under the proposed action, any cattle presence would be opportunistic and based upon the ephemeral nature of precipitation events.

While annually authorized grazing on the HSA could result in impacts occurring to some degree, it is at or near the cattle concentration areas where the impacts would be most likely to occur. Trampling of desert tortoises above-ground or in their burrows has not been documented on this allotment.

The Standards of Public Land Health and Rangeland Guidelines for Grazing Uses in the NEMO plan amendment (must be approved by the Secretary of the Interior, see pg. 21) would implement a 30% utilization threshold, at which point cattle would have to be removed entirely or pushed to a different portion of the allotment. The 30% utilization threshold, while less than the 40% threshold allowed under the no action alternative may not result in readily apparent changes. This is because grazing does not occur throughout the allotment, and given that grazing is dispersed over a large area in the allotment where it does occur, existing utilization of perennial forage may not cause a measurable or detectable change for the desert tortoise or its habitat.

Figure 11. Horsethief Springs Allotment map showing 3500ft break and CNDDB reported desert tortoise locations in California Valley. Map's black *Below 3500ft*



The HSA contains elements of desert tortoise habitat, particularly at lower elevations where the dominant vegetation community is creosote-white bursage (much of the HSA below 3,500 feet in elevation s tortoise habitat.) These elements include suitable

substrate for burrowing, vegetation for thermal cover, and forage species. The NEMO plan amendment incorporates mitigation measures to improve recovery of the desert tortoise by reducing the impacts to desert tortoises and their habitat. For example, under the fallback guidelines, utilization of perennial plants may not exceed 40% in any key area. Following implementation of the regional guidelines, utilization of perennial plants may not exceed 30 percent. The NEMO plan amendment limits authorization of temporary, non-renewable perennial forage above permitted grazing use to not exceed three-month increments in non-DWMA desert tortoise habitat. The 2005 Biological Opinion on the NEMO plan amendment states that grazing allotments with an ephemeral/perennial designation will be changed to a perennial designation only and that temporary non-renewable grazing will not be authorized. The HSA falls into this designation and thus temporary non-renewable grazing would not be authorized. Other measures include only allowing authorization for ephemeral forage in non-DWMA tortoise habitat when 230 pounds or more by air-dry weight per acre of ephemeral forage is available. Cattle authorized to use ephemeral forage would be removed whenever the threshold for curtailing ephemeral grazing is reached. The NEMO plan amendment requires that all existing cattle guards be modified and that all new cattle guards be designed to prevent entrapment of desert tortoises. If BLM finds that grazing activities within the allotment is no longer in conformance with the NEMO plan amendment, the NFO would investigate and establish a corrective management action.

The impacts of authorizing grazing in the Horsethief Springs Allotment to desert tortoise were analyzed in the 2005 Biological Opinion. Additional consultation for lease renewal is not necessary (biological opinion, page 6), assuming that all parameters of the grazing lease are in accordance with the provisions of the NEMO plan amendment. The biological opinion states, "…cattle grazing is not likely to affect desert tortoise populations in a substantial manner in the three allotments [including Horsethief Springs Allotment] located outside of Desert Wildlife Management Areas and critical habitat units in the northern and eastern Mojave Desert bioregion." As summarized by the biological opinion, "All of the measures proposed or enacted by the Bureau with regard to grazing are likely to reduce the number of desert tortoises that may be killed as a result of the management of livestock." Therefore, grazing within the Horsethief Springs Allotment and its associated management is not likely to alter the current status of the desert tortoise in the Eastern Mojave Recovery Unit because of the low level of grazing that it usually supports.

Environmental Consequences

Impacts of Proposed Action

Grazing can have direct and indirect effects on the desert tortoises and its habitat. A summary of these impacts has been provided in the NEMO plan amendment (pages 4-14 to 4-17 and 4-43 to 4-48) and includes trampling of desert tortoises above ground or in their burrows, reduction in forage, reduction in cover, soil compaction, damage to soil

crusts and introduction of non-native plants. While annually authorized grazing in the Horsethief Springs Allotment could result in all of these impacts occurring to some degree, it is at or near the cattle concentration areas where the impacts would be most likely to occur. Trampling of desert tortoises above-ground or in their burrows has never been documented on this allotment. The Standards of Public Land Health and Rangeland Guidelines for Grazing Uses in the NEMO plan amendment (must be approved by the Secretary of the Interior, see pg. 21) would implement a 30% utilization threshold, at which point cattle would have to be removed entirely or pushed to a different portion of the allotment. The 30% utilization threshold, while less than the 40% threshold allowed under the no action alternative may not result in readily apparent changes. This is because grazing does not occur throughout the allotment, and given that grazing is dispersed over a large area in the allotment where it does occur, existing utilization of perennial forage may not cause a measurable or detectable change for the desert tortoise or its habitat.

The Horsethief Springs Allotment contains elements of desert tortoise habitat, particularly at lower elevations where the dominant vegetation community is creosote-white bursage. These elements include suitable substrate for burrowing, vegetation for thermal cover, and forage species. The NEMO plan amendment incorporates mitigation measures to improve recovery of the desert tortoise by reducing the impacts to desert tortoises and their habitat. For example, under the fallback guidelines, utilization of perennial plants may not exceed 40 percent in any key area. Following implementation of the regional guidelines, utilization of perennial plants may not exceed 30 percent. The NEMO plan amendment also limits authorization of temporary, non-renewable perennial forage above permitted grazing use to not exceed three-month increments in non-DWMA desert tortoise habitat. The 2005 Biological Opinion on the NEMO plan states that grazing allotments with an ephemeral/perennial designation will be changed to a perennial designation only and that temporary non-renewable grazing will not be authorized. The HSA falls into this designation and thus temporary non-renewable grazing will not be authorized. Other measures include only allowing authorization for ephemeral forage in non-DWMA tortoise habitat when 230 pounds or more by air-dry weight per acre of ephemeral forage is available. Cattle authorized to use ephemeral forage would be removed whenever the threshold for curtailing ephemeral grazing is reached. If the Bureau finds that grazing activities within the allotment is no longer in conformance with the NEMO plan amendment, the Bureau would investigate and establish a corrective management action.

Until the time in which The Standards of Public Land Health and Rangeland Guidelines for Grazing Uses in the NEMO plan amendment are approved by the Secretary of the Interior, the Fallback Standards and Guidelines for Livestock Grazing would be followed.

Impacts of No Action (Current Management)

Maintaining the fallback guidelines (not to exceed 40%) for utilization of perennial plants on the Horsethief Springs allotment would be a continuation of the existing grazing regime. The impacts from this somewhat elevated utilization threshold (compared to the proposed action) would be essentially the same as those for the proposed action. The primary difference, if one is evident, would be that the severity of impacts would be somewhat greater in the cattle concentration areas because cattle could stay on-site longer.

Impacts of No Grazing

The removal of cattle grazing from the Horesthief Springs Allotment would be beneficial to the desert tortoises and associated habitat. However, given the dispersal level of cattle on the allotment and that the majority of grazing takes place outside of habitat likely to contain desert tortoise a discernible change in the quality of habitat is unlikely to be detected.

Vegetation

Affected Environment

The Horsethief Springs Allotment contains a variety of vegetation series, such as creosote-white bursage, big galleta, Joshua tree woodlands, blackbush, and riparian areas. Shrub and tree species noted in the allotment include creosote bush (*Larrea tridentata*), white bursage (*Ambrosia dumosa*), ratany (*Krameria* spp.), rabbitbrush (*Chrysothamnus* spp.), blackbush (*Coleogyne ramosissima*), Mexican bladdersage (*Salazaria mexicana*), Joshua tree (*Yucca brevifolia*), big sagebrush (*Artemisia tridentata*), California juniper (*Juniperus californica*), winterfat (*Ceratoides lanata*), desert willow (*Chilopsis linearis*), desert lavender (*Hyptis emoryi*), ephedras (*Ephedra* spp.), cheesebush (*Hymenoclea salsola*), box-thorn (*Lycium* spp.), and saltbushes (*Atriplex* spp.). Predominant succulent species in the allotment include chollas and prickly-pears (*Opuntia* spp.), Mojave yucca (*Yucca schidigera*), cottontop cactus (*Echinocactus polycephalus*), and California barrel cactus (*Ferocactus cylindraceus*). Annual and perennial herbaceous species and grasses include species such as: big galleta (*Hilaria rigida*), galleta grass (*Hilaria jamesii*), buckwheats (*Eriogonum* spp.), plantain (*Plantago* spp.), Indian ricegrass (*Oryzopsis hymenoides*), wire-lettuce (*Stephanomeria* spp.), penstemon (*Penstemon* spp.), wild rhubarb (*Rumex* sp.), and spineflower (*Chorizanthe* spp.). This allotment also contains the Kingston Range relict white fir (*Abies concolor*) stands unique plant assemblage (UPA) and the Kingston Range giant nolina (*Nolina parryi*) UPA.

Key species and other palatable species utilized by cattle on this allotment include needle grass and Indian ricegrass (*Achnatherum* spp.), bromes (*Bromus* spp.), mediterranean grass (*Schismus* spp.), ephedra (*Ephedra* spp.), fluff grass (*Erioneuron pulchellum*), galleta grass (*Hilaria rigida*.), alkali sacaton (*Sporobolus airoides*), white

bursage (*Ambrosia dumosa*), ratany (*Krameria* spp.), saltbush (*Atriplex* spp.), winterfat (*Ceratoides lanata*), brittlebush (*Encelia farinosa*), yerba mansa (*Anemopsis californica*) and desert willow (*Chilopsis linearis*).

Although overgrazing (or over-browsing of shrubs) is not seen as a pervasive problem on the allotment, the on-going practice of having small herds of cattle grazing for long continuous time periods has led to "type conversion" around some water sources. This is confined to a somewhat concentric (depending on terrain) ring around each water source; the ring is up to a half mile but generally a quarter mile or less. Non-native grasses and forbs replace the native species in type conversion, and in some cases, the non-natives may flourish.

Unusual Plant Assemblages

The Horsethief Springs Allotment contains the 264-acre White Fir UPA and the 22,977 acre Giant Nolina UPA. The white firs exist at the higher elevations of the Kingston Range in extremely difficult terrain that is not typically visited by cattle. Cattle can easily access giant nolina habitat but are not known to use this species. Wildfires are the primary threat to both species.

Highly Sensitive		
	Vegetation associated with springs and seeps Basic Rupicola Assemblage	Wildhorse, Crystal and Horsethief Springs Northern and northeastern areas of the Kingston Range between 2,800 to 6,200 feet in elevation
Very Sensitive UPA		
	Kingston Mountain White Fir Stand	Pasture 1 of the allotment between 6,000 and 7,200 feet in elevation
Sensitive UPA		
	Giant Nolina	Kingston Range between 3,200 to 7,300 feet in elevation

Sensitive Species

The following California BLM sensitive plants could potentially occur in the Horsethief Springs Allotment: Kingston bedstraw (*Galium hilendiae* ssp. *Kingstonense*), Kingston Mountains ivesia (*Ivesia patellifera*), Stephen's beardtongue (*Penstemon stephensii*) and Rusby's desert-mallow (*Sphaeralcea rusbyi* var. *eremicola*). The California Native Plant Society (CNPS) does not list grazing as a threat to Kingston bedstraw. Grazing is listed as a threat to the Rusby's desert-mallow; CNPS lists no threats to the Kingston Mountains ivesia or the Stephen's beardtongue (CNPS 2008).

Environmental Consequences

Impacts of Proposed Action

The allotment was assessed for rangeland health in 1998 and 1999. The allotment was determined to be meeting all standards at that time.

Impacts associated with cattle grazing would be slight with the implementation of the proposed terms and conditions, including Standards and Guidelines, maintenance of range improvements, and biological opinion stipulations, along with grazing strategies that require proper cattle distribution and periodic rest of individual grazing use areas during the critical growing season.

Formation of a single herd of cattle within the allotment in accordance with the HSA AMP would help to prevent and reverse type conversion around water troughs and other livestock congregation areas when combined with the proposed rest rotation. This rest rotation provides for year-long rest periods from grazing cattle that will allow the vegetation to be vigorous and set seed replenishing the seed bank. And, rest rotation grazing ensures a seed stock for continued recruitment of plant species.

In any environment, overgrazing and damage from trampling bears little relationship to the number of animals, but rather to the amount of time plants and soils are exposed to the animals. As in the case of grasses, over-browsing bears no relationship to the number of animals, only to the proportion of leaf removed and the time that a plant has to regenerate (Savory 1999). Additional rest would benefit grasses and shrubs, thus improving the resource's ability to function as the wildlife habitat that it always has been and support sustainable grazing use.

Unique Plant Assemblages

There would be no impact to the Kingston Range relict white fir stands UPA and the Kingston Range giant nolina UPA. The white fir is located at such high elevations that cattle would not graze in that region and, the giant nolina is unpalatable to cattle.

Cattle may trample vegetation resulting in a decrease in vigor or complete elimination of vegetation from riparian areas. Hoof action typically creates divots in wet soils, can increase erosion, and can create poor water quality at springs. The degenerative impacts of cattle intrusion at springs can be avoided by fencing cattle out of springs.

Sensitive Species

Although not much is known about Kingston bedstraw (*Galium hilendiae* ssp. *Kingstonense*), Kingston Mountains ivesia (*Ivesia patellifera*), and Stephen's beardtongue (*Penstemon stephensii*) which may be found on the allotment, are unlikely

to be impacted by cattle grazing as they grow in rocky terrain in higher elevations where there are very low densities of cattle grazing. Rusby's desert-mallow (*Sphaeralcea rusbyi* var. *eremicola*), which is also found on the allotment, grows at lower elevations and is subject to cattle grazing (CNPS 2008). Flexibility provided by the allotment's numerous water sources should encourage cattle to graze at higher elevations and away from sites where this species is known to exist.

Impact of No Action (Current Management)

The no action alternative would leave current grazing practices in place. Although severe impacts from overgrazing /over-browsing are not evident on the allotment on a widespread basis, localized type conversion can be found near some of the water sources. Sensitive plant species exist closest to the greatest concentration of water sources, in the south and southeast portions of the allotment.

Impacts of No Grazing

No annual or perennial vegetation would be trampled or removed by cattle. Isolated un-grazed pockets of vegetation would act as a seed source to repopulate areas that had seen type conversion due to grazing. Bunch grasses and other perennial vegetation would start to grow in the interspace between shrubs. Standing biomass levels would increase. The speed of recovery to areas that have been damaged would depend on amount and location of seed sources and precipitation levels.

Surface and Ground Water Quality

Affected Environment

The Horsethief Springs Allotment is located in the Pahrump, Mesquite, Amargosa, and Mojave watersheds. Surface water exists primarily as runoff during storm events and one perennial stream, Moqua Creek, exist within the allotment. Groundwater aquifers underlie the basin areas at depths up to several hundred feet. Two unapproved well casings exist on the allotment that produce no water for above ground use. All water for livestock either comes from the Horsethief Springs pipeline or ephemeral pools that occur throughout the allotment.

Too little information exists to determine groundwater recharge rates for the groundwater basins which underlie the grazing allotment. However, based upon livestock water consumption standards of 7 to 12 gallons per day, 202 head of livestock would consume anywhere from 1,414 to approximately 2,424 gallons of water per day. Water quality is suitable for domestic use in most areas. Spring sites do exist in the allotment with one length of stream at the Horsethief Springs site. See Critical Element Wetlands and Riparian Zones for additional discussion.

Environmental Consequences

A. Impacts of Proposed Action

No impacts to surface water are anticipated as surface water exists only as runoff during storm events.

Minimal impacts to ground water are anticipated..

B. Impacts of No Action (Current Management

Same as above.

C. Impacts of No Grazing

Same as above.

Wetlands/Riparian Zones

Affected Environment

Springs provide much needed water to wildlife species that require a perennial water source. Both game and non-game species routinely visit springs in the desert. Endemic micro fauna can also be found inhabiting these water sources.

Water sources in the Mojave Desert are rare and occur as seeps and springs. Springs are generally small and are associated with prominent mountain ranges. The "typical" spring, seep, or riparian area consists of trees, cat-tails/reeds, ferns, grasses, *Carex* spp, or *Juncus* spp. and a few shrub or small tree species, except where Tamarisk has come to dominate exclusively. Spring sites over five acres have plant communities with larger trees/shrubs. The following plants have been found at these spring sites: *Salix* (*S. gooddingii, S. exigua*), *Populus, Prosopis, Celtis*, and/or tamarisk. Shrubs at these sites are *Baccharis, Salix,* and *Chilopsis spp.* Grasses include *Eragrostis, Sporobolus*, and *Poa* species. Other plants common to spring sites are *Juncus, Carex, Phragmites, Salix spp.*, tamarisk, and the introduced giant arundo, *Arundo donax*.

TABLE 10: Springs Information:

Name	Inventory Date	PFC Rating	Non-Natives	Trend	Cattle Accessible	Fenced Off
Horsethief[1.]	2008	Functioning at Risk (FAR)	Yes	Upward	No	Yes
Crystal[2.]	2008	FAR	Yes	Upward	No	Yes
Wild	2008	FAR	Yes		No	Yes

Horse[5.]				Upward		
Since these spring sites have been fenced, PFC is change to Functioning at Risk but with an upward trend.						

Environmental Consequences

Impacts of Proposed Action

Because these spring sites have been fenced, the Proposed Action would not result in impacts to the spring site riparian areas.

Impacts of No Action (Current Management).

Same as the proposed action

Impacts of No Grazing

Same as the Proposed Action.

Wilderness

Affected Environment

The Wilderness Act directs that wilderness areas be managed to provide for their protection, the preservation of their natural conditions, and the preservation of their wilderness character. According to the Act, "each agency administering any area designated as wilderness is responsible for preserving the wilderness character of the area and shall so administer such areas for such other purposes for which it may have been established as also to preserve its wilderness character. Except as otherwise provided in the Act, wilderness areas shall be devoted to the public purposes of recreational, scenic, scientific, educational, conservation, and historical use."

The Wilderness Act further defines wilderness as "an area of undeveloped Federal land retaining its primeval character and influence, without permanent improvements or human habitation, which is protected and managed so as to preserve its natural conditions and which (1) generally appears to have been affected primarily by the forces of nature, with the imprint of man's work substantially unnoticeable..."

Livestock grazing in wilderness is in conformance with the Wilderness Act of 1964 and the 1994 California Desert Protection Act. The Wilderness Act, Section 4(D)(4)(2) 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. The 1985 Horsethief Springs Allotment Management Plan and the rotation schedule of Pastures 1, 2, 3A & 3B, were

implemented prior to designation.

The grazing of livestock in BLM wilderness areas is regulated under 43 CFR 6304.25, and guided by BLM manual 8560.15 (G). BLM Manual 8560.15 (G) states, "Congressional guidelines regarding "Grazing in National Forest Wilderness Areas," published in House Report 96-1126, dated June 24, 1980, must be implemented in all BLM-administered wilderness with pre-existing grazing." These guidelines state, "The maintenance of supporting facilities, existing in an area prior to its classification as wilderness, is permissible in wilderness. Where practical alternatives do not exist, maintenance or other activities may be accomplished through occasional use of motorized equipment." However, the grazing guidelines also emphasize that all reasonable measures must be taken to minimize the impact of grazing activities on wilderness character and to protect other resource values.

The Wilderness Act directs that wilderness areas be managed to provide for their protection, the preservation of their natural conditions, and the preservation of their wilderness character. Factors are referred to in FLPMA collectively as "wilderness characteristics," and they fall into three broad categories Naturalness, Outstanding Opportunities for Solitude, and Primitive and Unconfined Type of Recreation.

Congress specified that wilderness areas "may also contain ecological, geological, or other features of scientific, educational, scenic, or historical value." These values are referred to under Special Features; in some cases they may be a prime reason for wilderness designation. Wilderness areas must be managed to ensure that these features are not degraded.

Naturalness: A wilderness area "generally appears to have been affected primarily by the forces of nature, with the imprint of man's work substantially unnoticeable." Wilderness areas must be managed to ensure that this description remains accurate.

Outstanding Opportunities for Solitude: solitude is the state of being alone, remote from habitations; isolation, avoid of sights, sounds and evidence of other people within a particular area.

Primitive and Unconfined Type of Recreation: Primitive and unconfined recreation is an activity that provides dispersed, undeveloped recreation which do not require facilities or motorized equipment.

Special Features: These features were surveyed and reported in the 1990 California Statewide Wilderness Study Report inventories prior to the 1994 Wilderness designations.

1. North Mesquite Wilderness: The Horsethief Springs Allotment includes approximately 5,724 acres of the North Mesquite Wilderness Area. Most of the

cattle grazing in wilderness on the allotment occurs in the northwestern portion of the wilderness adjacent to Excelsior Mine Road. Approximately 35% of pasture 3B is contained within the North Mesquite Wilderness.

Naturalness: The forces of nature affect the majority of the North Mesquite Wilderness Area, with man's work being substantially unnoticeable. The opportunity to experience this area without evidence of man is limited by the presence of cattle, and fencing.

Solitude: The size, shape, and diversity of terrain and vegetation all contribute to opportunities for solitude available within wilderness. In the North Mesquite Wilderness, these opportunities are easily attainable within the canyons and hill tops of the North Mesquite Mountains. Recreational traffic upon the Excelsior Mine Road and the periodic low level military flights within their flight corridors result in temporary effects on solitude.

Primitive and unconfined recreation: This wilderness area provides ample opportunities for a primitive recreational experience; visitor use outside of the Horsethief Camp is unknown at this time.

Special features: There are no special features within this wilderness.

2. Kingston Range Wilderness: The Horsethief Springs Allotment includes approximately 31,866 acres of the Kingston Range Wilderness. In this wilderness most grazing occurs is in the northern portion of the wilderness adjacent to California Valley and northeast near Horse Thief Springs. Approximately 25% of pasture 3B, 85% of pasture 1, and 15% of pasture 2, is contained within the Kingston Range Wilderness.

   Naturalness: The forces of nature affect the majority of the wilderness with man's work being substantially unnoticeable. The opportunity to experience this area without the evidence of man is limited by the presence of cattle, water sites, and fencing.

   Solitude: The size, shape and diversity of terrain and vegetation all contribute to opportunities for solitude available within wilderness. In this wilderness, these opportunities exist throughout the entire range. The bajadas in the south and southeast corners of the wilderness plus those in the northwest offer ample opportunities different from those found at higher elevations. Recreational traffic on the Excelsior Mine Road and the periodic low level military operations create periodic temporary effects on solitude.

   Primitive and unconfined recreation: The Kingston Range is often regarded as an island located in the middle of a desert due to the wooded areas located at

higher elevations completely surrounded by desert vegetation. Therefore this wilderness unit offers a diverse range of biomes resulting in outstanding opportunities for primitive and unconfined types of recreation.

Special features: There are several geologic formations within the area containing important fossil evidence of over 1,200 million years.

Five UPAs occur either totally or partially within the wilderness area. The first UPA supports riparian vegetation areas such as those found near Horse Thief Springs and Crystal Spring. The second are stands of giant Nolina (*Nolina wolfii)*, which occur on the slopes and ridges of Tecopa Pass and along steep, rocky exposed slopes from 3,200 to 7,300 feet in elevation, some of them as much as 25 feet in length and over ten feet in diameter. The giant Nolina, with its tree-like stature and yucca-like form has a discontinuous distribution across the Mojave Desert and its occurrence in the eastern Mojave Desert is limited to the Kingston Range. The third unusual plant assemblage is a calciphyte assemblage of rare limestone endemics and the forth, a small enclave of white fir (*Abies concolor)* scattered between 6,900 and 7,300 feet. This is one of three relic stands of white fir in the California Desert.

High elevations wooded with pinyon pine, juniper and white fir attract a number of species of birds. Good nesting and foraging habitat for raptors such as golden eagles, prairie falcons, and red-tailed hawks exists in the Kingston Range Wilderness.

The desert tortoise is found on the adjacent bajadas and valley floors in creosote bursage habitat. Rare sightings of the banded Gila monster (*Heloderma suspectum)* have been made within the allotment limits. Desert bighorn traverse the Kingston Range in their movements along the Mesquite Mountains, toward the Spring Mountains to the north in Nevada.

The Kingston Range is also highly concentrated with cultural resources.

3. South Nopah Wilderness: The Horsethief Springs Allotment contains approximately 3,439 acres of the South Nopah Wilderness. Approximately 15% of pasture 2 is contained within the South Nopah Wilderness. Developed water sources did not exist in California Valley prior to the 1994 wilderness designations.

   Naturalness: The forces of nature affect the majority of the wilderness with man's work being substantially unnoticeable. The opportunity to experience this area without the evidence of man is limited by the presence of cattle, and fencing.

Solitude: Due to the relatively small size and location to paved roads this wilderness unit can be considered similar to front county location. Solitude is limited to canyons and high terrain located to the heart of the unit. The bajadas in the east and northwest corners of the wilderness offer limited opportunities for this experience as they are negatively influenced by sounds of vehicle traffic on the corridor between the communities of Pahrump and Tecopa a south portal to Death Valley National Park. Recreational traffic upon the Furnace Creek Wash Road, Western Talc Road, and California Valley Road plus the periodic low level military approved operations within the flight corridors and their associated noise create periodic temporary effects on solitude.

Primitive and unconfined recreation: The rugged character of the South Nopah Wilderness and its deep canyons, results in outstanding opportunities for primitive and unconfined types of recreation.

Special features: Desert bighorn a BLM sensitive species traverses the area in their movements between the Kingston's and Nopah Wilderness units.

4. Nopah Wilderness: Approximately 1,796 acres of the most southeastern corner of the Nopah Wilderness is located within the Horsethief Allotment. This portion of the allotment is located north of the Old Spanish Trail Highway and is adjacent to California Valley. Approximately 10% of pasture 2 is contained within the Nopah Wilderness. Developed water sources did not exist in California Valley prior to the 1994 wilderness designations.

Naturalness: The forces of nature affect the majority of the wilderness with man's work being substantially unnoticeable. The opportunity to experience this area without the evidence of man is limited by the presence of cattle, and fencing.

Solitude: The size, shape and diversity of terrain and vegetation all contribute to opportunities for solitude available within wilderness. In this wilderness, these opportunities are easily attainable within the shallow canyons, steep interior mountain range, and upon the numerous sloping bajadas. The large numbers of visitors utilizing the Old Spanish Trail Highway to access the southern route into Death Valley National Park, affects the opportunity of solitude within the wilderness altering the character to a front country zone. Recreational traffic and the periodic low level military approved operations within the flight corridors and their associated noise create periodic temporary effects on solitude.

Primitive and unconfined recreation: The rugged character of the Nopah Range Wilderness and its diverse landscape results in outstanding opportunities for primitive and unconfined types of recreation.

Special features: The Nopah bighorn sheep herd and other transient groups may be sited within the wilderness unit. The unit also contains golden eagle and prairie falcon eyries and suitable desert tortoise habitat.

Stephens penstemon (Penstemon stephensii), which is State listed as Rare and endangered, and also the ivory-spined agave (Agave utahensis var. eborispina) may also be located within the area.

The area has been traditionally used by numerous Native American tribes.

5. Pahrump Valley Wilderness: Approximately 16,613 acres of the Horsethief allotment are included within the Pahrump Valley Wilderness Unit. Most of the grazing within this wilderness occurs on the southwestern portion of the wilderness adjacent to Excelsior Mine Road. Per the Horsethief Springs Allotment Management Plan approximately 60% of pasture 3A, 20% of pasture 3B, and 15% of pasture 2 is contained within the Pahrump Valley Wilderness. Developed water sources did not exist in California Valley prior to the 1994 wilderness designations.

   Naturalness: The wilderness is characterized by mountains, enclosed valleys, and bajadas that are essentially void of human intrusions. Several old vehicle routes, grandfathered range improvements, and mining scars impact the interior of the wilderness. The forces of nature affect the majority of the wilderness with man's work being substantially unnoticeable. The opportunity to experience this area without the evidence of man is limited by the presence of cattle, water sites, and fencing.

   Solitude: Opportunities for solitude are available. The mountains and intimate canyons would allow visitors to experience the feeling of isolation. On the bajadas, lack of vegetative screening and topographic diversity reduces opportunities.

   Primitive and unconfined recreation: A well defined travel system adjacent to wilderness results in outstanding opportunities to access primitive and unconfined types of recreation. The rugged mountains and canyons lend themselves to such activities as backpacking, peak climbing, day hiking, and nature study. However, the large number of old vehicle trails and grandfathered range improvements do have a limiting affect.

   Special features: there are no special features. The landforms, ecological diversity, and geological features are not unusual; they are typical of features common throughout the surrounding deserts and mountains.

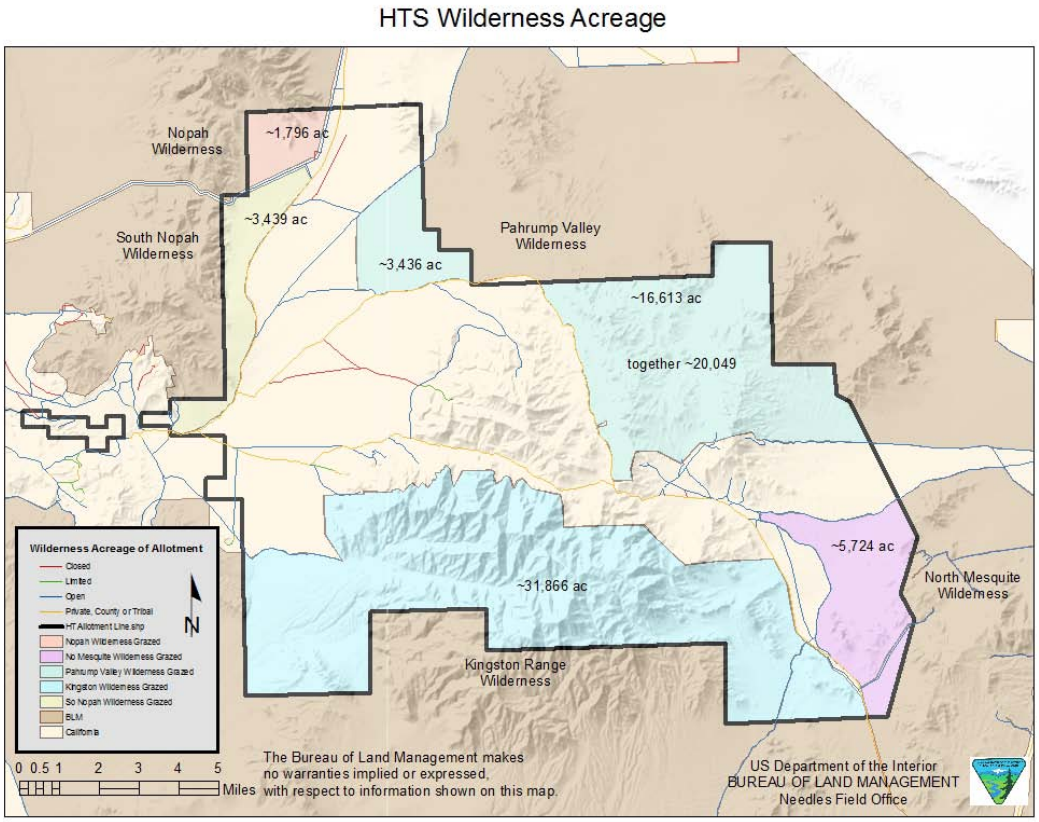


Figure 12. Grazing Activity in Wilderness

Environmental Consequences

Impacts of Proposed Action

1. North Mesquite Wilderness Area:

Naturalness: The presence of “man’s work” is evident on the landscape, the presence of ranching facilities such as access points into wilderness, and vehicle routes are highly visible on the landscape. Limiting the number of routes and periods of time vehicles may access administrative routes for maintenance and care of facilities, and the quantity and period of time animals graze within a pasture would reduce the impact to the area and thereby improve the level of naturalness to the wilderness unit.

Solitude: Occasional use of motorized equipment, and the sights and sounds associated with range maintenance may affect wilderness character and fail to fulfill the visitor expectation of solitude. Present actions are similar to what was occurring at the time of designation. The Lessee would make infrequent but necessary trips into the allotment to maintain range improvements, or to move

animals to market. Limiting the periods of time animals and maintenance occurs within a pasture would increase the opportunities for solitude by the recreational visitor.

Primitive and Unconfined Recreation: The effects of the proposed action on primitive and unconfined recreation would be very similar to the effects on solitude. Backcountry recreationists (hikers, campers) would continue to encounter cattle, range improvements, or grazing operations (motor vehicles, maintenance equipment) undesirable in a wilderness setting.

Special Features: There are no special features within this wilderness. Any unique Plant Assemblages within the area are likely to be affected the most from year round grazing. Cultural Sites will continue to be impacted but for a shorter duration. Maintaining a rotation calendar will assist on reducing any stresses they may sustain from grazing. Any unknown special features could continue to be impacted until identified through monitoring.

2. Kingston Range Wilderness Area:

Naturalness: The presence of “man’s work” is evident on the landscape, the presence of ranching facilities such as access points into wilderness, and vehicle routes are highly visible on the landscape. Limiting the number of routes and periods of time vehicles may access administrative routes for maintenance and care of facilities, and the quantity and period of time animals graze within a pasture would reduce the impact to the area and thereby improve the level of naturalness to the wilderness unit.

Solitude: Occasional use of motorized equipment, and the sights and sounds associated with range maintenance may affect wilderness character and fail to fulfill the visitor expectation of solitude. Present actions are similar to what was occurring at the time of designation. The Lessee would make infrequent but necessary trips into the allotment to maintain range improvements, or to move animals to market. Limiting the periods of time animals and maintenance occurs within a pasture would increase the opportunities for solitude by the recreational visitor.

Primitive and Unconfined Recreation: The effects of the proposed action on primitive and unconfined recreation would be very similar to the effects on solitude. Backcountry recreationists (hikers, campers) would likely consider encountering cattle, range improvements, or grazing operations (motor vehicles, maintenance equipment) undesirable in a wilderness setting.

Special Features: Any unique Plant Assemblages within the area are likely to be affected the most from year round grazing. Cultural Sites will continue to be

impacted but for a shorter duration. Maintaining a rotation calendar will assist on reducing any stresses they may sustain from grazing. Any unknown features could continue to be impacted unless identified through monitoring and addressed for protection.

3. South Nopah Wilderness

   Naturalness: The presence of “man’s work” is evident on the landscape, the presence of ranching facilities such as access points into wilderness, and vehicle routes are highly visible on the landscape. Limiting the number of routes and periods of time vehicles may access administrative routes for maintenance and care of facilities, and the quantity and period of time animals graze within a pasture would reduce the impact to the area and thereby improve the level of naturalness to the wilderness unit.

   Solitude: Occasional use of motorized equipment, and the sights and sounds associated with range maintenance may affect wilderness character and fail to fulfill the visitor expectation of solitude. Present actions are similar to what was occurring at the time of designation. The Lessee would make infrequent but necessary trips into the allotment to maintain range improvements, or to move animals to market. Limiting the periods of time animals and maintenance occurs within a pasture would increase the opportunities for solitude by the recreational visitor.

   Primitive and Unconfined Recreation: The effects of the proposed action on primitive and unconfined recreation would be very similar to the effects on solitude. Backcountry recreationists (hikers, campers) would likely consider encountering cattle, range improvements, or grazing operations (motor vehicles, maintenance equipment) undesirable in a wilderness setting.

   Special Features: Any unique Plant Assemblages within the area are likely to be affected the most from year round grazing. Cultural Sites will continue to be impacted but for a shorter duration. Maintaining a rotation calendar will assist on reducing any stresses they may sustain from grazing. Any unknown features could continue to be impacted unless identified through monitoring and addressed for protection.

4. Nopah Range Wilderness

   Naturalness: The presence of “man’s work” is evident on the landscape, the presence of ranching facilities such as access points into wilderness, and vehicle routes are highly visible on the landscape. Limiting the number of routes and periods of time vehicles may access administrative routes for maintenance and care of facilities, and the quantity and period of time animals graze within a

pasture would reduce the impact to the area and thereby improve the level of naturalness to the wilderness unit.

Solitude: Occasional use of motorized equipment, and the sights and sounds associated with range maintenance may affect wilderness character and fail to fulfill the visitor expectation of solitude. Present actions are similar to what was occurring at the time of designation. The Lessee would make infrequent but necessary trips into the allotment to maintain range improvements, or to move animals to market. Limiting the periods of time animals and maintenance occurs within a pasture would increase the opportunities for solitude by the recreational visitor.

Primitive and Unconfined Recreation: The effects of the proposed action on primitive and unconfined recreation would be very similar to the effects on solitude. Backcountry recreationists (hikers, campers) would likely consider encountering cattle, range improvements, or grazing operations (motor vehicles, maintenance equipment) undesirable in a wilderness setting.

Special Features: Any unique Plant Assemblages within the area are likely to be affected the most from year round grazing. Cultural Sites will continue to be impacted but for a shorter duration. Maintaining a rotation calendar will assist on reducing any stresses they may sustain from grazing. Any unknown features could continue to be impacted unless identified through monitoring and addressed for protection.

5. Pahrump Valley Wilderness

Naturalness: The presence of “man’s work” is evident on the landscape, the presence of ranching facilities such as access points into wilderness, and vehicle routes are highly visible on the landscape. Limiting the number of routes and periods of time vehicles may access administrative routes for maintenance and care of facilities, and the quantity and period of time animals graze within a pasture would reduce the impact to the area and thereby improve the level of naturalness to the wilderness unit.

Solitude: Occasional use of motorized equipment, and the sights and sounds associated with range maintenance may affect wilderness character and fail to fulfill the visitor expectation of solitude. Present actions are similar to what was occurring at the time of designation. The Lessee would make infrequent but necessary trips into the allotment to maintain range improvements, or to move animals to market. Limiting the periods of time animals and maintenance occurs within a pasture would increase the opportunities for solitude by the recreational visitor.

Primitive and Unconfined Recreation: The effects of the proposed action on primitive and unconfined recreation would be very similar to the effects on solitude. Backcountry recreationists (hikers, campers) would likely consider encountering cattle, range improvements, or grazing operations (motor vehicles, maintenance equipment) undesirable in a wilderness setting.

Special Features: There are no special features within this wilderness. Any unique Plant Assemblages within the area are likely to be affected the most from year round grazing. Cultural Sites will continue to be impacted but for a shorter duration. Maintaining a rotation calendar will assist on reducing any stresses they may sustain from grazing. Any unknown features could continue to be impacted unless identified through monitoring and addressed for protection.

B. Impacts of No Action (Current Management)

Same as the proposed action.

C. Impacts of No Grazing

The No Grazing alternative would enhance the wilderness characteristics of the North Mesquite Mountains, Kingston Range, South Nopah, Nopah and Pahrump Valley Wilderness Units due to the elimination of both the number of cattle within the wilderness units and the number of trips the rancher would make on administrative routes into wilderness. This will overall improve the naturalness of the area, improving opportunities for solitude and a primitive type of recreation by reducing the need for ranchers to operate and maintain cattle grazing in wilderness.

Wildlife

Special Status Wildlife

Portions of the HSA are suitable desert bighorn (Ovis canadensis) habitat. The desert bighorn is a BLM sensitive species. Bighorn sheep typically occupy steep, mountainous, open terrain, although migration between mountain ranges through valleys has been documented (Bleich et al. 1990).

The banded Gila monster (Heloderma suspectum cinetum), listed as a species of special concern by the CDFG and a BLM sensitive species, has been sighted in rare instances in the HSA. The Gila monster typically occupies rocky outcrops and natural crevices.

Habitat for burrowing owl (Athene cunicularia), and gray vireo (Vireo vicinior), which are BLM sensitive species, may also occur within the proposed allotment. The gray vireo is known to nest in the Kingston Mountains.

Habitat for seven bat species can be found throughout the allotment. These bat species are; Big brown bat (*Eptesicus fuscus*), California myotis (*Myotis californicus pallidus*) and (*Myotis californicus stephensi*), Fringed myotis (*Myotis thysanodes*), Long-legged myotis (*Myotis volans*), Western pipistrelle (*Pipistrellus hesperus*), and rafinesque's big-eard bat (*Plecotus rafinesquii*).

General Wildlife

Other mammals occurring in the area include cottontail rabbit (Sylvilagus auduboni), black-tail jackrabbit (Lepus californicus), mule deer (Odocoileus hemionus), kit fox (Vulpes macrotis), antelope ground squirrel (Ammospermophilus leucurus), coyote (Canis latrans), kangaroo rats (Dipodomys spp.), western pipistrel (Pipistrellus hesperus), and woodrats (Neotoma spp.).

The allotment includes habitat for common reptilian species, such as side-blotched lizard (Uta stansburiana), zebra-tailed lizard (Callisaurus draconoides), leopard lizards (Gambelia spp.), rattlesnakes (Crotalus spp.), western whiptail (Cnemidophorus tigris), desert horned lizard (Phrynostoma platyrhinos), and various other snake and lizard species.

The habitat types found in the allotment can contain a wide range of bird species, such as black-throated sparrow (Amphispiza bilineata), common raven (Corvus corax), white-crowned sparrow (Zonotrichia leucophrys), Brewer's sparrow (Spizella breweri), red-tailed hawk (Buteo jamaicensis), Western kingbird (Tyrannus verticalis), black-tailed gnatcatcher (Polioptila melanura), blue-gray gnatcatcher (Polioptila caerulea), phainopepla (Phainopepla nitens), northern mockingbird (Mimus polyglottos), Gambel's quail (Lophortyx gambelii), American kestrel (Falco sparverius), turkey vulture (Cathartes aura), verdin (Auriparus flaviceps), mourning dove (Zenaidura macroura), lesser nighthawk (Chordeiles acutipennis), horned lark (Ermophila alpestris), Poorwill (Phalaenoptilus nuttallii), rock wren (Salpinctes obsoletus), canyon wren (Catherpes mexicanus), Anna's hummingbird (Calypte anna), Costa's hummingbird (Calypte costae), and house finch (Carpodacus mexicanus).

The red-spotted toad (*Bufo punctatus*) is the only species of amphibian found in the allotment. This toad seems to be doing well at historical localities and at sites disturbed by cattle grazing.

<u>Environmental Consequences</u>

Special Status Wildlife

Desert bighorn sheep do not typically occupy the same habitat as cattle. Cattle generally inhabit alluvial fans and washes and extend into higher elevations on gentle,

less rocky slopes than those preferred by bighorn sheep. Desert bighorns and cattle primarily interact at water sources (Wehausen and Hansen, 1986), where if such interaction were to occur there is the potential for the spread of diseases from cattle to desert bighorn. The extent of this potential to spread disease and how it impacts the desert bighorn population as a whole is unknown, due to small sample sizes in studies and the presence of other factors impacting the sheep populations.

Interactions between cattle and bighorn sheep on the HSA is unlikely because the man-made water sources on this allotment utilized by bighorn sheep occur in high mountainous areas where cattle do not go. The exception would be when desert bighorns migrate from one mountain range to another, and if they water at a source that cattle use in the lower areas while in transit. The locations where this is possible are: Horsethief Spring, Wildhorse Spring, and any of the undeveloped springs between the Clark Mountains and the Kingston Range, and the man-made water sources at Crystal Spring, and at the Chaparral, Dagger, Excelsior, Kingston, Main, Middle, and South corrals.

The banded Gila monster and burrowing owl are susceptible to trampling and burrow collapse. However, with the dispersed level of grazing over a large area with the low numbers of owls and Gila monsters the chances trampling and burrow collapse are slim.

Southwestern bat species typically roost in abandoned mines shafts, caves, rock crevices, and on trees. Therefore, roosting locations would not be impacted by cattle grazing. Bats often forage over riparian areas. Bat foraging habitat could be impacted by constant presence of cattle in riparian habitat. This has not been the case on the HSA because there is little riparian habitat and livestock have not been constantly present at these locations. Under the proposed action, the time cattle would spend near any one riparian area would become less and less as more water is developed to spread use out even further and for longer periods of time. Cattle would be segregated from direct use of the riparian areas by recently-installed exclosure fences at five of the springs.

General wildlife

Burrowing mammals and birds have the potential to be trampled by cattle on the Horsethief Spring Allotment. Cattle grazing may also decrease the amount of available food for small herbivorous mammals in the area. Few studies have been done to document the extent of competition between small mammals and cattle, and if competition does exist, to what extent. However, the adherence to grazing strategies that require proper cattle distribution and periodic rest of individual grazing areas should minimize the impact to burrowing mammals and birds.

Livestock have the potential to cause damage to nesting sites for birds, particularly

where the nests are built on the ground, in clumps of grass or in shrubs, or in the lower branches of trees. Overall, grazing could result in a reduction in forage, shelter, and nesting sites for wildlife through degradation of their respective habitats. Therefore, disruption of wildlife behavioral patterns could also result from the proposed action. Impacts to wildlife would be greatest around cattle concentration areas of use such as range improvements (i.e. cattle troughs), riparian areas, and roads. However, the desert tortoise mitigation measures incorporated into the NEMO Plan amendment would also benefit other wildlife species by reducing overall impacts to habitat within the allotment. For instance, the 230-pound threshold for cattle turnout would minimize this effect during the drier years because cattle would not be in the area when the threshold is not met, thus freeing up all available resources to on-site wildlife.

The red-spotted toad (*Bufo punctatus*) is the only species of amphibian found in the allotment. This toad seems to be doing well at historical localities across it range. Cattle grazing has not been known to put negative pressure on the red-spotted toad. However, with the addition of the riparian exclusion fences on springs known to be occupied by the red-spotted toad any potential for negative impacts have been removed.

B. Impacts of No Action (Current Management)

Special status wildlife

The effects of current management are the same as those analyzed in the proposed action except that without the 230-pound forage threshold, cattle may be present on the allotment with more frequency.

General wildlife

Effects are similar to those described for the proposed action, except that the extent of disturbance to wildlife such as burrowing mammals, ground nesting birds, and birds that nest in the lower branches of trees or in shrubs may be more constant because the 230-pound threshold would not be in effect.

C. Impacts of No Grazing

Special Status Wildlife

The removal of cattle grazing would have little if any effect on desert bighorns or native bat species. Even at full stocking, the impact of cattle on desert bighorns is minimal on the Horsethief Springs Allotments, with the possible exception of interactions at the lower cattle watering sources. A removal of cattle does not reduce this hazard, nor does it add to it. Similarly, for bats, cattle are unable to access their roosting sites, and the amount of riparian habitat at which bats may feed simultaneously to cattle use is

miniscule. Therefore removal of grazing would have little if any impact on, or benefit to, bats on either allotment. Eliminating grazing from the Horsethief Springs Allotment would have a negligible benefit to burrowing owl and Gila monster populations. Due to the low numbers of owls and Gila monsters and the dispersed level of grazing the reduced chance of trample and burrow collapse would be negligible.

General Wildlife

A removal of cattle would presumably be beneficial to most general wildlife species, especially bird species (during nesting season), and several reptile species. Less animal burrows would be trampled and fewer nests would be disturbed if grazing was removed. However, given the dispersed level of grazing over a large area in this allotment, a removal of cattle may not result in measurable or detectable changes to these species or their habitat.

CUMULATIVE IMPACTS

Impacts, as defined by Council of Environmental Quality regulations in 40 CFR 1508.7, are “the impacts on the environment which result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or persons undertakes such other actions.” The cumulative impact analysis for the Clark Mountain and Crescent Peak Allotments is tiered to the analysis of the NEMO plan amendment as described below.

NEMO Plan - Other past, present, and reasonably foreseeable future actions

The NEMO plan amendment specifically recognizes the cumulative conservation benefits of other past actions by Congress in setting aside large areas within CDCA for national park land, military use, and wilderness; benefits derived from designation by U.S. Fish and Wildlife Service of millions of acres of critical habitat in the CDCA; and benefits resulting from the implementation of management actions established under BLM land use planning for six regional plan areas in the CDCA. For example, the NEMO plan Cumulative amendment identifies cumulative conservation benefits resulting from the restrictions BLM places on OHV use throughout the CDCA (which reduced by 5 % the routes available for OHV use within the planning area), elimination of most wild burro herds, elimination of several grazing allotments; and reallocation of forage on remaining allotments including elimination of ephemeral allocations, and substantial restrictions on grazing within DWMAs.

The NEMO plan amendment Final Environmental Impact Statement describes the current environment of the planning area as having been broadly influenced by past activities occurring prior to and including the passage of FLPMA in 1976. The primary

outcome of these activities affected overall resource protection, use, development, and growth in the region. These included historic development and maintenance of major linear rights-of-way for freeways and highways, railroads, and linear utilities connecting Southern California metropolitan areas to cities in the adjacent states of Nevada and Arizona, and the development, adoption, and implementation of the CDCA Plan. In addition, historic and continuing growth of communities in the region, particularly Las Vegas, Nevada, and historic land tenure activities associated with building of the railroads and early mining have also broadly influenced development and land uses in the area.

The current situation is also largely the result of passage or implementation of several laws since the CDCA Plan in 1980. These include implementation activities under the California and Federal Endangered Species Acts for listed species in the region, designation of BLM wilderness by CDPA in 1994, and the transfer of lands from BLM management by CDPA, the Timbisha Shoshone Homeland Act (P.L. 106-423), and the Fort Irwin National Training Center expansion legislation (P.L. 106-554). All of these activities are broad enough in scope that they include cumulative impacts relevant to grazing, either directly or indirectly.

NEMO Plan Amendment – Cumulative Impact

The NEMO Plan amendment analyzes the impacts to air quality, water quality, soils, biological resources, wilderness, livestock grazing, cultural, and socioeconomic conditions. The main conclusion was that the NEMO Plan amendment, as well as other CDCA plan amendments, provides new conservation strategies for plant and animal species that have an overall beneficial cumulative impact on many resources.

The most significant overall regional cumulative impact within the NEMO plan amendment area is the limit on development. CDPA created vast areas of designated wilderness and wilderness study areas upon which development is greatly curtailed. A large portion of the pre-NEMO eastern Mojave Desert became the Mojave National Preserve. Finally, NEMO plan amendment limits surface disturbance to one percent over another approximately 10% of the planning area that is now a DWMA. These changes affect cumulative impacts of all resources, values, and uses in the planning area and the region to some extent. In addition, cumulative effects for the following resources and activities/uses are identified in the NEMO plan amendment FEIS that affect, or are affected by, grazing in the Clark Mountain and Crescent Peak Allotments: vegetation and wildlife, soils, recreational use, wilderness, vehicle access, socioeconomics, and rangeland health and grazing management.

Horse Thief Springs Allotment – Other past, present, and reasonably foreseeable future actions

The BLM's multiple use mission typically results in a variety of activities that are authorized to occur on the same lands. Grazing of cattle in the Mojave Desert has occurred continuously since the mid-1800's (Lovich and Bainbridge 1999). Early grazing in the Mojave occurred on public lands and was unrestricted. In response to deteriorating conditions, the Taylor Grazing Act was passed in 1934. Thirteen years later, the BLM was created when the Government Land Office and the Grazing Service merged in 1946. However, it was not until the 1970's that grazing was seriously regulated by the BLM. The listing of the desert tortoise in 1990 and designation of critical habitat in 1994 lead to even greater restrictions on grazing to protect the desert tortoise and its habitat. The CDCA Plan, as amended by the NEMO plan amendment, has further increased regulations on grazing.

Past, present and future foreseeable activities within the allotment area include casual and permitted recreation activities, vehicle use of paved and unimproved roads, mining, and livestock grazing.

Cumulative Impacts of the Proposed Action

The EA's impact assessments concludes that no impact would result from the proposed grazing lease renewal and lease issuance on environmental justice, wild horses and burros, and water quality (drinking water and groundwater). Therefore there would be no cumulative impact, and no further discussion of these resources is required.

Cumulative impacts addressed in the proposed action include impacts to air quality, areas of critical environmental concern, cultural resources, hazardous or solid wastes, livestock grazing, Native American religious concerns, recreation, paleontology, socioeconomics, soils, , wetlands/riparian zones, wilderness, wildlife, threatened and endangered species, and vegetation.

Some impacts are short term (for example, impacts resulting from the process of constructing new range facilities), while others are long term (such as impacts resulting from the use of these range facilities). Both the short term and long term impacts are consistent with the analysis of the NEMO plan amendment. When added to effects identified in the NEMO plan amendment and effects of other actions on the allotments, the cumulative impact of the proposed action would be limited, as summarized below.

<u>Air Quality</u>

As discussed in Chapter 3, the proposed grazing lease renewal would slightly increase fugitive dust emissions in the allotments. BLM concluded that emissions are deminimus

and no further conformity determination is required.

The other past, present, or reasonably foreseeable future actions that contribute to fugitive dust emissions on or near this allotments include development of range improvements, continued grazing, authorized and unauthorized vehicle use, maintenance and construction of utility rights of way, and mineral exploration. The net effect of these actions on air quality is continued grazing and the management actions such as gathering cattle for branding and weaning have caused slight increase in emissions overall; the combined effects are still within deminimus levels based on BLM's estimate that a minor amount of surface disturbance would occur.

The cumulative impact analysis area for air quality is the Mojave Desert PM-10 Planning Area and the South East Desert Ozone non-attainment area. The time frame for the analysis is long term. The allotments are located in an area classified as a federal non-attainment area for ozone and PM-10 under national standards. However, due to the large cumulative impact analysis area, the existing non-attainment status, and the minimal contribution of dust emissions by grazing from this allotment, the impact of grazing is considered minimal, both incrementally and cumulatively.

Cultural Resources

As discussed in Chapter 3, grazing is known to cause movement and mixing of cultural resources in areas where livestock congregate on the allotments, including riparian areas (springs), corrals, and water facilities. Less than 2% of the known sites identified within the Horsethief Allotment are found in such areas and have been impacted by grazing activities. In much of the allotment where livestock are more dispersed, or in rock areas without sufficient forage, impacts would be restricted to surface displacement and impacts are anticipated to be minimal.

Past, present, and reasonably foreseeable future actions that contribute to cumulative impact to cultural resources on or near these allotments include recreational OHV use, development of range improvements, continued grazing, maintenance and construction of utility rights of way, mineral exploration and development, general recreational activities (e.g., hunting, camping, picnicking, and rock hounding), construction and vehicle use of paved and unimproved roads (authorized and unauthorized vehicle use, mining, and wildlife water developments. The net effect of these actions on cultural resources is the incremental loss of archaeological sites.

The cumulative impact analysis area for cultural resources is the NEMO plan amendment area. The time frame for the analysis is long term. Impacts to cultural resources in the planning area (NEMO plan amendment) have been occurring for 30 years or more and are expected to continue. However, impacts resulting from the proposed grazing lease renewal are not expected to add any further adverse impact. The impact would be minimal, both incrementally and cumulative, because BLM will

implement procedures in accordance with the amended 2007 State Protocol Agreement to insure compliance with Section 106 of the National Historic Preservation Act of 1966, as amended.

Livestock Grazing

As discussed in Chapter 3, there is potential for moderate to severe impacts to the Lessee associated with the removal of cattle from the allotments due to drought. The other past, present, or reasonably foreseeable future actions that contribute to grazing operation on or near this allotment include authorized and unauthorized vehicle use, maintenance and construction of utility rights of way, and mineral exploration. The net effect of these actions on livestock grazing is authorized and unauthorized vehicle use and maintenance and construction of utility rights of way can have a slight impact to livestock grazing by removal of vegetation utilized for forage, and there is always a danger of vehicles colliding with cattle.

The cumulative impact analysis area for livestock grazing is the Clark Mountain and Crescent Peak Allotment boundaries. The time frame for the analysis is long term. Impacts to livestock grazing in the planning area have been occurring for 100 years or more. However, impacts from the proposed grazing lease renewal (Clark Mountain) and issuance (Crescent Peak) are not expected to add any adverse impact. The impact would be minimal, both incrementally and cumulatively, because although the proposed action would implement new terms and conditions, it is unlikely that the terms and conditions would be restrictive enough that the Lessee would be forced to sell his cattle or not have the revenue to replace them.

Native American Religious Concerns

As discussed in Chapter 3, the NFO initiated government-to-government consultation for the renewal of the Horsethief Allotment grazing lease with five Native American tribes that historically occupied and/or exploited the natural resources present within the boundaries of the grazing allotment. It was requested that the tribes provide the NFO with any concerns, comments, or questions that they might have on the lease renewal action, and potential impacts to historic properties or areas of traditional importance within the grazing lease area. No specific concerns associated with cattle grazing were identified by the affected tribes. However, cumulative impacts to specific cultural resources and properties resulting from livestock grazing activities, as discussed in the Cultural Resources, Environmental Consequences Section above, have the potential to impact Native American religious values and concerns.

The cumulative impact analysis area for Native American religious concerns is the territory of lands occupied in the prehistoric and historic periods by the Colorado River Indian Tribes, the Chemehuevi Indian Tribe, the Fort Mojave Indian Tribe, the Las Vegas Paiute Tribe and the Pahrump Paiute Tribe. These lands, including the grazing

lease area, continue to be used by the effected tribes through the present day.

Past, present, and reasonably foreseeable future actions that may potentially contribute to Native American concerns of cumulative impacts to cultural properties on or near this allotment include recreational OHV use, development, operation and maintenance of utility and energy facilities and corridors (e.g., electricity, oil, and natural gas transmission lines), general recreational activities (e.g., hunting, camping, picnicking, rock hounding), scientific study, military training maneuvers, construction and vehicle use of paved and unimproved roads, mining, and wildlife water developments. The net effect of these actions on Native American religious concerns is the incremental loss of integrity of ethnographic landscape values, and Traditional Cultural Properties (e.g., special activity sites, mineral, faunal and floral collection areas) valued by the affected Native American Tribes. However, the renewal of the grazing lease will have a negligent effect on Native American religious concerns within the boundary of the lease. The site protection measures specified in this document and previously initiated (e.g., construction of exclosure fences around an identified archaeological site being impacted by cattle grazing activity), and implementation of the Grazing Amendment to the 2007 Protocol between the State Director, California Bureau of Land Management, and the California State Historic Preservation Office (cultural resource surveys of all range improvement projects and spring locations and mitigation of all sites being impacted as a consequence of grazing activity) will address potential Native American religious concerns.

Recreation

Past impacts to dispersed and permitted recreational use from grazing activates were nonexistent to minimal, with no reports of human-cattle or vehicle-cattle interactions being on file. Dispersed recreation was dominated in the past with the area having few permitted events.

Current impacts are categorized as minimal to low, with changes due to increased visitation and development of new facilities. Present activities within the area include: grazing, hiking, camping, geo-caching, boulder and rock climbing, off-highway vehicle (OHV) activities, scenic and pleasure driving, recreational vehicle touring (RV), site-seeing, mountain and road bicycling, horseback riding, wildlife watching, photography, target shooting, hunting, and rock collecting. All of these activities occur simultaneously and are dispersed between wilderness and non-wilderness public lands. Most recreational use in the area today is still considered dispersed, however permitted events are increasing and this trend is expected to continue in the future.

Future activities that may impact the proposed action would be increased population growth in the tri-state region, new development of recreation or commercial facilities, and the desire to explore by the public. Increases in population may provide larger numbers of recreational visitors, and a wider diversity of visitor needs, which may

change the impacts.

All impacts past, present, and future can influence recreational experiences for the casual and permitted visitors on public lands. Increased recreation in the area represents a cumulative impact in terms of such risks. It is likely that increasing recreation in the areas will continue in the future. However, impacts historically have been mostly minimal and there is currently no evidence to support an expected change impacts. If the cumulative changes analyzed do take place, impacts are still expected to be no higher than moderate.

Socioeconomics

As discussed in Chapter 3, there are potential impacts associated with the removal of cattle from the allotments due to drought, however it is unlikely that the Lessee would be forced to sell his cattle or that the Lessee would not have the revenue to replace them. The grazing operation would continue to have a nominal influence on the local and regional economy of San Bernardino County.

Past, present, and reasonably foreseeable future actions that contribute cumulatively to socioeconomics on or near this allotment include recreational OHV use, development, operation and maintenance of utility and energy facilities and (e.g., electricity and natural gas transmission lines), livestock grazing, military training maneuvers, construction and vehicle use of paved and unimproved roads, mining, and water developments. Other activities that may overlap the grazing allotment include utility rights of way (e.g., electricity and natural gas transmission lines), general recreation (e.g., hunting, picnicking, camping, and rock hounding), scientific study, and OHV activities.). The net effect is most of these actions have benefited the people who live in San Bernardino County by generating revenue for the county and providing needed commodities.

The cumulative impact analysis area for socioeconomic concerns is San Bernardino County. The time frame for the analysis is long term. Impacts to socioeconomics in the planning area have been occurring for 30 years or more. However, impacts resulting from the proposed grazing lease renewal (Clark Mountain) and lease issuance (Crescent Peak) are not expected to add any adverse impact. The impact would be minimal, both incrementally and cumulatively, because most of the revenue that San Bernardino County collects from cattle ranching is from a few large- scale cattle operations. The Clark Mountain Allotment and Crescent Peak Allotment Lessee has small operations which contributes a very small percentage of revenue to San Bernardino County.

Soils

As discussed in the soils section of Chapter 3 of this EA, the proposed grazing lease

renewal would continue to allow impacts to soils.

The other past, present, or reasonably foreseeable future actions that contribute to impacts to soils on this allotment include development of range improvements, continued grazing, authorized and unauthorized vehicle use, maintenance and construction of utility rights of way, and mineral exploration. The net effect is grazing around range improvements, water developments in particular, and construction and use of corridors have compacted soils. Overall, less than one percent of the soils have been impacted.

The cumulative impact analysis area is the Horse Thief Springs Allotment. The time frame for the analysis is long term. Most of the impacts to soils have been occurring for the past 100 years. The impact would be considered minimal, both incrementally and cumulatively, because less than one percent of the allotments' soils would be affected and no new range improvements have been proposed at this time that would increase the amount of compacted soil on the allotment.

Hazardous or Solid Waste

As discussed in Chapter 3, the proposed grazing lease renewal would have limited potential for limited impacts to hazardous and solid wastes.

The other past, present, or reasonably foreseeable future actions that contribute to the potential for impacts from hazardous or solid waste on or near this allotment include construction and maintenance of range improvements, authorized and unauthorized vehicle use, maintenance and construction of utility rights of way, past mining activities, and mineral exploration. Past mineral processing activities may have released hazardous and solid waste, but a thorough inventory of these sites has not been conducted.

The cumulative impact analysis area for hazardous and solid waste is the Clark Mountain and Crescent Peak Allotments and surrounding area. The time frame for the analysis is long term. The impact would be considered minimal, both incrementally and cumulatively.

Areas of Critical Environmental Concern (ACEC)

As discussed in Chapter 3, the proposed grazing lease renewal would have limited potential for limited impacts to the Kingston Range Areas of Critical Environmental Concern (ACEC).

The other past, present, or reasonably foreseeable future actions that contribute to the potential for impacts to Kingston Range ACEC on or near this allotment include construction and maintenance of range improvements, authorized and unauthorized

vehicle use, maintenance and construction of utility rights of way, past mining activities, and mineral exploration.

The cumulative impact analysis area for Kingston Range ACEC is the Horse Thief Springs Allotment. The time frame for the analysis is long term. The impact would be considered minimal, both incrementally and cumulatively.

Wetlands/Riparian Zones

As discussed in Chapter 3, riparian areas on the Horse Thief Springs Allotment are very limited in extent, and impacts to these areas would be slight. The past, present, or reasonably foreseeable future actions that contribute to impacts to wetland/riparian zones on this allotment include construction and maintenance of range improvements, continued grazing, maintenance and construction of electric transmission and pipeline rights-of-way, and mining of locatable minerals.

The cumulative impact analysis area for wetland/riparian zones is the Clark Mountain Allotment. The time frame for the analysis is long term. The greatest impacts to spring wetland/riparian zones have been caused by the establishment of invasive/non-native weed species. These impacts are considered minimal, both incrementally and cumulatively, because BLM has proposed terms and conditions with the purpose of preventing impacts to wetland/riparian zones, including requiring the Lessee to maintain water source range improvements, and requiring that mineral supplements not be authorized within 0.25 miles of any natural water source.

Wilderness

The wilderness cumulative impact analysis area is the Kingston Range, North Mesquite Mountains, Pahrump Valley, Mopah and South Nopah Wilderness areas. The time frame for the analysis is long term. The impact of the proposed action is considered minimal, both incrementally and cumulatively, because most of the impacts occurred prior to wilderness designation and future planned activities are not anticipated to consequentially impact the wilderness.

Past impacts to wilderness character prior to designation were mining, ranching, grazing, water developments and vehicle use. However, developed water sources did not exist in California Valley prior to wilderness designation

Present activities include grazing, maintenance of water development, and recreational use including wildlife viewing, hiking, camping and hunting. These past and present activities affect wilderness character and the naturalness of the areas, as will any future activities. These actions also impact the opportunity to experience solitude and/or an area without the imprint of man.

Future activities may include authorized access to private land, grazing, maintenance to pre-designation developments, recreational use including wildlife viewing, hiking, camping and hunting. Without developed water sources being constructed within California Valley there will be no consequential impacts to wilderness characteristics from grazing within the eastern Mopah, South Mopah and western Pahrump Valley Wilderness units.

Wildlife

Threatened or Endangered Species

As discussed earlier in Chapter 3, impacts to the desert tortoise and its habitat on the Horse Thief Springs Allotment includes potential trampling of desert tortoises above ground or in their burrows, and reduction in forage and ground cover, soil compaction, damage to soil crusts, and introduction of non-native plants close to cattle concentration areas like watering sources.

The geographic boundary for cumulative impact analysis for wildlife habitat concerns is the Eastern Mojave Recovery Unit. The other past, present, or reasonably foreseeable future actions that contribute to wildlife habitat cumulative impacts on or near this allotment include mining; recreational OHV use; development, operation and maintenance of utility and energy facilities (e.g., electricity and natural gas transmission lines); livestock grazing; and construction and vehicle use of paved and unimproved roads.
The listing of the desert tortoise in 1990 and designation of critical habitat in 1994, and the NEMO Plan amendment to the CDCA Plan have led to much greater restrictions on grazing and to other activities to aid in the recovery of the species.

Present activities within the Eastern Recovery Unit include grazing, mineral exploration, operation and maintenance of utility facilities, dispersed and permitted recreation (e.g., hunting, picnicking, camping, dual sport events, and rock hounding), scientific study, and OHV activities.

Reasonably foreseeable future actions within the Eastern Recovery Unit include development or replacement of range improvements on the Horse Thief Springs Allotment, new rights-of-way grants for renewable energy projects, development of communications facilities, operation and maintenance of utility facilities, authorized vehicle use, and mineral exploration.

These activities impact the recovery unit to varying degrees through degradation, disturbance and loss of wildlife habitat. However, the CDCA Plan, as amended by the NEMO plan amendment, implements Standards and Guidelines designed to improve habitat conditions and reduce impacts to the recovery unit from surface disturbing activities such as mining, OHV activities, and maintenance of utility facilities. In

addition, the NEMO plan amendment would eventually eliminate grazing in large areas of the recovery unit. Additional policies and management guidelines incorporated within the NEMO plan amendment further reduce the negative impacts to this recovery unit from present and reasonably foreseeable future actions. Consequently, the impacts to the recovery unit, resulting from present activities would be minimized.

Range improvements (i.e. installation of water sites, water facilities, pipelines, corrals, etc.) could have impacts on the threatened desert tortoise and its habitat depending on location and project specifics. Impacts to individual tortoises may include injury and/or mortality during construction, and competition between cattle and tortoise for forage. The impacts to desert tortoise habitat that could result from construction of range improvements could include reduction in forage and thermal cover, soil compaction, degradation of soils, damage to soil crusts, and introduction of non-native plants.

The NEMO plan amendment requires project proponents compensate for loss or disturbance of public lands within non-DWMA habitat at a ratio of 1:1 for every acre lost or disturbed in association with installation of new range improvements. The compensation is directed to the recovery unit upon which the disturbance occurs. Lands acquired through compensation or mitigation are classified as "Closed to disposal and use." Lands within the Eastern Recovery Unit not included within the DWMAs are classified as non-DWMA (formerly Category III) desert tortoise habitat. Compensation for disturbance on public lands within non-DWMA habitat would be required at a 1:1 ratio. As stated in the 2005 CDCA Biological Opinion *"Limiting the amount of cumulative surface disturbance to one percent of the public lands in each of the desert wildlife management areas will likely ensure that proposed actions do not cause injury to or mortality of a large number of desert tortoises."* And it *"…will likely ensure that proposed actions do not appreciably compromise the function and conservation role of critical habitat units" in* the planning areas. The BO also states, *"The Bureau's requirement that project proponents compensate for loss or disturbance of habitat of the desert tortoise within desert wildlife management areas at a ratio of five acres of compensation for every acre lost or disturbed will promote the conservation of the desert tortoise."*

Past, present and reasonably foreseeable future actions in addition to the grazing lease renewal for Horse Thief Springs Allotment would not result in a significant cumulative impact to desert tortoises or their habitat within the Eastern Recovery Unit. The adherence to the provisions of the NEMO Plan amendment to the CDCA Plan, the 2005 CDCA Biological Opinion, and the stipulations of the grazing lease renewal for the Horse Thief Springs Allotment would reduce the cumulative impacts to the recovery unit caused by past, present and reasonably foreseeable future activities.

<u>Vegetation (Invasive/non-native, Special Status, UPAs, BSCs)</u>

As discussed in Chapter 3, impacts to vegetation would generally be concentrated

adjacent to range improvements and areas that provide shade for cattle.

Past, present, and reasonably foreseeable future actions that contribute to vegetation cumulative impacts on or near this allotment include recreational OHV use, development, operation and maintenance of utility and energy facilities (e.g., electricity and natural gas transmission lines), livestock grazing, military training maneuvers, construction and vehicle use of paved and unimproved roads, mining, and water developments. Other activities that may overlap the grazing allotment include utility corridors (e.g., electricity and natural gas transmission lines), general recreation (e.g., hunting, picnicking, camping, and rock hounding), scientific study, and OHV activities.). The net effect of these actions on vegetation is an increased potential for non-native/invasive species to be introduce and/or spread by vehicles, both utility vehicles maintaining utility corridors and recreational vehicles. The development of future roads will result in a loss of vegetation. Mining can result in a few to many acres of vegetation being removed from the mine site.

The cumulative impact analysis area for vegetation is the Horse Thief Springs Allotment. The time frame for the analysis is long term. Impacts to vegetation in the planning area have been occurring for more than 100 years. However, impacts resulting from the proposed grazing lease renewal on Horse Thief Springs Allotment are not expected to add any adverse impact. The combined impact would be minimal, both incrementally and cumulatively, because the BLM has proposed terms and conditions to prevent adverse impacts to vegetation, including restricting utilization of perennial forage to between 30% to 40%, and biological opinion stipulations, implementation of fallback and regional standards and guidelines, along with grazing strategies that require proper cattle distribution and periodic rest of individual grazing use areas during the critical growing season.

Cumulative Impact of No Action Alternative (Current Management)

Cumulative impacts addressed in the no action alternative include impacts to air quality, cultural resources, livestock grazing, Native American religious concerns, public health and safety, recreation, socioeconomics, soils, hazardous or solid wastes, wetlands/riparian zones, wilderness, wildlife, threatened and endangered species, and vegetation.

Impacts are both short term (for example, impacts resulting from construction of new range facilities) and long term (impacts resulting from the use of these range facilities). Both the short term and long term impacts are consistent with the analysis of the NEMO Plan amendment. When added to effects identified in the NEMO Plan amendment and effects of other actions on the allotments, the cumulative impact of the proposed action would be limited as summarized below.

Air Quality

Same as the proposed action.

Cultural Resources

Same as the proposed action.

Environmental Justice

Same as the proposed action.

Native American Religious Concerns

Same as the proposed action.

Recreation

Same as the proposed action.

Socioeconomics

Same as the proposed action.

Soils

Same as the proposed action.

Hazardous or Solid Waste

Same as the proposed action.

Areas of Critical Environmental Concern (ACEC)

Same as the proposed action.

Wetlands/Riparian Zones

Same as the proposed action.

Wilderness

The impacts of the no action alternative are considered moderate, both incrementally and cumulatively, because most of the impacts occurred prior to wilderness designation and future planned activities are not anticipated to consequentially impact the wilderness.

Wildlife

For general wildlife, and for special status species, this alternative would not be unlike the proposed action.

For the desert tortoise, the no action alternative would perpetuate pre-NEMO Plan amendment protective measures which are less stringent than those that would be applied to implement the NEMO Plan amendment and the 2005 CDCA biological opinion. Higher levels of utilization would be allowed (40% v: 30%), which would in the long term provide less vegetation for the desert tortoise. Although the Horse Thief Springs Allotment are not within DWMAs, and as such the habitat on these two allotments is not considered essential to desert tortoise recovery, the cumulative contribution of continued existing management toward recovery would be at best nil.

Vegetation

Same as the proposed action.

References Cited

Bedell, TR. E. (Chairman, Glossary Update Task Group). 1998. Glossary of Terms Used in Range Management. Society for Range Management, Denver, CO 32pp

Federal Land Policy and Management Act of 1976, Titles I – III.; Department of Interior, Part 485, Safety and Occupational Safety & Health Program, Chapter 23 Public Safety and Health.

40CFR Part 300, National Oil and Hazardous Substance Pollution Contingency Plan; Federal Land Policy and Management Act of 1976, Titles I – III.; Department of Interior, Part 485, Safety and Occupational Safety & Health Program, Chapter 23 Public Safety and Health.

The Wilderness Act, 1964

The California Desert Protection Act, 1994

BLM Manual 8560 – Management of Designated Wilderness Areas

Berry, K. 1978. Livestock grazing and the desert tortoise. Transactions of the 43rd North American Wildlife and Natural Resources Conference. pp. 505-519.

Berry, K.H. 1996. Summary of the results of long-term study plots for the desert tortoise in California. Letter to Molly Brady, Bureau of Land Management, Riverside, California. Riverside Field Station, U.S. Geological Survey. Riverside, California.

Bureau of Land Management. 1980. The California Desert Conservation Area Plan. California Desert District. Riverside, California.

Bureau of Land Management. 2002. Proposed Northern and Eastern Mojave Desert Management Plan and Final Environmental Impact Statement. California Desert District, Riverside California.

California Native Plant Society. 2008. Inventory of Rare and Endangered Plants (online edition, v7-08b). California Native Plant Society. Sacramento, CA.

Lovich, J.E., and D.A. Bainbridge. 1999. Anthropogenic degradation of the southern California desert ecosystem and prospects for natural recovery and restoration. Environmental Management 24:309-326.

U.S. Fish and Wildlife Service. 1994. Desert Tortoise (Mojave Population) Recovery Plan. U.S. Fish and Wildlife Service, Portland, Oregon. 73 pp.

U.S. Fish and Wildlife Service. 1994. Biological Opinion for the Bureau of Land Management's interim livestock grazing program in Mojave desert tortoise critical habitat (1-5-94-F-107). Memorandum from Regional Director, Region 1 to State Director, Bureau of Land Management, Sacramento, California. Dated April 20. Portland, Oregon.

U.S. Fish and Wildlife Service. 1994. Biological Opinion for Cattle Grazing on 25 Allotments in the Mojave Desert, San Bernardino Counties, California (1-8-94-F-17). Memorandum from Field Supervisor, Ecological Services Ventura Field Office to State Director, Bureau of Land Management, Sacramento, California. Dated March 14. Ventura, California.

U.S. Fish and Wildlife Service. 2005. Biological Opinion for the California Desert Conservation Area Plan [Desert Tortoise] (1-8-04-F-43R). Memorandum from the Field Supervisor, Ventura Fish and Wildlife Office to State Director, Bureau of Land Management, Sacramento, California. Dated March 31, 2005. Ventura, California.

Wehausen, J.D. and M.C. Hansen. 1986. Unpublished report, California Department of Fish and Game, Sacramento, California.

ASPPN 1990 Impact of Domestic Livestock Grazing on Archaeological Resources, Archaeological Sites Protection and Preservation Notebook, Technical Notes 1-15. U.S. Army Corps of Engineers Waterways Experiment Station, Vicksburg, MS.

Gallegos, Dennis, et al. 1980 Cultural Resources Inventory of the Central Mojave and Colorado Desert Regions, California. Riverside: Bureau of Land Management.

Hall, Matthew C. 1981 Inventory of Spring/Seep Locations in the East Mojave Desert Region. In: Background to Historic and Prehistoric Resources in the East Mojave Desert Region, C. King and D.G. Casebier, eds. Riverside: Bureau of Land Management

King, Chester 1981 Background to Prehistoric Resources of the East Mojave Planning Unit. In: Background to Historic and Prehistoric Resources of the East Mojave Desert Region, C. King and D.G. Casebier, eds. Riverside: Bureau of Land Management

Rector, Carol 1981 Rock Art of the East Mojave. In: Background to Historic and Prehistoric Resources of the East Mojave Desert Region, C. King and D.G. Casebier, eds. Riverside: Bureau of Land Management.

Roney, John 1977 Livestock and Lithics: The Effects of Trampling. Manuscript on file at the Bishop Field Office, Bureau of Land Management.

Warren, Elizabeth von Till, et al. 1981 A Cultural Resources Overview of the Colorado Desert Planning Units. Riverside: Bureau of Land Management.