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Bureau of Land Management

ENVIRONMENTAL ASSESSMENT
DOI-BLM-AZ-C010-2014-0034-EA

Curtain Allotment
Grazing Permit Renewal

Kingman Field Office
2755 Mission Boulevard
Kingman, AZ 86401

July 21, 2014



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1.0 INTRODUCTION

The Bureau of Land Management (BLM) is proposing to fully process the term grazing permit on the Curtain Allotment (00027), managed by the BLM Kingman Field Office (KFO), in accordance with all applicable laws, regulations, and policies.

The Curtain Allotment is located west of the Cerbat Mountains, approximately seven miles northwest of Kingman, Arizona adjacent to U.S. Highway 93 (Figure 1). Hualapai-Aquarius Grazing Environmental Impact Statement (BLM 1981) identified this allotment as a category¹ C (custodial), perennial/ephemeral allotment. It is comprised of 3,250 acres of public land and 440 acres of state land. The current grazing permit authorizes 18 cattle (194 AUM²s) from March 1 to February 28. The Evaluation of Standards for Rangeland Health for the Curtain Allotment (Evaluation) was completed in August 2013 (BLM 2013) and is attached as Appendix A.

1.1 Background

The Curtain Allotment grazing permit was renewed with the same terms and conditions for a ten-year period beginning October 1, 2007, pursuant to Section 325 of Public Law 108-108, pending compliance with applicable laws and regulations. Compliance with all applicable laws and regulations includes consultation, coordination and cooperation with affected individuals, interested publics, States, and Indian Tribes, completion of the applicable level of National Environmental Policy Act (NEPA) review, consultation with the United States Fish and Wildlife Service (USFWS) under Section 7 of the Endangered Species Act, and ensuring that allotments are achieving or making significant progress toward achievement of land health standards.

The lands within the Curtain Allotment have been identified in the Kingman Resource Area Proposed Management Plan (Kingman RMP)/Final Environmental Impact Statement (BLM 1995), for disposal. “These lands [for disposal] are generally in small isolated parcels or in checkerboard areas where management is difficult for BLM and state land managers and private landowners. Often, natural resource values are lower or have already been degraded as a result of urban pressures” (BLM 1995). The permittee has not grazed livestock on the allotment since 2001 because of livestock management difficulties due to public recreation and vandalism. Therefore, the grazing permit has been in non-use status since that time.

This environmental assessment (EA) has been prepared to disclose and analyze the potential environmental consequences associated with a proposed grazing permit renewal.

1.2 Purpose and Need

The purpose of this action is to provide for livestock grazing opportunities on public lands where consistent with meeting management objectives, including the Arizona Standards for Rangeland Health and Guidelines for Livestock Grazing Management (Land Health Standards [BLM 1997]).

¹ Category: All allotments are categorized as either improve, maintain, or custodial.

² Animal Unit Month

The need for this action is established by the Taylor Grazing Act (TGA), the Federal Land Policy and Management Act (FLPMA), and the Kingman RMP/Final Environmental Statement (BLM 1995), which require that the BLM respond to applications to fully process and renew permits to graze livestock on public land. In detail, the analysis of the actions identified in the applications for grazing permit renewals and the alternative actions is needed because:

- BLM Arizona adopted the Arizona Standards for Rangeland Health and Guidelines for Livestock Grazing Management in all Land Use Plans in 1997 (BLM 1997). Under these standards, rangeland health should be achieving or making significant progress towards achieving the Land Health Standards and providing for proper nutrient cycling, hydrologic cycling, and energy flow. Guidelines direct the selection of grazing management practices and, where appropriate, livestock facilities to promote significant progress toward, or the attainment and maintenance of, the Land Health Standards. The Evaluation identified Standard 1 was met at three key areas, and Standard 3 was not met at those key areas. Standard 2 evaluates riparian-wetland sites and is not applicable to the Curtin Allotment because there are no riparian-wetland sites on the allotment.
- The Kingman RMP identifies resource management objectives and management actions that establish guidance for managing a broad spectrum of land uses and allocations for public lands in the KFO. The Kingman RMP allocated public lands within the Curtin Allotment as available for domestic livestock grazing. Where consistent with the goals and objectives of the Kingman RMP and Land Health Standards, allocation of forage for livestock use and the issuance of grazing permits to qualified applicants are provided for by the TGA and the FLPMA.

1.2.1 Decision to Be Made

The KFO Manager is the authorized officer responsible for the decisions regarding management of public lands within this allotment. Based on the results of the NEPA analysis, the authorized officer will issue a determination of the significance of the environmental effects and whether an environmental impact statement (EIS) would be required. If the authorized officer determines that it is not necessary to prepare an EIS, the EA will provide information for him/her to make an informed decision whether to renew, renew with modifications, or not renew the permit. If renewed, the EA also provides information about which management actions, mitigation measures, and monitoring requirements would be prescribed for the Curtin Allotment to ensure management objectives and Land Health Standards are achieved.

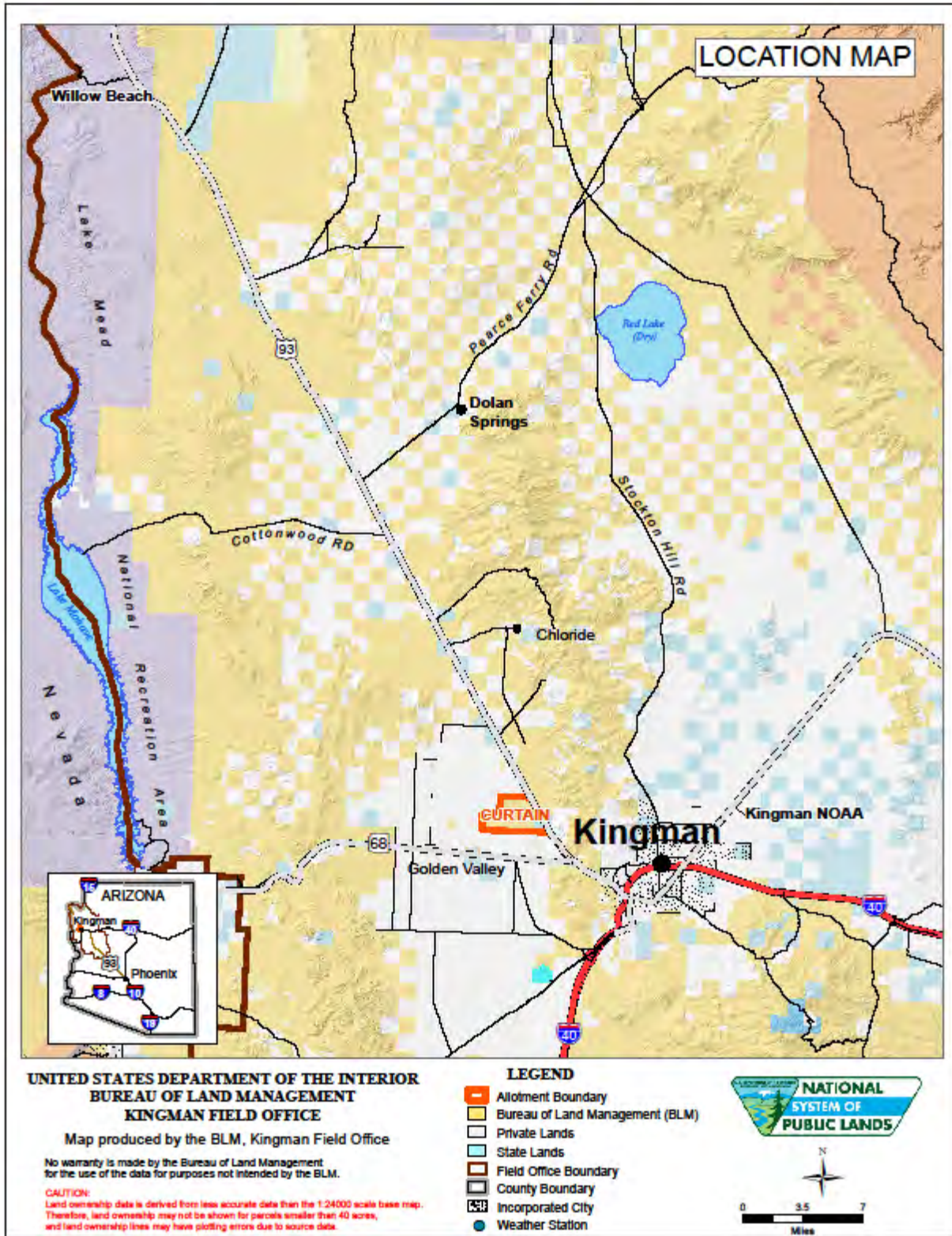


Figure 1: Curtin Allotment in the vicinity of Kingman Field Office.

1.3 Conformance with Land Use Plan and Other BLM Plans

1.3.1 Kingman Resource Area RMP

The Proposed Action is in conformance with the Kingman Resource Management Plan (RMP) (BLM 1995) and the Statewide Land Use Plan Amendment for Implementation of Arizona Standards for Rangeland Health and Guidelines for Grazing Administration 1997. Arizona's Land Health Standards were developed through a collaborative process involving the Arizona Resource Advisory Council and the Bureau of Land Management State Standards and Guidelines team. The Secretary of the Interior approved the Land Health Standards in April 1997. The Decision Record, signed by the BLM Arizona State Director (BLM 1997), provided for full implementation of the Land Health Standards in all Arizona BLM Land Use Plans.

Implementation level decisions from the 1978 Cerbat/Black Mountain Grazing Environmental Impact Statement (EIS) were carried forward into the 1995 Kingman Resource Management Plan. Management direction pertaining to this allotment can be found in the Cerbat/Black Mountain Planning Unit section, Kingman RMP, Appendix 1, p. 461.

1.4 Scoping and Issues

Consultation, Cooperation, and Coordination

August 23, 2013 – The Evaluation was sent to the grazing permittee and members of the interested public.

March 31, 2014 – A letter was sent to stakeholders, the permittee, and the interested public asking for comments on the allotment.

May 6, 2014 – Scoping was conducted at KFO, and the following resources were identified by the program leads for analysis in this EA: general botany/noxious weeds, migratory birds, range, soils, socioeconomic values, and wildlife.

May 9, 2014 – The permittee was emailed to inform him of the Interdisciplinary (ID) team's plan to begin work on the EA within a week and to request input.

Native American Consultation and Coordination

Kingman BLM and the Colorado River District entered into a Memorandum of Understanding (MOU) with the Hualapai Tribe (BLM 2012). The MOU clarifies that consultation is not necessary for grazing permit renewals and existing range improvements. Proposed range improvements do not require consultation unless located on an archaeological site or area of cultural significance.

Issues Identification

The ID Team carefully considers comments by BLM specialists, interested publics, the permittee and affected agencies in order to identify issues relevant to issuing a ten-year grazing permit. The permittee identified issues of frequent off-highway vehicle (OHV) use and vandalism on the allotment that make it difficult to manage livestock. The Evaluation concluded that Land Health Standards, Standard 3, are not being achieved on the allotment.

1.5 Relationships to Statutes, Regulations, or Other Plans

Table 1 lists statutes, regulations, policy and local area planning documents germane to the analysis area, Proposed Action, and alternatives.

Table 1. Statutes, Regulations and Other Plans Relevant to Proposed Action.

Proposed Action Element	Authority
Livestock Grazing	National Environmental Policy and Management Act of 1969
Livestock Grazing	Taylor Grazing Act of 1934 as amended
Livestock Grazing	Federal Land Policy and Management Act of 1976 as amended
Livestock Grazing	Public Rangelands Improvement Act of 1978
Livestock Grazing	Grazing regulations under 43 CFR 4100 and associated BLM Manual policy
Wildlife	Endangered Species Act of 1973
Wildlife	Migratory Bird Treaty Act of 1918
Wildlife	Executive Order 13186 – Responsibilities of Federal Agencies to Protect Migratory Birds

2.0 PROPOSED ACTION AND ALTERNATIVES

Development of the Proposed Action and alternatives for this EA was based on the results of public scoping and the Evaluation conducted by the BLM in 2013 (Appendix A). The Proposed Action and alternatives are summarized in Table 2.

The goal for managing the allotment is to continue to provide for the native plant community's physiological needs. The objectives are to meet Standard 3 of the Land Health Standards and reduce the percentage of bare ground at all key areas within ten years.

Table 2. Summary of the Proposed Action and Alternatives.

Alternative	Number & Kind of Livestock	Season-of-Use	AUMs	Proposed Range Improvements	Proposed Grazing System
Proposed Action	18 cattle	3/1 to 2/28	194 (suspended)	None	Renew perennial grazing permit with a reduction in permitted use. Ephemeral grazing may be applied for annually.
Yearlong Grazing Alternative	18 cattle	3/1 to 2/28	194	None	Renew perennial grazing permit with no changes to grazing system. Ephemeral grazing may be applied for annually.
No Livestock Grazing Alternative	0 cattle	none	0	N/A	None

2.1 Actions Common to All Alternatives

Standards for Rangeland Health

The allotment would be managed to achieve the following objectives, as described in the Arizona Land Health Standards:

1. Upland soils exhibit infiltration, permeability, and erosion rates that are appropriate to soil type, climate, and landform (ecological site).
2. Riparian and wetland areas are in properly functioning condition.³
3. Productive and diverse upland and riparian-wetland plant communities of native species exist and are maintained.

2.2 Actions Common to the Proposed Action and Yearlong Grazing Alternative

Ephemeral Grazing

In years of abundant ephemeral bloom, ephemeral grazing may be authorized. Decisions to allow livestock use of ephemeral vegetation would be guided by Arizona BLM Instruction Memorandum (IM) AZ-94-018. The IM outlines criteria that must be met prior to ephemeral grazing authorization with the objective “to ensure adequate annual vegetation exists for resource needs at the beginning and end of authorization periods while providing forage for livestock use” (BLM IM AZ-94-018).

³ This standard does not apply in the Curtain Allotment. There are no wetland/ riparian areas in the allotment.

2.3 Proposed Action

The Proposed Action would renew the perennial grazing permit for the Curtain Allotment for a period of ten years suspending all permitted use until Land Health Standard 3 is met at the three Key Areas (See Evaluation, Appendix A). The permittee may apply for ephemeral grazing authorization each year. The removal of two of the current terms and conditions is also proposed.

Additionally, the permittee has grazing permits on two allotments, Curtain and Mineral Park Allotments. Both allotments are on one permit. The Mineral Park Allotment was fully processed in 2007 in accordance with all applicable laws, regulations, and policies as discussed in Section 1.1 Background. The Curtain Allotment permit was renewed pursuant to Section 325 of Public Law 108-108, pending compliance with applicable laws and regulations. It is administratively impractical and confusing to have both allotments on one permit; therefore, grazing on the Curtain Allotment would be authorized on a separate permit under this alternative. There would be no environmental effects from this administrative action.

Table 3. Grazing proposed with the Proposed Action.

Allotment Name	Livestock			AUMs (suspended)	% Public Land
	No.	Kind	Season of Use		
Curtain	18	Cattle	3/1 to 2/28	194	90

Terms and Conditions

The following two terms and conditions would be removed from the existing permit. These terms and conditions are required of the permittee under BLM grazing regulations found at 43 CFR § 4100 and do not need to be listed on the permit. Their removal would have no environmental impact.

“Payment of grazing fees is due on the date specified on the grazing fee bill. Failure to make payment within 30 days may be violation of 4140.1(B) and shall result in action by the authorized officer under 4150.1 and 4160.1.”

“The permittee will be responsible for maintaining the improvements in good working order. All range improvements shall be used, maintained, or removed from these lands, in a manner consistent with multiple-use management in accordance with the grazing regulations.”

The following terms and conditions would be on the permit:

“The perennial permitted use is suspended for the term of the permit or until all applicable Standards for Rangeland Health are met. Ephemeral grazing authorization may be applied for on an annual basis.”

“The permittee will provide the BLM a certified actual use report by March 15th of each year. This report will detail the number of livestock, use areas or pastures, and season of use.”

2.3.1 Range Improvements

Projects such as fences and water developments, associated with livestock grazing management have been installed over the last several decades and would continue to be maintained under this alternative. No new range improvement projects would be constructed.

2.4 Yearlong Grazing Alternative

This alternative would result in a new ten-year permit under the previously authorized livestock numbers and season-of-use. Grazing on the Curtain Allotment would be authorized on a separate permit under this alternative for the same reasons as discussed in Section 2.3 Proposed Action. The removal of the same two terms and conditions, as identified in Section 2.3 Proposed Action, is also proposed.

Monitoring and Adaptive Management

BLM resource specialists would periodically monitor the allotment over the ten-year term of the grazing permit to ensure that the fundamentals or conditions of rangeland health are being met, or are making significant progress toward being met, in accordance with 43 Code of Federal Regulations (CFR) 4180. If monitoring indicates that desired conditions are not being achieved and current livestock grazing practices are causing non-attainment of resource objectives, livestock grazing management on the allotment would be modified in cooperation with the permittee. Adaptive management allows the BLM to adjust the timing, intensity, frequency and duration of grazing, the grazing management system, and livestock numbers temporarily or on a more long-term basis, as deemed necessary. An example of a situation that could call for adaptive management adjustments is drought conditions. If a permittee disagrees with the BLM’s assessment of the resource conditions or the necessary modifications, the BLM may nevertheless issue a Full Force and Effect Grazing Decision to protect resources.

Table 4. Grazing Proposed with the Yearlong Grazing Alternative.

Allotment Name	Livestock			AUMs (active)	% Public Land
	No.	Kind	Season of Use		
Curtain	18	Cattle	3/1 to 2/28	194	90

Terms and Conditions

The following two terms and conditions would be removed from the existing permit for the same reasons as was discussed in Section 2.3 Proposed Action.

“Payment of grazing fees is due on the date specified on the grazing fee bill. Failure to make payment within 30 days may be violation of 4140.1(B) and shall result in action by the authorized officer under 4150.1 and 4160.1.”

“The permittee will be responsible for maintaining the improvements in good working order. All range improvements shall be used, maintained, or removed from these lands, in a manner consistent with multiple-use management in accordance with the grazing regulations.”

The following terms and conditions would remain on the permit:

“The permittee will provide the BLM a certified actual use report by March 15th of each year. This report will detail the number of livestock, use areas or pastures, and season of use.”

2.4.1 Range Improvements

Projects, such as fences and water developments, associated with livestock grazing management have been installed over the last several decades and would continue to be maintained under this alternative. No new range improvement projects would be constructed

2.5 No Livestock Grazing Alternative

Under this alternative, no livestock grazing would be authorized for the Curtain Allotment.

2.6 Alternatives Considered but Eliminated From Detailed Analysis

The No Action Alternative analyses effects from the current permit and will not be analyzed because the only differences between this alternative and the Proposed Action (Section 2.3 Proposed Action) are administrative in nature and would have no additional environmental effects. Potential impacts to elements of the environment would therefore be the same as those described for the Proposed Action, thus, a separate analysis of the No Action alternative is not required (BLM 2008a).

3.0 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

This chapter describes the general project setting and addresses standard critical elements of the human environment (H-1790-1, Appendix 5 of the BLM NEPA Handbook, as amended) and several other resources elements commonly affected by livestock grazing.

3.1 General Project Setting

3.1.1 Landscape Setting

The Curtain Allotment encompasses 3,250 acres of public land and 440 acres of state land in northwestern Arizona. It lies on the gently sloping alluvial fans west of the Cerbat Mountains,

approximately seven miles northwest of Kingman adjacent to US Highway 93. The area slopes southwest toward the headwaters of Sacramento Wash. The elevation ranges from approximately 3,000 feet to 3,300 feet (Figure 2).

Activities such as livestock grazing, road and trail development, wildfire, and issuance of rights-of-way (ROWs) have taken place on the allotment and affected the condition of the rangelands. See Section 3.4 Cumulative Effects for a discussion of effects from these activities.

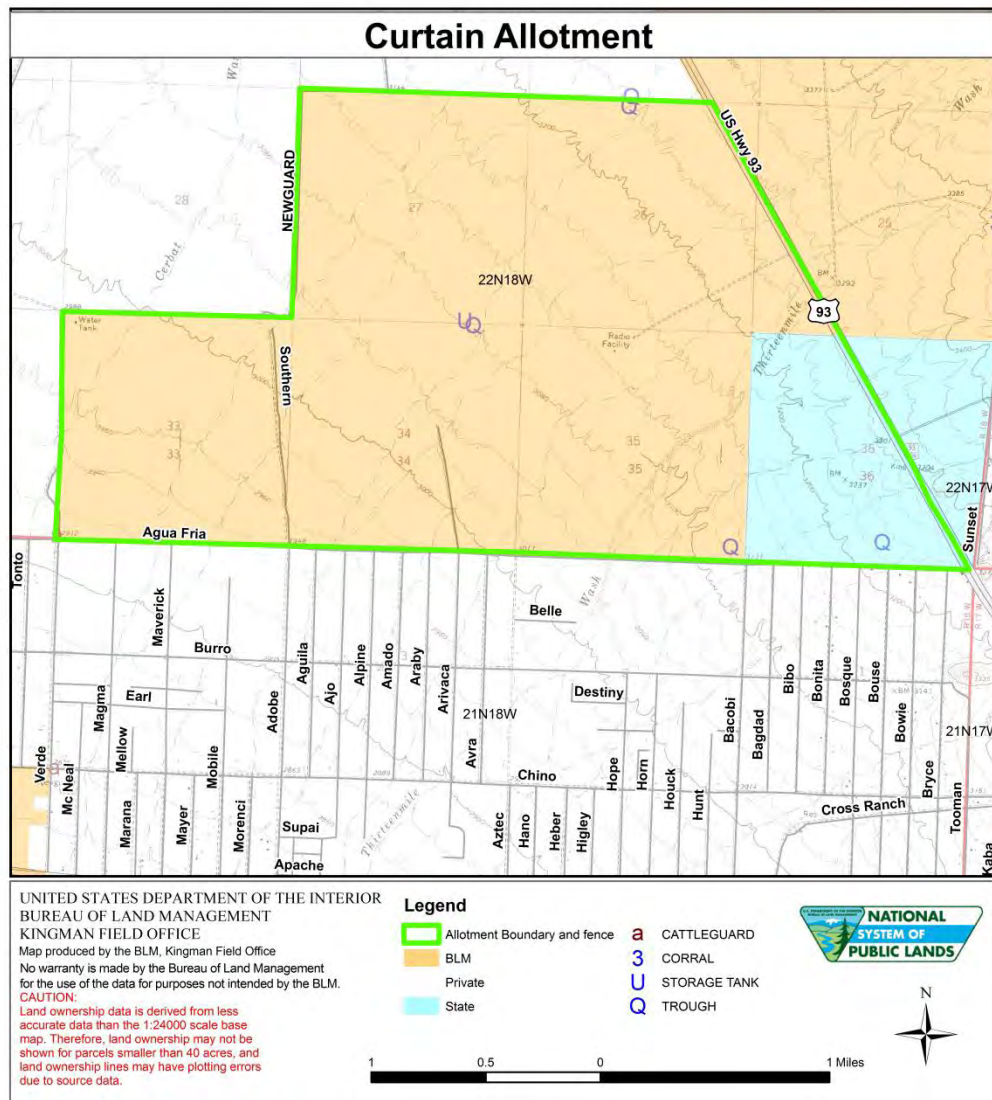


Figure 2: Map of Curtain Allotment.

3.1.2 Climate

This allotment is influenced by both winter, Pacific frontal storms, as well as by summer, Orographic, convective storms. The allotment receives approximately 9-11 inches of precipitation per year. Approximately 65% of the precipitation falls during the cooler months of

October through April and 35% falls during the months of May through September. The winter storms are usually widespread, gently soaking rains while large quantities of precipitation can be dropped in very short periods of time during the summer monsoonal storms.

Allotment ecosystems may be realizing effects from climate change. The BLM’s 2008 NEPA Handbook, H-1790-1, explains that a topic must have a cause-and-effect relationship with the Proposed Action or alternatives to be considered an issue (H-1790-1, p. 40). Climate change does not have a clear cause-and effect-relationship with the Proposed Action or alternatives. It is currently beyond the scope of existing science to identify a specific source of greenhouse gas emissions or sequestration and designate it as the cause of specific climate or resource impacts at a specific location. See Section 3.4.2 Reasonably Foreseeable Actions for more discussion about climate change.

3.2 Elements/Resources of the Human Environment

The BLM is required to consider many authorities when evaluating a Federal action. Those elements of the human environment that are subject to the requirements specified in statute, regulation, or executive order, and must be considered in all EAs (BLM 2008a), have been considered by BLM resource specialists to determine whether they would be potentially affected by the Proposed Action. These elements are identified in Table 5, along with the rationale for determination on potential effects. If any element was determined to be potentially impacted, it was carried forward for detailed analysis in this EA; if an element is not present or would not be affected, it was not carried forward for analysis. Table 5 also contains other resources/concerns that have been considered in this EA. As with the elements of the human environment, if these resources were determined to be potentially affected, they were carried forward for detailed analysis in this document.

Table 5. Elements/Resources of the Human Environment.

NP = not present in the area impacted by the Proposed Action

NI = present, but not affected to a degree that detailed analysis is required

PI = present with potential for impact – analyzed in detail in the EA

* = Supplemental Authorities to be Considered as Defined in H-1790-1 (page 139).

Resource/Critical Element	Presence	Rationale for Effect Determination
Air Quality*	NI	The allotment lies within the Mohave County PM-10 attainment area as classified by the Environmental Protection Agency. Effects from livestock operations were taken into consideration when the classification was made. Therefore, all alternatives would be in conformance with PM-10 attainment area air quality standards.
Areas of Critical Environmental Concern	NP	There are no areas of Critical Environmental Concern within this grazing allotment.
BLM Sensitive Plant Species	NP	There are no BLM Sensitive Plant Species within the allotment.
Cultural Resources*	NI	Cultural resources within this allotment exist in low density. Known cultural resources include primarily historic linear alignments (former railroad grade, wagon road, telegraph line) and sparse

Resource/Critical Element	Presence	Rationale for Effect Determination
		<p>artifact scatters associated with historical ranching and mining activities.</p> <p>According to Arizona BLM Handbook H-8110, Guidelines for Identifying Cultural Resources (BLM 1999), livestock grazing actions, such as permit renewals are generally exempt from cultural resources surveys, and range improvements are land disturbing activities that require site-specific survey. This proposed permit renewal is no exception. A total of five Class III cultural resources surveys have been conducted within the Curtain allotment since 1984. These surveys covered approximately 40% of the entire allotment. Three surveys (04-142, 04-162 and 04-174) were block surveys. The other two surveys (04-137 and 04-99) involved site specific inventories in support of range improvements and the widening of Agua Fria Drive. In particular, 04-174, a large block survey conducted as part of a range project evaluation request, concluded with an unconditional clearance recommendation for the permittee. Upon re-evaluating this information, it has been determined that the Proposed Action and alternatives would not adversely affect cultural resources.</p>
Environmental Justice*	NI	The Proposed Action would have no disproportionately high or adverse human health or other environmental effects on minority or low income segments of the population. Also, continued livestock grazing would have no effect on low income and minority populations
Farmlands (Prime or Unique)	NP	There are no prime or unique farmlands within the allotment.
Fish Habitat*	NP	No fish habitat is present on the allotment.
Floodplains*	NP	There are no floodplains on the allotment.
Forests and Rangelands*	NI	No impact to forests and rangelands as defined by the supplemental authority referring to the Healthy Forests Restoration Act of 2003.
Fuels / Fire Management	NI	The vegetation on the allotment does not contain hazardous fuels that are managed by the KFO fire program.
Geology / Mineral Resources / Energy Production	NI	Geology / mineral resources / energy production would not be impacted as a result of the Proposed Action or alternatives.
Invasive, Non-native Species	PI	Carried forward for detailed analysis.
Lands / Access	NI	There are no lands/access issues on the allotment.
Native American Religious Concerns*	NI	No Native American Religious Concerns were identified during scoping.

Resource/Critical Element	Presence	Rationale for Effect Determination
Paleontology	NP	There are no paleontological resources identified within the alluvial deposits present on the allotment.
Recreation	NI	Recreation on the allotment or surrounding area consists of hiking and OHV driving. Recreational opportunities would not be changed from the existing condition as a result of implementing the proposed action or alternatives.”
Socioeconomic Values	PI	Carried forward for detailed analysis.
Soil Resources	PI	Carried forward for detailed analysis.
Threatened, Endangered or Candidate Plant & Animal Species and Critical Habitat*	NP	There are no threatened, endangered, or candidate (T&E) plant or animal species or critical habitat on the allotment; therefore, there would be no affect to T&E species from any alternative.
Vegetation	PI	Carried forward for detailed analysis.
Visual Resources	NI	Visual Resources would not be impacted as a result of the Proposed Action or the alternatives.
Wastes (hazardous or solid)*	NP	No known hazardous or solid waste issues occur on the allotment.
Water Quality (drinking / ground)*	NP	No surface water is present on the allotment.
Wetlands / Riparian Zones*	NP	There are no wetlands/riparian zones on the allotment.
Wild and Scenic Rivers*	NP	There are no wild and scenic rivers on the allotment.
Wild Horses and Burros	NP	There are no wild horse and burro Herd Areas or Herd Management Areas on the allotment.
Wilderness*	NP	There is no designated wilderness on the allotment.
Wilderness characteristics	NP	There have been no wilderness characteristics identified on the allotment.
Wildlife (including BLM sensitive species and migratory birds*)	PI	Carried forward for detailed analysis.
Woodland / Forestry	NP	There are no woodland/forestry resources on the allotment.

3.3 Resources Present and Brought Forward for Analysis

- Invasive, Non-native Species
- Socioeconomic Values
- Soils
- Vegetation
- Wildlife (including sensitive species and migratory birds)

3.3.1 Invasive, Non-native Plant Species

Red brome and cheatgrass are present on the allotment, and other invasive, non-native plant species may also occur. The allotment is adjacent to a residential area and is frequently used by OHVs. Seeds can become attached to and transported by vehicles and eventually deposited in areas through which the vehicles travel. Additionally, the allotment is bordered on the east by US Hwy 93 (Figure 1) which further adds to the likelihood of the introduction of seeds from invasive, non-native species by vehicles.

Red brome is a winter annual grass that is self-pollinating and produces large numbers of viable seeds that are spread by wind, water, animals, and humans. It readily establishes in disturbed sites but has also shown the ability to establish in undisturbed landscapes. Its abundance is largely dependent on weather. Red brome is common throughout Mohave County.

Cheatgrass is a cool-season annual grass and, like most annuals, it is a prolific seed producer. Seeds readily attach to fur, clothing, and vehicles. It quickly invades heavily grazed rangelands, roadsides, burned areas, and disturbed sites. It is widely adapted and can be found in Arizona from desert valley bottoms to the tops of the highest mountain peaks.

3.3.1.1 Environmental Consequences to Invasive, Non-native Plant Species

Proposed Action

The Proposed Action would suspend the perennial permitted use until all Land Health Standards are met; therefore, desirable plant species would be expected to be more vigorous and capable of reproduction, resulting in less bare ground and less opportunity for establishment, spread and persistence of invasive, non-native plant species. See Section 3.3.6.1 Environmental Consequences to Vegetation for more discussion about potential effects to vegetation from the alternatives.

Ephemeral grazing may be applied for and authorized in years when annual forage is abundant enough to meet the criteria for ephemeral grazing authorization (Section 2.2 Actions Common to Proposed Action and Yearlong Grazing Alternative, Ephemeral Grazing). Future ephemeral grazing authorization on the Curtain Allotment is expected to be very infrequent because the current permittee has not applied for this type of use since 2001. Because of this and the guidelines for ephemeral grazing authorization, effects to vegetation, including invasive, non-native plants species, from ephemeral grazing would be expected to be minor.

Yearlong Grazing Alternative

Yearlong grazing would not provide rest to plant communities from grazing effects and would likely result in a gradual decrease in abundance and vigor of forage species, and therefore, more bare ground and less competition for invasive, non-native plant species. This situation would provide greater opportunity for establishment and spread of invasive, non-native plant species and would make it easier for those already established to persist. See Section 3.3.6.1 Environmental Consequences to Vegetation for more discussion about potential effects to vegetation from the alternatives.

In areas where livestock congregate and reduce the abundance or vigor of native plant species through grazing and trampling, the introduction or spread of invasive, non-native plant species may be more likely. Cattle can also contribute to the establishment and spread of these species by transporting seeds on their hair and in their feces.

Effects from ephemeral grazing would be the same as described under the Proposed Action.

As discussed in Section 1.1 Background, although the permittee is authorized to graze yearlong on the allotment, he has not done so since 2001 because OHV users and vandals make livestock grazing management too difficult.

No Livestock Grazing Alternative

Effects from this alternative would be the same as those discussed for the Proposed Action in this section. Effects from ephemeral grazing, however, would not occur.

3.3.2 Socioeconomics

Many livestock operations in Mohave County are dependent on federal and state lands. Sixty percent of Arizona's livestock operators depend on public lands to sustain their forage needs and operations. Public land grazing provides economic benefits to individual permit holders and contributes revenue to the local and regional economy. In addition to the contribution of ranching to the economy, ranching in the western U.S. often plays an important social role as residents of the rural west often identify with the tradition, land use, and history of ranching.

3.3.2.1 Environmental Consequences to Socioeconomics

Proposed Action

Because the rancher has not been utilizing the allotment for livestock grazing for approximately 13 years, there would be no change to the local economy from the Proposed Action. A slight social effect has likely occurred because residential expansion and associated OHV have resulted in making livestock grazing on the allotment impractical. Some OHV users leave gates open allowing livestock to leave the allotment, and vandals damage range improvement projects (fences, water tanks & troughs).

If ephemeral grazing is applied for and authorized in the next ten years, it may have a slight economic benefit to the permittee by allowing approximately 2-3 months of grazing but would be expected to have a negligible effect on the local economy.

Yearlong Grazing Alternative

There would be a slight economic benefit to the permittee with this alternative if livestock could graze on the allotment without the management difficulties from OHV use and vandalism. Because these problems have not been resolved and the grazing permit authorizes a relatively small number of AUMs of forage to be utilized by livestock, the cost of livestock management is currently higher than the economic benefit. Effects on social values would be the same as those discussed in this section under the Proposed Action.

Effects to the economy from ephemeral grazing would be the same as described in the Proposed Action of this section.

No Livestock Grazing Alternative

Effects from this alternative would be the same as those described in this section under the Proposed Action.

The effects from the loss of ephemeral grazing authorization would be expected to be negligible because of the infrequency of ephemeral grazing on the allotment.

3.3.3 Soils

Five different soil mapping units have been delineated on the Curtain Allotment according to the Natural Resource Conservation Service (NRCS) Soil Survey of Mohave County, Arizona, Central Part, 2006. These soils occur in Major Land Resource Area 30-Mohave Desert and are located within Soil Survey Area 697. Ecological sites are associated with these soil mapping units and describe site characteristics (physiographic, climate, soil, and water features) and plant community characteristics (plant species, vegetative states, and ecological dynamics). Table 6 provides information about site characteristics for each of the soil mapping units. These characteristics affect soil stability. Plant communities will be discussed in Section 3.3.6 Vegetation.

The Evaluation determined that Land Health Standards for soils were met. Overall, soils are intact and current vegetative cover is maintaining soil stability and processes. However, at key area 1, Indicator 3, which assesses pedestals and/or terracettes, was given a slight to moderate departure (from expected) rating because soil pedestals at plant bases were more pronounced than expected for the area. The formation of pedestals indicates soil movement is beginning to occur and is likely due to inadequate herbaceous ground cover. Indicator 12, which assesses functional/structural groups, was given a slight to moderate departure rating because big galleta occurred less frequently than expected. The decrease in herbaceous species and increase in woody species indicates a shift in the biotic community from what is expected for the ecological

site. This shift may affect the soil, hydrologic and biotic processes at the key area. If herbaceous cover continues to decline, soil erosion will increase and this area will soon (within 5 years) not meet Standard 1 (BLM 2013).

All three key areas were determined to not be meeting Standard 3 for plant communities. This standard determines whether or not productive and diverse upland (and riparian-wetland) plant communities of native species exist and are maintained. Some key species have declined in abundance or are not as abundant as they should be when compared to the ecological site description. It is important that appropriate perennial vegetation be maintained to provide soil cover and stability.

Table 6. Curtain Allotment Soil Mapping Units Site Characteristics.

MLRA 30 Soil Map Units (number and name)	Ecological Site Name	Surface texture	K factor ⁴	Wind erodability Group ⁵	% of allotment acres
6-Arizo-Ranconia- Riverwash complex, 1-3% slopes	Sandy Wash 6-9" p.z. ⁶	Gravelly sandy loam	.10	5	8
19-Circular complex, 1-3% slopes	Sandy loam upland 6-9" p.z. Loamy upland 6-10" p.z.	Loam	.32	5	16
32-Dutchflat sandy loam, 0-2% slopes	Sandy loam upland 6-9" p.z.	Sandy loam	.15	3	6
90-Mutang-Dutchflat complex, 0-3% slopes	Granitic/Schist upland 10-13" p.z. Alkaline Sandy Loam Upland 10-13" p.z. Fine	Gravelly sandy loam	.20	5	57
160-Vekol family loam, 1- 3% slopes	Clayey upland 10- 13" p.z.	Loam	.32	5	13

⁴ Erosion factor K indicates the susceptibility of a soil to sheet and rill erosion by water. Values range from 0.02 to 0.69. Other factors being equal, the higher the value, the more susceptible the soil is to sheet and rill erosion by water.

⁵ Wind erodibility group consists of soils that have similar properties affecting their susceptibility to wind erosion in cultivated areas. Group 1 are the most susceptible to wind erosion group 8 are the least susceptible.

⁶ p.z. is the abbreviation for precipitation zone.

3.3.3.1 Environmental Consequences to Soils

Proposed Action

The Proposed Action would suspend the perennial permitted use for ten years or until all Land Health Standards applicable to the Curtain Allotment are met. The objective is to increase herbaceous, perennial cover which would improve soil stability. Livestock grazing has not occurred on the allotment since 2001 and therefore, has not been affecting soil stability. Continued rest from livestock grazing would allow forage species to have greater reproductive success which would increase soil stability. See Section 3.3.6.1 Environmental Consequences to Vegetation for more discussion about potential effects to vegetation from the Proposed Action and the alternatives.

The permittee may apply for ephemeral grazing authorization on an annual basis. Effects from ephemeral grazing would be the same as discussed in Section 3.3.1.1 Environmental Consequences to Invasive, Non-native Plant Species, Proposed Action.

Yearlong Grazing Alternative

If effects from OHV use and vandals are resolved and livestock grazing could be resumed on the allotment, yearlong grazing would be expected to result in less reproductive success of herbaceous, perennial plant species and therefore, less protective cover for soil. Soil would be more exposed and vulnerable to movement; its condition would likely decline with this alternative.

Effects from ephemeral grazing would be the same as discussed in 3.3.1.1, Proposed Action.

No Livestock Grazing Alternative

With the absence of livestock grazing, it is expected that soil condition would be maintained and may improve. Other factors such as frequent OHV use and drought continue to affect the soil stability but the absence of livestock grazing would allow perennial forage species greater opportunity for reproductive success which would improve soil stability. See Section 3.3.6.1 Environmental Consequences to Vegetation for more discussion about potential effects to vegetation from the Proposed Action and the alternatives.

3.3.4 Wildlife and Migratory Birds

Numerous wildlife species and migratory birds are expected to live, nest, and forage on the allotment. Wildlife species typical of the Mohave Desert include the kangaroo rat, desert woodrat, desert night lizard, Mohave rattlesnake, black-throated sparrow, cactus wren, Gambel's quail, mourning dove, and mule deer.

Habitat for the following Birds of Conservation Concern may be found on the Curtain Allotment: Costa's hummingbird, curve-billed thrasher, Bendire's thrasher, LeConte's thrasher (also BLM Sensitive species), western burrowing owl (also BLM Sensitive species), golden eagle (also

BLM Sensitive species), American peregrine falcon (also BLM Sensitive species), and the prairie falcon. In April 2010, BLM and USFWS entered into an MOU to promote the conservation of migratory birds, as required in Executive Order 13186. These species are protected by law, and it is important to maintain habitat for these species so migratory patterns are not disrupted. The USFWS has created a list of Birds of Conservation Concern (USFWS 2008).

The Le Conte's thrasher, western burrowing owl, golden eagle, and American peregrine falcon, all migratory birds, are special status species and are addressed in Section 3.3.5 Special Status Species.

Migratory birds are protected and managed under the Migratory Bird Treaty Act (MBTA) of 1918, as amended (16 U.S.C. 703 et. seq.) and Executive Order 13186. Under the MBTA nests (nests with eggs or young) of migratory birds may not be harmed, nor may migratory birds be killed.

3.3.4.1 Environmental Consequences to Wildlife and Migratory Birds

When a pasture is meeting Standard 3 (upland plant community), it is expected to have and maintain a desirable native plant community that would provide habitat for the expected variety and abundance of native wildlife species appropriate for that site. A diverse and vigorous plant community is going to support a more diverse and abundant insect population, which will provide more of a prey base for a wide variety of bird species and general wildlife compared to a plant community with low vigor and limited diversity. In diverse and vigorous pastures, birds and wildlife, in general, will have suitable nest sites to choose from, can better avoid predators, and are able to obtain sufficient food to raise a successful brood.

Livestock grazing and associated trampling can affect wildlife and migratory bird species by altering forage abundance and the abundance and quality of nest. Cattle could occasionally trample ground nests or knock nests out of small shrubs as they pass, causing nest failure. These events are expected to be rare unless cattle are stocked at very high densities. Pastures that are grazed in the spring are going to offer less cover for ground nesting birds. This would make a suitable nest site more difficult to find, expose nests to predators, and reduce nest success. Pastures that are deferred during the spring, when most song birds are nesting, would offer abundant cover for ground nesting birds and would have increased seeds available as forage for birds and small mammals.

Proposed Action

Over the next ten years it is expected that the vegetative communities would improve and make progress towards meeting Standard 3 due to no grazing by livestock, with the occasional exception of ephemeral use grazing. Full recovery is expected to take 20 to 30 years. Forage abundance and cover may improve for wildlife and increase the availability of suitable nesting sites for migratory birds. Nest exposure to predators may decrease as a result of increased perennial plant species cover. Key forage plant species for some species of wildlife and birds would increase as the plant communities reach Standard 3.

In years of abundant ephemeral bloom, wildlife, like livestock, take advantage of the plentiful nutritious ephemeral forage. Livestock use of these plants is not allowed to exceed 50%, and typically use is much less because of the great quantity of available ephemeral forage. Once the ephemeral plants dry and become unpalatable, livestock are removed.

Yearlong Grazing Alternative

This alternative would allow for grazing to occur yearlong which includes the spring and summer growing seasons and during the migratory bird nesting season. A potential gradual decline in the abundance and vigor of key forage species is expected which would affect seeds produced by these plants, and cover available to migratory birds and other wildlife. A decline in key forage species may cause an indirect decline in the amount and types of insects that occur on the allotment. This may indirectly affect the insect forage base available to birds and other wildlife that eat insects or feed insects to their young. Because cattle would be present during the bird nesting season, there is potential that trampling of nests by livestock could occur.

If the grazing permittee chooses to not graze on the allotment, as he has done over the last 13 years, then it is expected that impacts to migratory birds and other wildlife would be similar as those described for the Proposed Action.

Effects from ephemeral grazing would be the same as discussed under the Proposed Action.

No Livestock Grazing Alternative

Effects from the No Livestock Grazing Alternative are expected to be similar to those described in this section for the Proposed Action with the exception that ephemeral grazing would not occur under this alternative; therefore, all ephemeral forage would remain available to birds and other wildlife species.

3.3.5 Special Status Species

Special status species include federally listed (threatened or endangered) or proposed and BLM sensitive species, which include Federal candidate, proposed species, and delisted species within 5 years of delisting. The objectives of the BLM's special status species policy are: "To conserve and/or recover Endangered Species Act (ESA) listed species and the ecosystems on which they depend so that ESA protections are no longer needed for these species; and to initiate proactive conservation measures that reduce or eliminate threats to Bureau sensitive species to minimize the likelihood of and need for listing of these species under the ESA" (BLM 2008b).

Threatened or Endangered Species

There are no Threatened or Endangered Species or Critical Habitat found on the allotment.

Sensitive Species

Sensitive species are species that require special management consideration to avoid potential future listing under the ESA and that have been identified in accordance with procedures set forth in BLM Manual 6840.

3.3.5.1 Sensitive Species

The golden eagle, American peregrine falcon, Le Conte's thrasher, western burrowing owl, Townsend's big-eared bat, Allen's big-eared bat, California leaf-nosed bat, and the cave myotis are species designated as BLM Sensitive Species which occur or are likely to occur on the allotment.

3.3.5.1.1 Environmental Consequences to Sensitive Species

Proposed Action

BLM Sensitive Bat Species - There are no known bat roosts or bat roost habitat located on the allotment; however, the upland areas provide foraging habitat for bats. Impacts to foraging bats are similar to those described for foraging migratory birds. When a pasture is meeting Standard 3, it is expected to have a diverse and vigorous plant community which would support a more diverse and abundant insect population, the prey base for bats.

Golden Eagle and Peregrine Falcon - Livestock grazing is unlikely to affect the amount of available prey (rabbits and birds) for these species because the habitat requirements of their prey would be expected to be met; therefore, the reproductive success of the prey would be maintained. Livestock grazing would not affect the nesting locations of these two species because their nests are found on inaccessible cliff faces and livestock would not be present during the nesting season.

Sensitive Bird Species - Effects from this alternative are expected to be the same as described in the Proposed Action, Section 3.3.4.1 Environmental Consequences to Wildlife and Migratory Birds.

Yearlong Grazing Alternative

BLM Sensitive Bat Species - There are no known bat roosts or bat roost habitat located on the allotment however the upland areas provide foraging habitat for bats. Impacts to foraging bats are similar to those described for wildlife and foraging migratory birds in Section 3.3.4.1, Environmental Consequences to Wildlife and Migratory Birds, Yearlong Grazing Alternative.

Effects from ephemeral grazing would be the same as discussed for the Proposed Action, Section 3.3.4.1 Environmental Consequences to Wildlife and Migratory Birds.

Golden Eagle and Peregrine Falcon - Effects from this alternative are expected to be the same as described for the Proposed Action, Section 3.3.5.1.1 Environmental Consequences to Sensitive Species.

BLM Sensitive Bird Species - Effects from this alternative are expected to be the same as described for the Yearlong Grazing Alternative, Section 3.3.4.1 Environmental Consequences to Wildlife and Migratory Birds.

No Livestock Grazing Alternative

Effects to BLM Sensitive bat species, golden eagle, peregrine falcon, and BLM Sensitive bird species are expected to be the same as described for the Proposed Action, Section 3.3.4.1, Environmental Consequences to Wildlife and Migratory Birds.

3.3.6 Vegetation

The vegetative community on the Curtain Allotment is Mohave Desert Scrub. Typical species include creosote bush, rayless goldenhead, white bursage, big galleta, cheeseweed, and catclaw. The Evaluation completed in 2013 used three key areas to assess the Land Health Standards. All sites were determined to not be meeting Standard 3 for plant communities because the objectives for cover, frequency, or composition were not achieved (Appendix A).

3.3.6.1 Environmental Consequences to Vegetation

Proposed Action

The Proposed Action would continue to provide rest from livestock grazing, and it is expected that this would give the forage species better opportunity to increase in abundance and to maintain their vigor. Grazing is one of several environmental stressors that can affect rangeland plants. Drought, wildfire, invasive species, insects, and disease may also affect plants. Vegetative communities, particularly forage species, benefit from rest from grazing. Absent livestock grazing, utilization of plants by wildlife would still occur but would be greatly reduced, allowing forage species greater opportunity for reproductive success and increased ability to withstand the other environmental stressors. “By allowing important forage plants to grow unhindered during the period most favorable for their growth, they are enabled to produce a greater quantity of seed.” Stoddart, Smith, and Box (1975) found that a “nearly equal advantages result from deferring grazing on plants that reproduce vegetatively”.

Effects to vegetation from ephemeral grazing would be expected to be minor. See Section 3.3.1.1 Environmental Consequences to Invasive, Non-native Plant Species, Proposed Action for more discussion.

Yearlong Grazing Alternative

If effects from OHV use and vandals are resolved and livestock grazing could be resumed on the allotment, yearlong grazing would be expected to result in less reproductive success of forage species and a gradual decline in their abundance and vigor because this alternative does not allow rest from livestock grazing at any time during the year. If abundance and vigor of forage species are reduced, these species are less able to withstand the other environmental stressors and may eventually be eliminated from the area.

Effects to vegetation from ephemeral grazing would be the same as discussed in Section 3.3.1.1 Environmental Consequences to Invasive, Non-native Plant Species, Proposed Action.

No Livestock Grazing Alternative

Effects to vegetation from this alternative are expected to be the same as with the Proposed Action in this section. Effects from ephemeral grazing, however, would not occur.

3.4 Cumulative Effects

Cumulative effects are those effects resulting “from the incremental impact of the action when added to other past, present, and reasonably foreseeable actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions” (40 CFR 1508.7). Cumulative effects were analyzed in the Kingman RMP/Final EIS (BLM 1995) to which this analysis is tiered. All resource values addressed in this chapter have been evaluated for cumulative effects. Inter-related resources with similar effects have been grouped together for the cumulative impact analysis.

If there is no net effect to a particular resource from an action, then there is no potential for cumulative effects. The action alternatives encompass a ten-year time period; therefore, that timeframe was selected for analysis.

Guidance issued by the Council on Environmental Quality on June 24, 2005, points out that review of past actions is required only to the extent that this review informs agency decision-making regarding the alternatives. The guidance states, “agencies can conduct an adequate cumulative effects analysis by focusing on the current aggregate effects of past actions without delving into the historical details of individual past actions.” This is because a description of the current state of the environment inherently includes the effects of past actions.

Cumulative Effects Assessment Area

Potential effects to vegetation from livestock grazing could subsequently affect soils within as well as outside the allotment, but the extent would be limited by natural and manmade features (i.e., highways, residential area, watershed) surrounding the allotment. The Cumulative Effects Assessment Area (Figure 3) is the area delineated by considering the extent of potential effects based on those limiting features. Curtain Allotment slopes southwestward. Water movement to the allotment is, therefore, altered by US Highway 93 which borders the allotment on the east. It also fragments wildlife habitat, greatly inhibiting some species’ east/west movement. The west side of the allotment is bordered by a natural topographic watershed. The edge of the watershed limits potential effects to soils from runoff from the allotment. The allotment is bordered on the south by a residential community and adjacent to the community is Highway 68. The distance that runoff from the allotment can travel is limited by these two manmade features. Wildlife is affected similarly as it is by effects from Highway 93; habitat is fragmented and north/south movement is inhibited for some species.

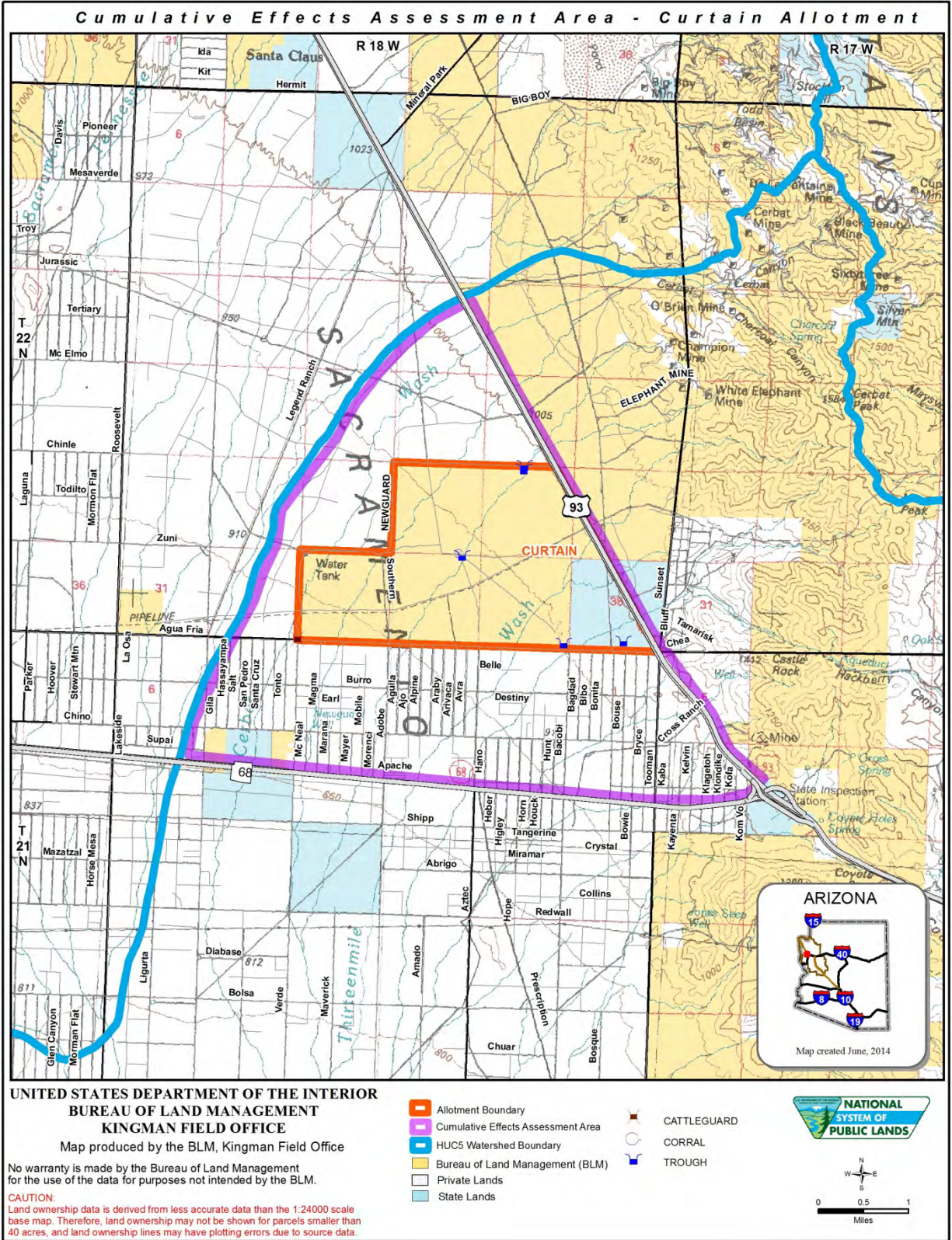


Figure 3: Cumulative Effects Assessment Area.

3.4.1 Past and Present Actions

On the basis of aerial photographic data, agency records, and Geographic Information System (GIS) analysis, the following past and present actions, which have impacted the assessment area to varying degrees, have been identified: livestock grazing, recreation, wildfire, and ROWs.

Livestock grazing – The allotment has not been used for livestock grazing in the past ten years, but residual effects to vegetation from decades of grazing likely remain. Livestock grazing can affect the amount and vigor of forage species. Soil instability and greater opportunity for the spread of invasive, non-native plant species can subsequently occur.

Recreation – OHV use is frequent on the allotment. Roads and cross-country travel can affect precipitation run-off and may lead to increased soil movement. Vehicular travel can disturb soil and vegetation, increasing the opportunity for the establishment and spread of invasive, non-native plant species.

Wildfire – Five small (less than 1 acre) wildfires have occurred on the allotment in the past 30 years, the most recent occurred in 2002. Residual effects, if they exist, from these fires are likely minor due to the fires' size and the amount of time that has passed. The burned areas may have provided an area of greater opportunity for the establishment of invasive, non-native species.

ROWs – A communication line ROW runs the full east/west length of the allotment for approximately 3.4 miles. The installation and maintenance of this line has resulted in ground disturbance and long term effects to vegetation. Vehicular travel along the ROW by maintenance crews and OHVs prevents recovery of vegetation to pre-disturbance condition.

3.4.2 Reasonably Foreseeable Actions

Because the effects of the Proposed Action and Alternatives are expected to last ten years, this time frame is considered to be most appropriate for considering the incremental effect of reasonably foreseeable actions. The past and present actions discussed above are expected to persist for ten additional years. Continuation of these activities in the future would result in effects similar to those that have resulted from past activities.

Livestock Grazing – Livestock grazing may continue under the Proposed Action or under the Yearlong Grazing Alternative but would be expected to be very limited due to grazing management difficulties and the need for rest from livestock grazing to improve rangeland condition.

Recreation – OHV use may increase as a result of population growth in the assessment area and surround areas. Recreation activities, such as OHV use, would likely continue and/or increase over time.

Wildfire – More wildfires could occur within the next ten years. In the event of wildfire, effects to natural resources from suppression activities such as the construction of dozer lines, cross-country travel of engines, back-burning, and retardant drops are reasonably foreseeable.

ROWS – Vehicular travel along the communication line by maintenance crews and OHVs is expected to continue and will likely prevent the recovery of vegetation to pre-disturbance condition. Additional ROWs may be applied for and granted in the next ten years.

Land Disposal – The Kingman RMP identified the public lands located within the Curtin Allotment as lands for disposal. There are presently no land exchanges involving these lands underway, but an exchange could occur in the next ten years. Analysis of potential effects from land disposal would be completed in a separate EA based on the Proposed Action and alternatives and is outside the scope of this EA.

Climate Change - Rangeland and livestock ecosystems are complex with numerous interactions among the system's living and non-living components. Consequently, the effects of a changing climate will have direct and indirect effects at varying spatial and temporal scales. Climatic changes such as increased atmospheric concentration of CO₂, changes in temperature, and changes in precipitation patterns have the potential to affect rangeland ecosystems in the following ways: 1) changes in decomposition rates; 2) changes in above-ground, net primary production; 3) shifts in grassland species; 4) changes in evapotranspiration and runoff; and 5) changes in forage quality (Ojima et al. 1991; Breymeyer et al. 1996; IPCC 1996, IPCC 2007). The effects that these changes may have on livestock grazing in the allotment as well as the contribution that such grazing may have to climate change are currently unknown.

3.4.3 Analysis of Cumulative Effects

3.4.3.1 Invasive, Non-Native Plant Species

Effects from Past and Present Actions

Ground disturbances associated with past and present actions (section 3.4.1 Past and Present Actions) have given invasive, non-native plant species better opportunity to establish and spread.

Effects from Reasonably Foreseeable Actions

Effects, as described in Section 3.4.2 Reasonably Foreseeable Actions, from livestock grazing, recreation, wildfire, and ROWs activities would likely continue.

There may be an increase in OHV activity if the population within the Cumulative Effects Assessment Area or the surrounding area increases. Increased OHV use could affect soil and vegetative communities through ground disturbance and seed deposition which can increase the probability of introduction and spread of invasive, non-native species.

Wildfires are common in northern Arizona and have the potential to convert native range to non-native species. Upland areas may be susceptible to erosion following wildfire in a watershed which could lead to proliferation of invasive weeds in these areas. Fire emergency stabilization and rehabilitation efforts would be undertaken to help prevent the conversion of native range to non-native species.

Cumulative Effects

Proposed Action

Maintenance or improvement of native plant communities would be anticipated under the Proposed Action. If Land Health Standards are met within the ten-year grazing permit period, the permittee may graze livestock perennially. However, because of the management difficulties from OHV users and vandals, it is not anticipated that the allotment will be used for perennial or ephemeral livestock grazing in the next ten years. If livestock grazing occurs, it would be expected to contribute to the establishment and spread of invasive, non-native plant species but the contribution would likely be minimal (See Section 3.3.1.1 Environmental Consequences to Invasive, Non-native Plant Species, Proposed Action.). In the event of livestock grazing, areas of livestock concentration may be more vulnerable to the establishment of invasive, non-native plant species. The Proposed Action is expected to have a neutral or slightly reduced cumulative effect on invasive, non-native species.

Yearlong Grazing Alternative

If effects from OHV use and vandals are resolved and livestock grazing could be resumed on the allotment, yearlong grazing would be expected to contribute to the establishment and spread of invasive, non-native plant species. Because this alternative would not allow rest for vegetative communities from livestock grazing at any time during the year, it may result in a gradual decline in abundance and vigor of forage species. This situation would provide greater opportunity for establishment and spread of invasive, non-native plant species and would make it easier for those already established to persist. The effects from this alternative, when combined with the effects from other past and present actions would be expected to result in more cumulative effects to invasive, non-native plant species than the Proposed Action or No Grazing Alternative.

No Livestock Grazing Alternative

Livestock grazing would not contribute to the introduction or spread of invasive, non-native species. Without livestock grazing, native plant communities would have better opportunity to reproduce, making them more resilient to infestation by invasive, non-native plant species from other ground disturbing activities.

3.4.3.2 Socioeconomics

Effects from Past and Present Actions

The local economy in the Cumulative Effects Assessment Area has likely been affected by past and present actions on the grazing allotment. The allotment is relatively small at approximately 3,690 acres; therefore, these activities have been small-scale with minor effects to the economy.

Effects from Reasonably Foreseeable Actions

There will likely be a continuation of effects over the next ten years as described in Section 3.4.1 Past and Present Actions. An increase in recreation may occur if the area experiences population growth, but the increase would not be expected to affect the economy measurably.

Cumulative Effect

As discussed in Section 3.3.2.1 Environmental Consequences to Socioeconomics, effects to social values, local economy and the permittee from the Proposed Action and Alternatives would be expected to be minor and add very slightly to the cumulative effects.

3.4.3.3 Soils and Vegetation

Effects from Past and Present Actions

Vegetation and soils have been affected by livestock grazing, wildfire, OHV use, and a utility ROW grant. Effects to vegetation from wildfire, OHV use (roads/trails) utility installation and maintenance have been in concentrated areas. Effects from livestock grazing have been widespread and less obvious. Some actions, such as OHV use and utilities installation and maintenance, result in direct soil disturbance while livestock grazing can result in indirect soil disturbance if vegetative communities become altered to the extent that soils are no longer adequately protected from erosion. Wildfires have affected the vegetation in small areas, and there may be residual effects. Effects, if they exist, are likely minor due to the size of the fires and the amount of time that has passed since their occurrence. The burned areas may have provided an area of greater opportunity for the establishment of invasive, non-native species.

The Evaluation concluded that Standard 1 for soils was achieved at key areas, yet, there was some indication of soil instability at one key area. Standard 3 for upland plant communities was not achieved at the key areas. All past and present actions, combined with below average precipitation have likely contributed to the current condition of the rangeland on the allotment.

Effects from Reasonably Foreseeable Actions

It is expected that activities from past and present actions will continue into the next ten years at the current levels. There may be a slight increase in OHV use if the area population increases. Effects would be the same as described in Section 3.4.1 Past and Present Actions and Section and 3.4.2 Reasonably Foreseeable Actions.

Cumulative Effect

Proposed Action

Effects from past, present, and future actions would continue. Livestock grazing under the Proposed Action is not expected to add to the cumulative effect and may lessen the cumulative effect if rangeland conditions improve due to the absence of perennial livestock grazing.

Yearlong Grazing Alternative

Effects from past, present, and future actions would continue. If effects from OHV use and vandals are resolved and livestock grazing could be resumed on the allotment, yearlong grazing would be expected to result in a gradual decline in rangeland condition and would add to the cumulative effects.

No Livestock Grazing Alternative

Effects from all past, present, and future actions, except livestock grazing, would continue. The absence of livestock grazing would be expected to result in maintenance or improvement to soil and plant community condition and would, therefore, have a neutral or lessening effect on cumulative effects.

3.4.3.4 Wildlife, Migratory Birds, and Special Status Species

Effects from Past and Present Actions

Effects to special status species and other wildlife from past and present actions would continue as described in Sections 3.4.1 Past and Present Actions.

Livestock grazing has affected the habitat of wildlife, migratory birds, and special status species by altering plant community composition and perennial plant cover. Wildfire has altered the plant community in a small area of habitat (less than 5 acres) over the last 10 years. It is unlikely that recreation has affected the above species unless the animals were run over and crushed by OHV vehicles. The 3.4 mile communication line ROW has permanently altered habitat along its entire length. The road along this line has resulted in the removal of the native plant community (wildlife habitat) along its route. Continual use of the road prevents the recovery of habitat to pre-disturbance condition. Wildlife, migratory birds, and special status species would have limited use of this area for foraging or nesting because of the lack of vegetation.

Effects from Reasonably Foreseeable Actions

Impacts described above in Effects from Past and Present Actions would continue. If the urban population increases, OHV use in wildlife habitat would increase potentially causing more vehicle and wildlife conflicts. An increase in OHV use could cause vegetative disturbance and alter habitat components of food and cover for wildlife. Should a land disposal occur in this area, urban development would likely follow resulting in the destruction of 3,250 acres of wildlife, migratory bird and special status species habitat. All past and present actions, combined with below average precipitation, would likely contribute to the future condition of the rangeland on the allotment.

Cumulative Effect

Proposed Action

Effects from past, present, and future actions as described in Sections 3.4.1 Past and Present Actions and 3.4.2 Reasonably Foreseeable Actions would continue. Maintenance or improvement of native plant communities is anticipated under the Proposed Action. The absence of livestock grazing on the public land is expected to result in an improvement to rangeland conditions and would, therefore, lessen the cumulative impacts of forage competition between livestock and wildlife.

Livestock grazing in the form of ephemeral use is not expected to add measurably to the cumulative effects to wildlife.

Yearlong Grazing Alternative

Effects from all past, present, and future actions would continue (Sections 3.4.1 Past and Present Actions and 3.4.2 Reasonably Foreseeable Actions). Maintenance or improvement of native plant communities is not expected under this alternative. This could cumulatively affect the amount and abundance of key forage plants (See Section 3.3.6.1 Environmental Consequences to Vegetation, Yearlong Grazing Alternative) available to wildlife, over the next ten years, on the allotment.

No Livestock Grazing Alternative

Effects from all past, present, and future actions as described in Sections 3.4.1 Past and Present Actions and 3.4.2 Reasonably Foreseeable Actions would continue. The absence of livestock grazing on the public land is expected to result in an improvement to rangeland condition and would therefore lessen the cumulative impacts of forage competition between livestock and wildlife.

4.0 LIST OF PREPARERS

Celeste Mimnaugh
Donald McClure
Rebecca Peck
Karen Reichhardt
Sally Olivieri
Timothy Watkins

Rangeland Management Specialist
Assistant Field Manager, Resources
Wildlife Biologist
Grazing Strike Team Leader
GIS Specialist
Archaeologist

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Acronyms and Abbreviations used in this EA

AUM	Animal Unit Month
BLM	Bureau of Land Management
CFR	Code of Federal Regulations
EA	Environmental Assessment
EIS	Environmental Impact Statement
ESA	Endangered Species Act
FLPMA	Federal Land Policy and Management Act
GIS	Geographic Information System
ID	Interdisciplinary
KFO	Kingman Field Office
MBTA	Migratory Bird Treaty Act
MOU	Memorandum of Understanding
NEPA	National Environmental Policy Act
NRCS	Natural Resource Conservation Service
OHV	Off-Highway Vehicle
p.z.	Precipitation Zone
ROWs	Rights-of-Way
RMP	Resource Management Plan
T&E	Threatened and Endangered Species
TGA	Taylor Grazing Act
USFWS	United States Fish and Wildlife Service

6.0 APPENDICES

**Appendix A. The Evaluation of Standards for Rangeland Health for the
Curtain Allotment.**



An Evaluation of
Standards for
Rangeland Health

Curtain Allotment

INTRODUCTION

The Kingman Field Office (KFO) has completed an evaluation of Standards for Rangeland Health (BLM-AZIM-99-012) for Curtain Allotment. This evaluation is completed in accordance with the BLM Washington Office Instruction Memorandum 2009-007. Let us look at the 3 Arizona *Standards for Rangeland Health*:

- ⇒ *Standard 1*, Upland Health - *Upland soils exhibit infiltration, permeability, and erosion rates that are appropriate to soil type, climate and landform (Ecological site).*
- ⇒ *Standard 2*, Riparian-Wetland Sites - *Riparian-wetland areas are in proper functioning condition*
- ⇒ *Standard 3*, Desired Resource Conditions - *Productive and diverse upland and riparian-wetland plant communities of native species exist and are maintained.*

These are the determinations that must be made when evaluating the health of Arizona BLM public land.

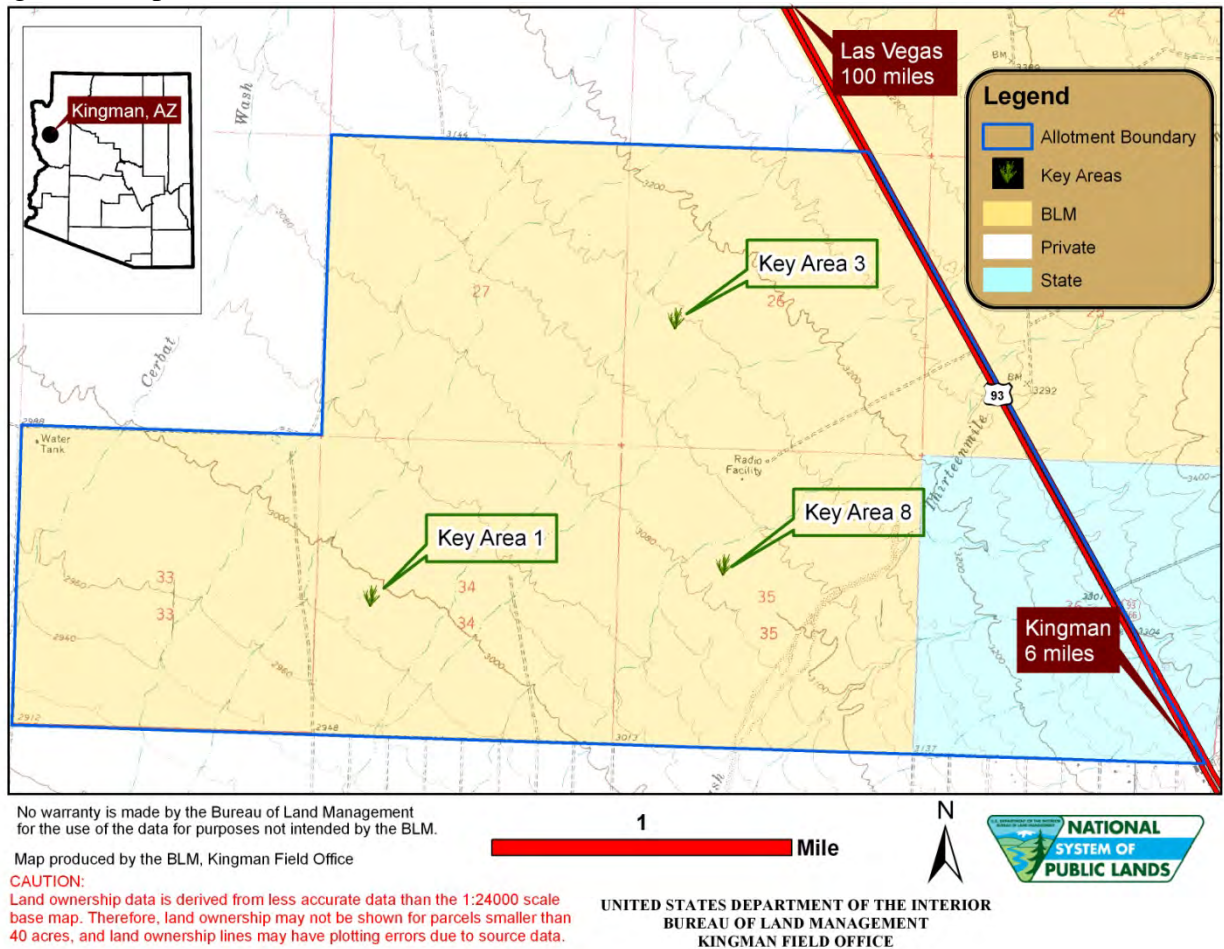
Are plants as diverse and abundant as they should be? Is the soil protected from erosion? Are the riparian areas functioning as they should? These are some of the questions that are answered when the BLM evaluates rangeland health. They are important questions to answer because the health of the rangelands is essential for the continued use and enjoyment of these public rangelands.

ABOUT CURTAIN ALLOTMENT

The Curtain Allotment evaluation area (evaluation area) encompasses 3,250 acres of public land in northwestern Arizona. It lies on the gently sloping alluvial fans west of the Cerbat Mountains approximately seven miles northwest of Kingman, adjacent to US Highway 93. The area slopes southwest toward the headwaters of Sacramento Wash. The elevation ranges from

approximately 3,000 feet, to 3,300 feet. The vegetative community is Mohave Desert Scrub and typical species include creosote bush, rayless goldenhead, white bursage, big galleta, cheeseweed, and catclaw. The allotment receives 9-11 inches of rain each year with most falling in the winter and some in erratic summer monsoons.

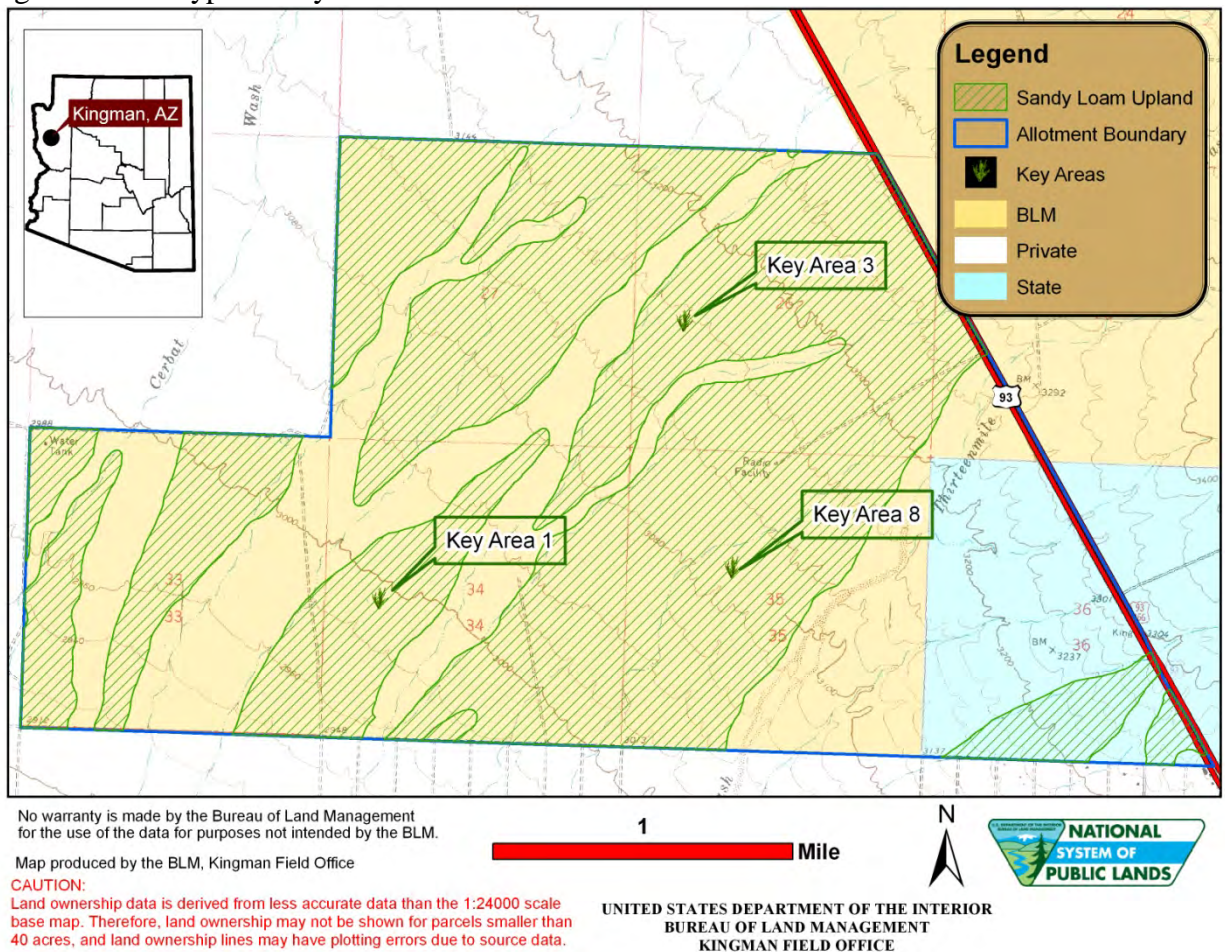
Figure 1. Map of Curtain Allotment



Key Areas

Several methods are used to collect land health information but first, “key areas” must be chosen. Key areas are chosen to be representative of the major ecological sites within the evaluation area (Interagency Technical Reference 1734-4). All three key areas used to evaluate Curtain Allotment are within sandy loam upland soil type.

Figure 2. Soil Type at Key Areas



Three key areas were used in this evaluation and were established in the 1980s to monitor changes in vegetation. Each key area is comprised of many different perennial plant species and although data is collected for each of them, “key” species are chosen and given closer scrutiny. Key species are selected depending on objectives and data needs. These are generally species that are an important component of a plant community and serve as indicators of change.

By monitoring the long-term change in abundance of these species, conclusions can usually be drawn about the health and maintenance of not only these plants, but also the other perennial plants and the overall health of the evaluation area. Therefore, the vegetative component of this evaluation, other than perennial cover, will be focused on key species at each key area. (*Note: perennial cover data and perennial cover objectives include all perennial plants at the key area.*)

METHODS USED

Standard 1 - Upland soils exhibit infiltration, permeability, and erosion rates that are appropriate to soil type, climate and landform

To assess land health as it relates to Standard 1, the KFO uses 17 indicators (*Technical Reference 1734-6 Interpreting Indicators of Rangeland Health*) to evaluate how well ecological processes are functioning based on soil/site stability, hydrologic function, and biotic integrity. Each of the 17 indicators are evaluated by an interdisciplinary team (ID team) and then compared to what is expected for the key area.

Each indicator is evaluated by the ID team and compared to what is expected for the site. Expectations are based on past monitoring data, Natural Resource Conservation Service (NRCS) Ecological Site Descriptions, NRCS Reference Sheets (when available), and professional judgment. Indicators are rated according to their departure from the expected and when combined, inform the ID team of how the three ecological processes are functioning and whether the key area is meeting Standard 1.

Standard 2 - Riparian-wetland areas are in proper functioning condition

Standard 2 is not applicable in this evaluation area because there are no wetland or riparian habitats.

Standard 3 - Productive and diverse upland and riparian-wetland plant communities of native species exist and are maintained.

Objectives for meeting Standard 3 were developed by an interdisciplinary team for each key area using past monitoring data, NRCS Ecological Site Guides, and professional judgment. Current monitoring data was compared to the objectives for each key area to determine if it was meeting Standard 3.

At each key area data was collected using Frequency and Dry Weight Rank Methods, following guidance in BLM Technical Reference 1734-4. These methods provide information about ground cover, plant frequency and plant relative composition. Data is gathered at 200 points along 4 transect lines using a 40 cm x 40 cm frame. The cover data provides information about soil exposure, frequency provides information about how often a particular species occurs and dry weight rank provides information about the abundance of a particular species relative to other species (composition) at the key area.

Figure 3. Frame for Frequency and Dry Weight Rank Methods



DATA ANALYSIS

The data analysis will look at each key area and how it rated for Standard 1 and Standard 3 of the *Standards for Rangeland Health*. As stated previously, the evaluation does not have wetland or riparian habitats and was not evaluated for Standard 2.

Key Area 1

Figure 4. Key Area 1



Standard 1:

On November 20, 2012, upland health was assessed at key area 1. 15 of the indicators were rated as “none to slight” departure from what is expected for the key area. 2 indicators (indicators 3 and 12) were rated as “slight to moderate” departure. Based on results of the indicators, this key area was determined to be **meeting Standard 1**.

Rationale: Indicator 3, which assesses pedestals and/or terracettes, was given a slight to moderate departure rating

because soil pedestals at plant bases were more pronounced than expected for the area. The formation of terracettes indicates soil movement is beginning to occur and is likely due to the reduction in herbaceous ground cover. Overall, soils are intact and current vegetative cover is maintaining soil stability and processes.

Indicator 12, which assesses functional/structural groups, was given a slight to moderate departure rating because big galleta occurred less frequently than expected. The decrease in herbaceous species and increase in woody species indicates a shift in the biotic community from what is expected for the ecological site. This shift may affect the soil, hydrologic and biotic processes at the key area. If herbaceous cover continues to decline, soil erosion will increase and this area will soon (within 5 years) not meet Standard 1.

Standard 3:

Based on results of the data, as compared to objectives, this key area was determined to **not be meeting Standard 3.**

Rationale: The area is meeting perennial vegetative cover objective. Data in Table 1 show a significant decline in the frequency of big galleta. Sand dropseed and threeawn have historically been a small component of the perennial grasses in the area but are maintaining a static trend and meeting objectives. Bush muhly and black grama show a static trend but are not abundant enough to meet objectives. Globemallow is meeting objectives. Big galleta is meeting its composition objective but the remaining grasses are not.

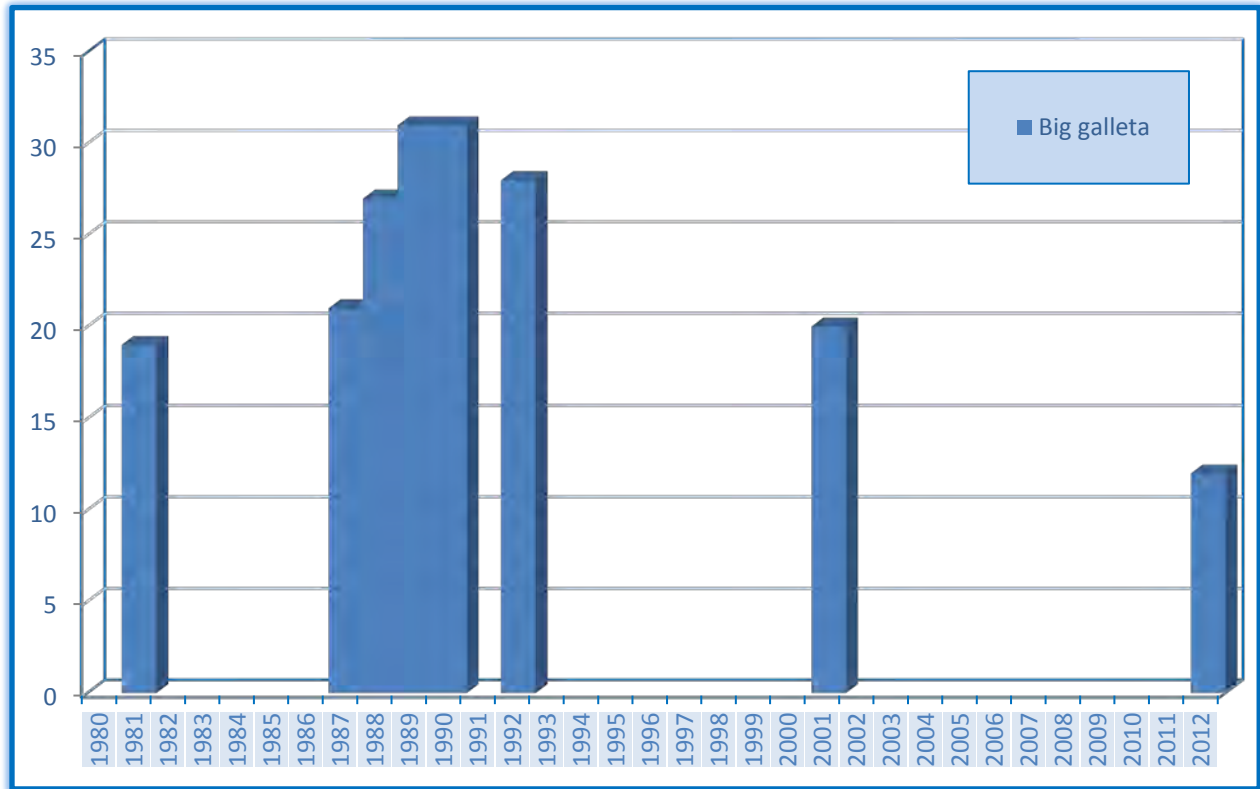
Perennial plant cover objective: 10-20%

Current perennial plant cover: 12%

Table 1. Key Area 1 Objectives and Current Data

Species	Composition Objective	Current Composition	Frequency Objective	Current Frequency	Trend
Big galleta	15-25%	36%	19-31%	12%	Down
Bush muhly	5-10%	0%	1-7%	0%	Static
Black grama	5-10%	0%	1-7%	0%	Static
Sand dropseed	0-2%	0%	0-5%	0%	Static
Threeawn	1-2%	0%	0-5%	0%	Static
Globemallow	1-5%	2%	1-7%	1%	Static

Figure 5. Key Area 1 Frequency Data



Key Area 3

Figure 6. Key Area 3



Standard 1:

On November 20, 2012, upland health was assessed at key area 3. 17 of the indicators were rated as “none to slight” departure from what is expected for the key area. Based on results of the indicators, this key area was determined to be **meeting Standard 1.**

Rationale: The indicator ratings were as would be expected for the ecological site. The soil and biotic communities are being maintained at this key area.

Standard 3:

Based on results of the data, as compared to objectives, this key area was determined to **not be meeting Standard 3.**

Rationale: The area is meeting perennial vegetative cover objective. Data in Table 2 show big galleta has maintained a static trend but is not meeting the composition objective. Bush muhly, black grama, and sand dropseed also have a static trend but should be more abundant at the area. Threawn and globemallow have a downward trend and should be more abundant.

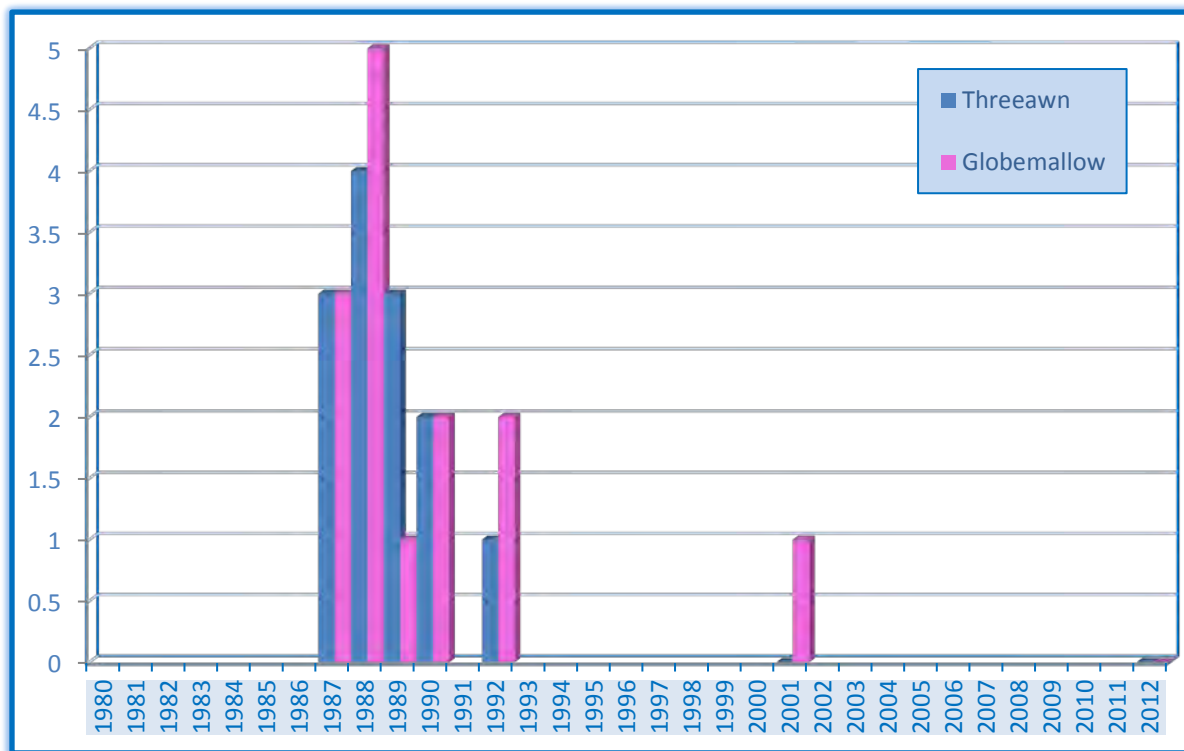
Perennial plant cover objective: 22-34%

Current perennial plant cover: 28%

Table 2. Key Area 3 Current Objectives and Data

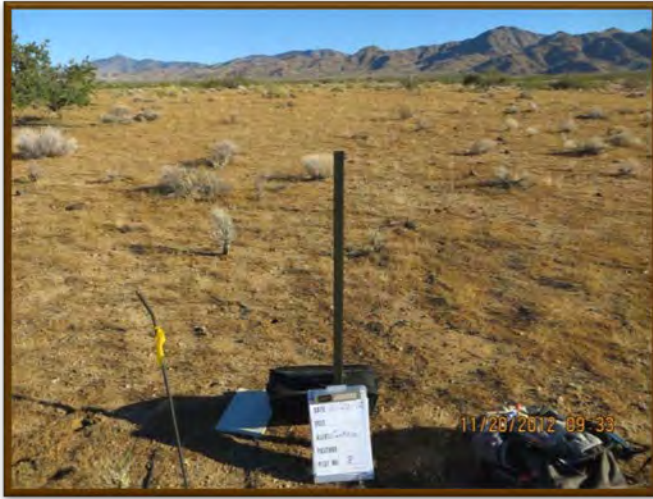
Species	Composition Objective	Current Composition	Frequency Objective	Current Frequency	Trend
Big galleta	15-25%	7%	9-19%	9%	Static
Bush muhly	5-10%	1%	1-5%	1%	Static
Black grama	5-10%	0%	1-5%	0%	Static
Threawn	1-5%	0%	1-7%	0%	Down
Sand dropseed	1-5%	0%	1-5%	0%	Static
Globemallow	1-5%	0%	2-8%	0%	Down

Figure 7. Key Area 3 Frequency Data



Key Area 8

Figure 8. Key Area 8



Standard 1:

On November 20, 2012, upland health was assessed at key area 8. 2 indicators (indicators 14 and 17) were rated as “slight to moderate” departure. Based on results of the indicators, this key area was determined to be **meeting Standard 1**.

Rationale: Indicator 14, which assesses litter amount, was given a slight to moderate departure rating because the litter amount was more than expected, likely due to above normal summer precipitation. Additional litter improves infiltration of precipitation and provides

greater protection to the soil from erosion.

Indicator 17, which assesses reproductive capability of perennial plants, was given a slight to moderate departure rating. Despite the above normal precipitation, overall, the perennial plants displayed poor vigor, resulting in a departure from normal for reproductive capability. Poor vigor is likely due to long-term drought. The soil and biotic communities are being maintained.

Standard 3:

Based on results of the data, as compared to objectives, this key area was determined to **not be meeting Standard 3**.

Rationale: The area is not meeting perennial vegetative cover objective. Data in Table 3 show big galleta and globemallow have declined and are not meeting frequency objectives. Globemallow is meeting its composition objective but the grasses are not.

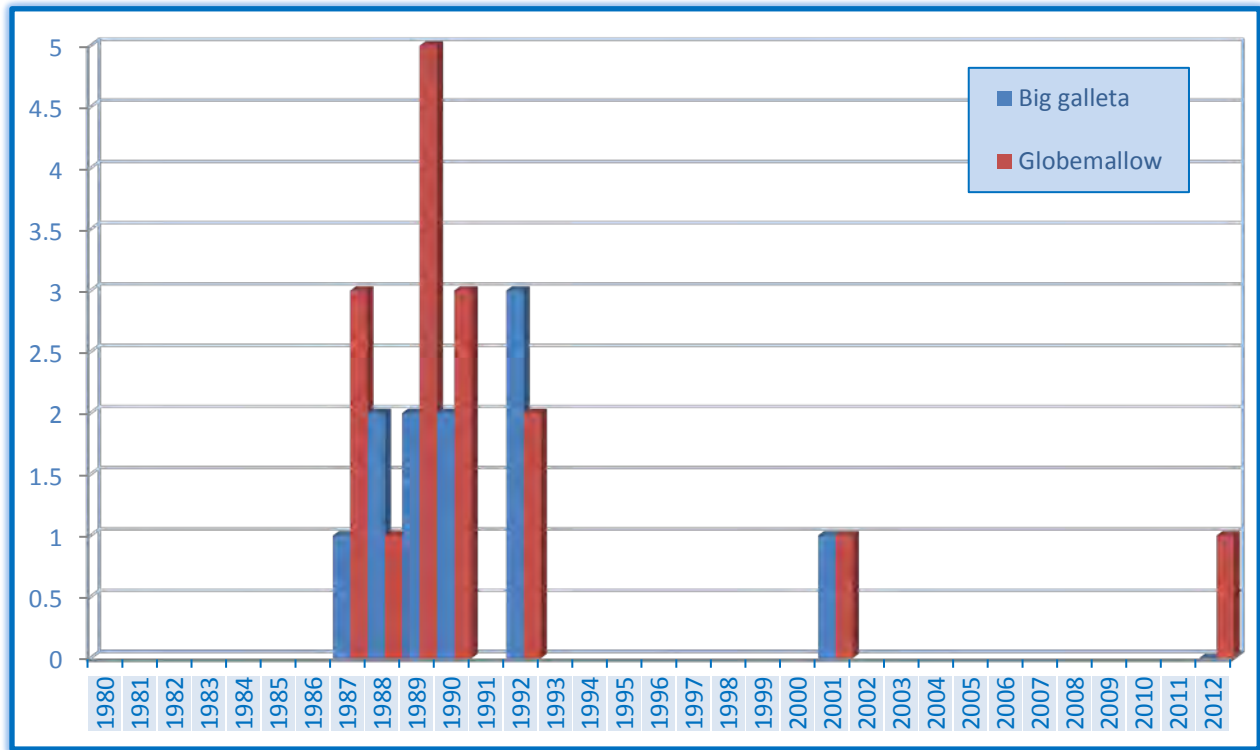
Perennial plant cover objective: 7-15%

Current perennial plant cover: 6%

Table 3. Key Area 8 Current Objectives and Data

Species	Composition Objective	Current Composition	Frequency Objective	Current Frequency	Trend
Big galleta	15-25%	0%	1-5%	0%	Down
Threawn	1-5%	0%	1-5%	0%	Static
Globemallow	1-5%	9%	2-8%	1%	Down

Figure 9. Key Area 8 Frequency Trend Data



CONCLUSIONS

By extrapolating the data from the three key areas out to the entire allotment we have determined that the Curtain Allotment is currently meeting Standard 1 but is not meeting Standard 3. Ecological functionality appears to be intact but there is a trend towards losing the herbaceous component of the plant community and having it replaced by woody shrubs. In accordance with BLM-IM-2012-124 all 3,250 acres of public land on this allotment would be placed into Category 2a. Public Land Not Achieving- Significant Factor is Undetermined.

NEXT STEPS

BLM will collaborate with stake holders, interested publics and other agencies to:

- ⇒ Determine the causal factors for not meeting Standard 3
- ⇒ Identify and analyze possible corrective actions under the National Environmental Policy Act
- ⇒ Take the appropriate corrective action to ensure that the Curtain allotment makes significant progress towards meeting Arizona's Standards for Rangeland Health.