

Rangeland Health Evaluation

Mt. Bruce Allotment #6259

June 2017

United States Department of the Interior
Bureau of Land Management
Tucson Field Office
Gila District Office



1 Introduction

The Rangeland Health Evaluation was conducted in accordance with the direction set forth in the Bureau of Land Management (BLM) Washington Office Instruction Memorandum No. 98-91 and BLM Arizona No. 99-012 for implementation of Standards for Rangeland Health and Guidelines for Grazing Administration. The purpose of the standards and guidelines is to provide a measure (standard) to determine land health, and methods (guidelines) to improve the health of the public rangelands. The standards are intended to help the Bureau, rangeland users and others focus on a common understanding of acceptable resource conditions. The guidelines provide a basis for working together to achieve that vision.

The Arizona State Director approved the Decision Record for implementation of Arizona Standards for Rangeland Health and Guidelines for Grazing Administration Environmental Assessment in April 1997. This decision became effective upon approval of the Arizona standards and guidelines by the Secretary of Interior in April 1997. The Decision Record allowed for full implementation of Arizona Standards for Rangeland Health and Guidelines for Grazing Administration in all Arizona BLM Land Use Plans.

Definition of Standards and Guidelines

Standards of rangeland health are expressions of levels of physical and biological conditions or degree of function required for healthy, sustainable rangelands and defines minimum resource conditions that must be achieved and maintained. Determination of rangeland health is based upon conformance with the standards. Application of the standard to the range site considers the potential of the site without regard for the types or levels of use or management actions or decisions.

Guidelines consider type and level of grazing use. Guidelines for grazing management are types of methods and practices determined to be appropriate to ensure the standards can be met or that significant progress can be made toward meeting the standard. Guidelines are tools that help managers and permittees/lessees achieve standards. Guidelines are specific to livestock grazing. Guidelines are best management practices such as grazing systems that could be used to achieve rangeland health standards.

Although the process of developing standards and guidelines applies to grazing administration, present rangeland health is the result of the interaction of many factors in addition to grazing livestock. Other contributing factors may include, but are not limited to, past land uses, land use restrictions, recreation, wildlife, rights-of-way, wild horses and burros, mining, fire, weather, and insects and disease (Arizona Standards for Rangeland Health and Guidelines for Grazing Administration, 1997).

With the commitment of BLM to ecosystem and interdisciplinary resource management, the standards for rangeland health as developed in this current process will be incorporated into management goals and objectives. The standards and guidelines for rangeland health for grazing administration, however, are not the only considerations in resolving resource issues (Arizona Standards for Rangeland Health and Guidelines for Grazing Administration, 1997).

1.1 Purpose of the Land Health Evaluation

The purpose of this land health evaluation is to gauge whether the Arizona Standards of Rangeland Health (Standards) are being achieved on the Mt. Bruce grazing allotment and to determine if livestock are the causal factor for either not achieving or not making significant progress towards achieving land health standards in the case of non-achievement of Standards. An evaluation is not a decision document, but a standalone report that clearly records the analysis and interpretation of the available inventory and monitoring data. As part of the land health assessment process Desired Plant Community (DPC) objectives were established for the Biological Resources within the allotment. The DPC objectives will assure that soil condition and ecosystem function described in Standards 1 and 2 are met.

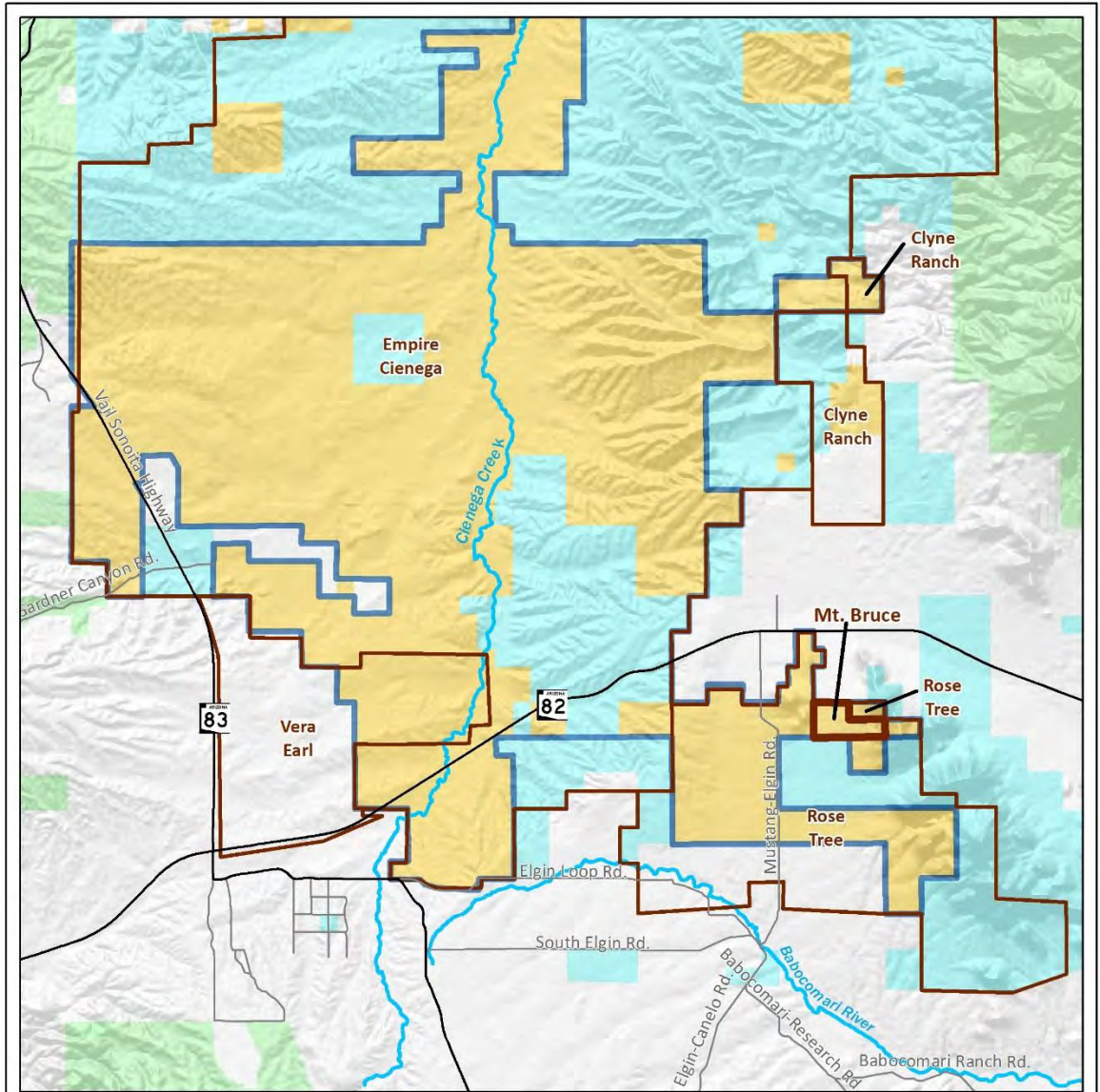
This evaluation seeks to ascertain: 1) if standards are being achieved, not achieved, and, in cases of not achieved, if significant progress is being made towards achievement of land health. 2) where it is ascertained that land health standards are not being achieved, determine whether livestock grazing is a significant factor causing that non-achievement.

2 Allotment Profile

2.1 Geographic Area

The Mt. Bruce Allotment is a BLM Section 15 allotment located in Santa Cruz County in Southeastern Arizona at the base of the Mustang Mountains. The terrain consists of gently rolling hills rising to mountainous terrain along the eastern border of the allotment. Elevation ranges from 5,000 to 6,000 feet.

2.1.1 Figure 1 Mount Bruce Allotment - General Location



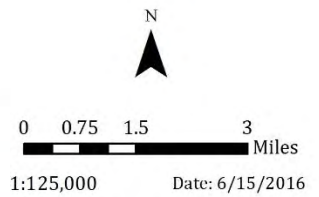
Mt. Bruce Allotment Vicinity



- BLM Grazing Allotments
- Las Cienegas NCA Boundary

Surface Management

- BLM
- Private
- State
- USFS



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2.2 Physical Description

2.2.1 Allotment acreages

Public Land	240 acres
State	0 acres
Private	540 acres
Total Acreage	780 acres

Rangeland Classification: Perennial X Ephemeral

Management Category: Improve Maintain X Custodial

2.2.2 Climate and Weather

Elgin, AZ weather averages

Annual high temperature	74.6°F
Annual low temperature	42.5°F
Average temperature	58.55°F
Average annual precipitation - rainfall	18.87 inch

Source: www.usclimatedata.com

2.2.3 Precipitation

Elgin, AZ temperature and precipitation averages

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Average high in °F	59	62	67	74	83	91	89	86	84	76	66	58
Average Low in °F	28	30	33	38	46	54	61	60	54	44	34	28
Average precipitation in inch	1.54	1.14	1.02	0.59	0.24	0.63	4.33	4.02	1.77	1.18	0.87	1.54

Source: www.usclimatedata.com

2.2.4 Water Quality

There is no Section 303d Water Quality Limited Stream Segment associated with the allotment. Water quality complies with State water quality standards. Based on current information, there are no other concerns about water or water quality that should be considered before lease issuance.

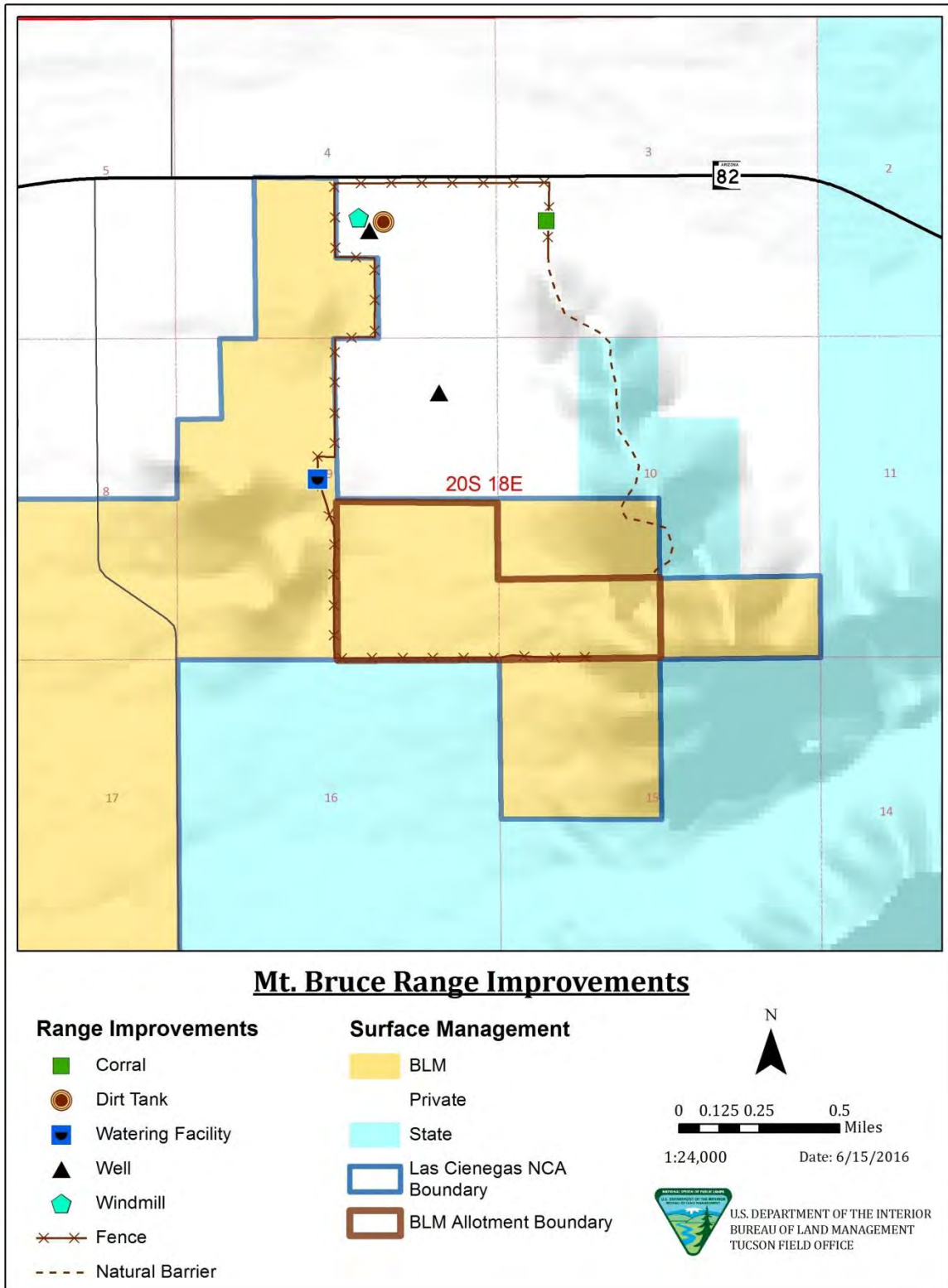
2.2.5 Watersheds

The Mt. Bruce allotment is located within the Babocomari Watershed.

2.2.6 Existing Range Improvements

The only range improvement on Public Land within the allotment is the boundary fence. All water developments are on private land. No vegetation treatments have occurred on Public Lands. The grazing lessee has been actively working with NRCS and has a grant through the Environmental Quality Improvement Program (EQIP) to remove mesquite and prickly pear cactus on his private land. The following map shows the range improvements.

2.2.7 Figure 2 Mount Bruce Range Improvements



2.3 Biological Resources

2.3.1 Major Land Resource Area Description

The Natural Resource Conservation Service (NRCS) characterizes land resource regions by particular patterns of soils, climate, water resources and land uses. These large regions are then grouped into Major Land Resource Areas (MLRAs). MLRAs are then broken down further into ecological sites, which are associated units of soil and vegetation with quantifiable characteristics. The BLM portion of the Mt. Bruce Allotment is located in the MLRA of 41-1 AZ Southern Arizona Basin and Range. The Common Resource Areas (CRA) on the ranch are the D41.1 Mexican-Oak-Pine Forest and Oak Savannahs and small portions of the D41.3 Semi Desert Grasslands.

2.3.2 Ecological Sites

The major Ecological sites within the Mt. Bruce allotment are; Limestone Hills 41-1, Limy Upland 41-1, Clay Loam Upland 41-1 and Loamy Upland 41-1. Other minor ecological sites such as Loamy Swales were also found within the allotment but were too small to delineate. These ecological sites were field verified by the NRCS as part of the Coordinated Resource Management Plan (CRMP) process for the Mount Bruce allotment. These Ecological Sites all receive 16 inches to 20 inches of precipitation per year and elevation ranges from 4,500 to 5,500 feet above mean sea level (AMSL). Ecological Site Guides were last updated in 2005 for this site.

Limestone Hills: Limestone Hills receive between 16 – 20 inches of precipitation yearly. Slopes are generally 15 to 70% and elevations of this site range between 4,500 and 5,500 feet. Common species associated with this site are; slim tridens, threawn, sideoats grama, tanglehead, ocotillo, guajilla, Palmer's agave and sotol.

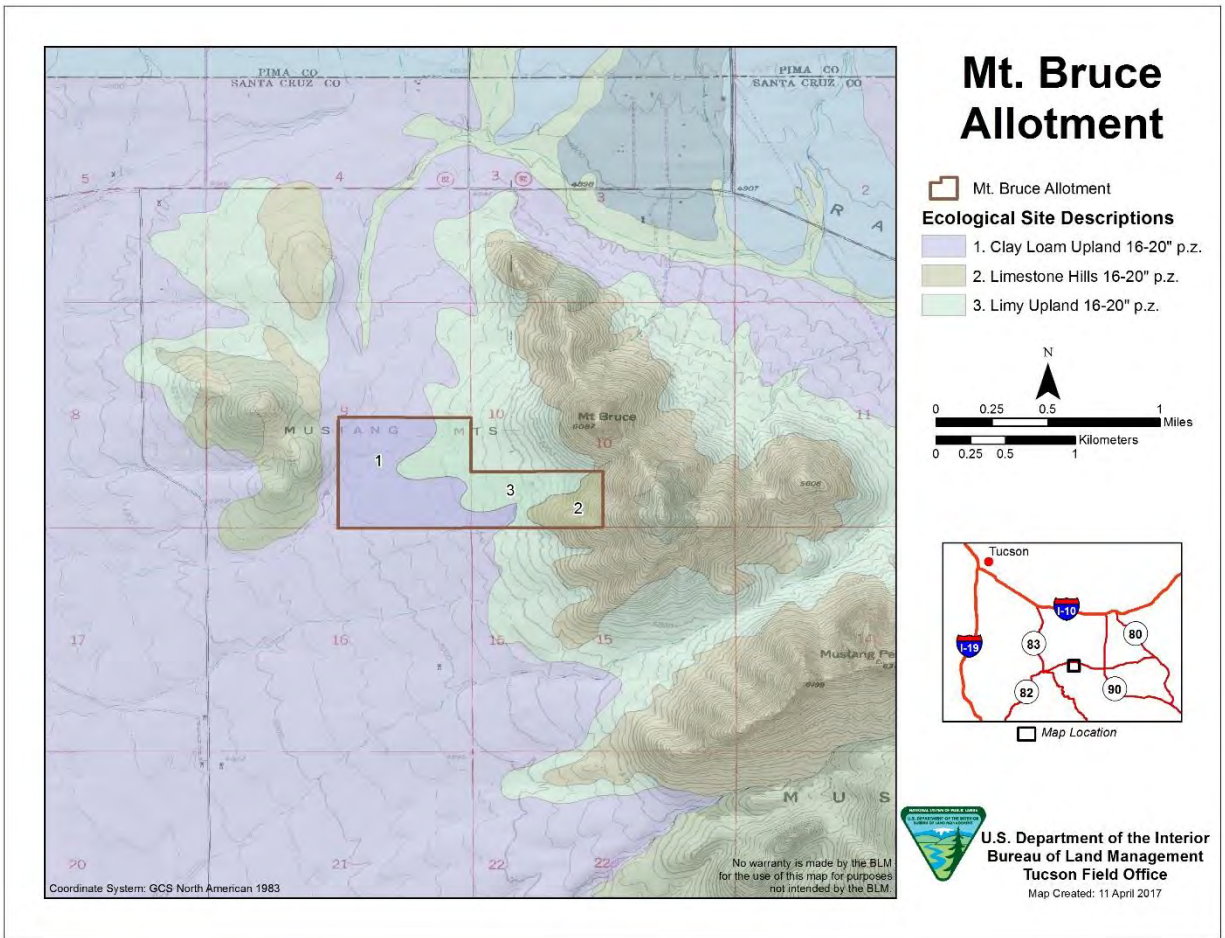
Limy Upland: The Limy Upland sites on the Mt. Bruce allotment are in the 16 – 206 inch precipitation range. Slopes range from 1 to 15% and elevations of this site range from 4,700 to 5,500 feet. Major perennial species on this site are; false mesquite, beargrass, sotol, sideoats grama, black grama, blue grama, wolftail and curly mesquite.

Clay Loam Upland: The Clay Loam Upland sites receive 16-20 inches of precipitation yearly. Slopes range from 1 to 15% with elevations that range from 4,500 to 5,500 feet. Major perennial species on this site are; blue grama, curly mesquite, cane beardgrass, plains lovegrass and false mesquite.

Loamy Upland: The Loamy Uplands ecological site receives about 16 – 20 inches of precipitation yearly. Slopes are gentle and usually between 1 and 15% with elevations ranging from 4,700 to 5,500 feet. Common perennial species on this site are; sideoats grama, blue grama, black grama, false mesquite and Palmer's agave.

NRCS provides Ecological Site Descriptions online at <https://esis.sc.egov.usda.gov/>.

2.3.3 Figure 3 Map of Ecological Sites on the Mount Bruce Allotment



2.3.4 Soils

The soil information for the Mt. Bruce grazing allotment was derived from the NRCS soil surveys.

Limestone Hills: These are shallow, calcareous soils formed on limestone bedrock, calcareous sedimentary and metamorphic rock. Parent material is high in carbonates. Soil surface textures range from cobbly loam to very gravelly sandy loam. Surface soil is dark colored and well protected by rocks, cobbles and gravels. Plant-soil moisture relationships are fair. Numerous areas of rock outcrop occur intermingled with soil areas. Bedrock is usually hard and unweathered.

Limy Upland: These soils have developed on calcareous alluvium or conglomerate and fanglomerate. They are shallow to lime cemented pans and are calcareous throughout. Soil surfaces range in texture from very cobbly sandy loam to very gravelly loam. The surface soil is dark colored. Soil surfaces are well protected by covers of rocks, cobbles, and/or gravels. Plant soil moisture relationships are poor to fair.

Clay Loam Upland: Clay loam upland soils are non-calcareous, moderately deep to deep, with an argillic horizon. Soil surfaces are sandy clay loam to clay loam. The argillic horizon generally occurs near the surface. The sub-surface clay horizon will exhibit some soil cracking when dry; however, these soils do not exhibit the vertic churning seen on the Clayey Upland Ecological Site (R041XA126AZ). Soil surfaces are dark colored and generally have formed from mixed fan alluvium of extrusive igneous origin. Plant-soil moisture relationships are good.

Loamy Upland: These are deep soils which have formed in old alluvium of mixed origin. Surface textures range from very gravelly sandy loam to gravelly loam. Sandy loam surfaces can be no thicker than 4 inches (eight inches for CBV-SL). These soils all have clayey (argillic) horizons near the surface. They are non calcareous in the upper 20 inches. Soil surfaces are dark colored. Plant-soil moisture relationships are good.

2.3.5 Vegetation Communities

Vegetation on the allotment is characteristic of Semi desert Grassland community. Vegetative cover is dominated by native grasses. Trees and shrubs present in the current plant community include mesquite (*Prosopis spp.*), desert broom (*Baccharis sarothroides*), little leaf sumac (*Rhus microphylla*), burweed (*Isocoma tenuisecta*), sandpaper bush (*Mortonia scabrella*), ocotillo (*Fouquieria splendens*), banana yucca (*Yucca baccata*), common sotol (*Dasyilirion wheeleri*) and beargrass (*Nolina microcarpa*). Half shrubs observed on the site include desert zinnia (*Zinnia acerosa*), fairy duster (*Calliandra eriophylla*), and yerba de pasmo (*Baccharis pteronioides*). Succulents present include prickly pear (*Opuntia engelmannii*), Palmer's century plant (*Agave palmeri*), staghorn cholla (*Opuntia versicolor*) and pincushion cactus (*Mammillaria microcarpa*). Perennial forbs include spiderling (*Boerhaavia spp.*), bundleflower (*Desmanthus cooleyi*), hog potato (*Hoffmannseggia glauca*), globemallow (*Sphaeralcea spp.*) and bluedicks (*Dichelostemma capitatum*). Native perennial grasses observed include sideoats grama (*Bouteloua curtipendula*), black grama (*Bouteloua eriopoda*), sprucetop grama (*Bouteloua chondrosioides*), hairy grama (*Bouteloua hirsute*), Cane beardgrass (*Bothriochloa barbinodis*), blue grama (*Bouteloua gracilis*), Slim tridens (*Tridens muticus*), vine mesquite (*Panicum obtusum*), fluffgrass (*Tridens pulchellum*), Hall's panic (*Panicum hallii*) and perennial three-awn (*Aristida spp.*). Introduced Lehmann lovegrass (*Eragrostis lehmanniana*) is invading the eastern portion of the allotment.

2.3.6 General Wildlife Resources

The allotment contains a diverse population of wildlife. Wildlife species known to occur in the area are pronghorn antelope, white-tail deer, javelina, coyotes, various reptiles, rodents, raptors, dove, scaled quail and numerous smaller birds. The allotment is open grasslands making it good pronghorn habitat. Pronghorn are occasionally observed on this allotment.

2.3.7 Special Status Species and Threatened and Endangered Species

2.3.8 Jaguar (*Panthera onca*):

All allotments south of Interstate 10 have been recognized as potential jaguar habitat. It is our goal to maintain movement corridors through allotments by sustaining vegetation within washes. Jaguar habitat is described as dense, low vegetation (mesquite, salt cedar, cottonwood, willow, etc.) in major riparian or

xero-riparian corridors. The jaguar was considered in the October 2002 Las Cienegas Grazing Biological Opinion (BO) (#2-21-02-F-162) and it states that “no jaguar have been recorded in the area and they are unlikely to occur and suitable dispersal habitat may be present, but habitat for resident jaguar is minimal at best”. Recent monitoring work has revealed jaguars in the Atascosa and Baboquivari Ranges to the west of the allotments within Las Cienegas National Conservation Area (LCNCA).

2.3.9 Lesser long-nosed bat (LLNB) (*Leptonycteris curasoae*):

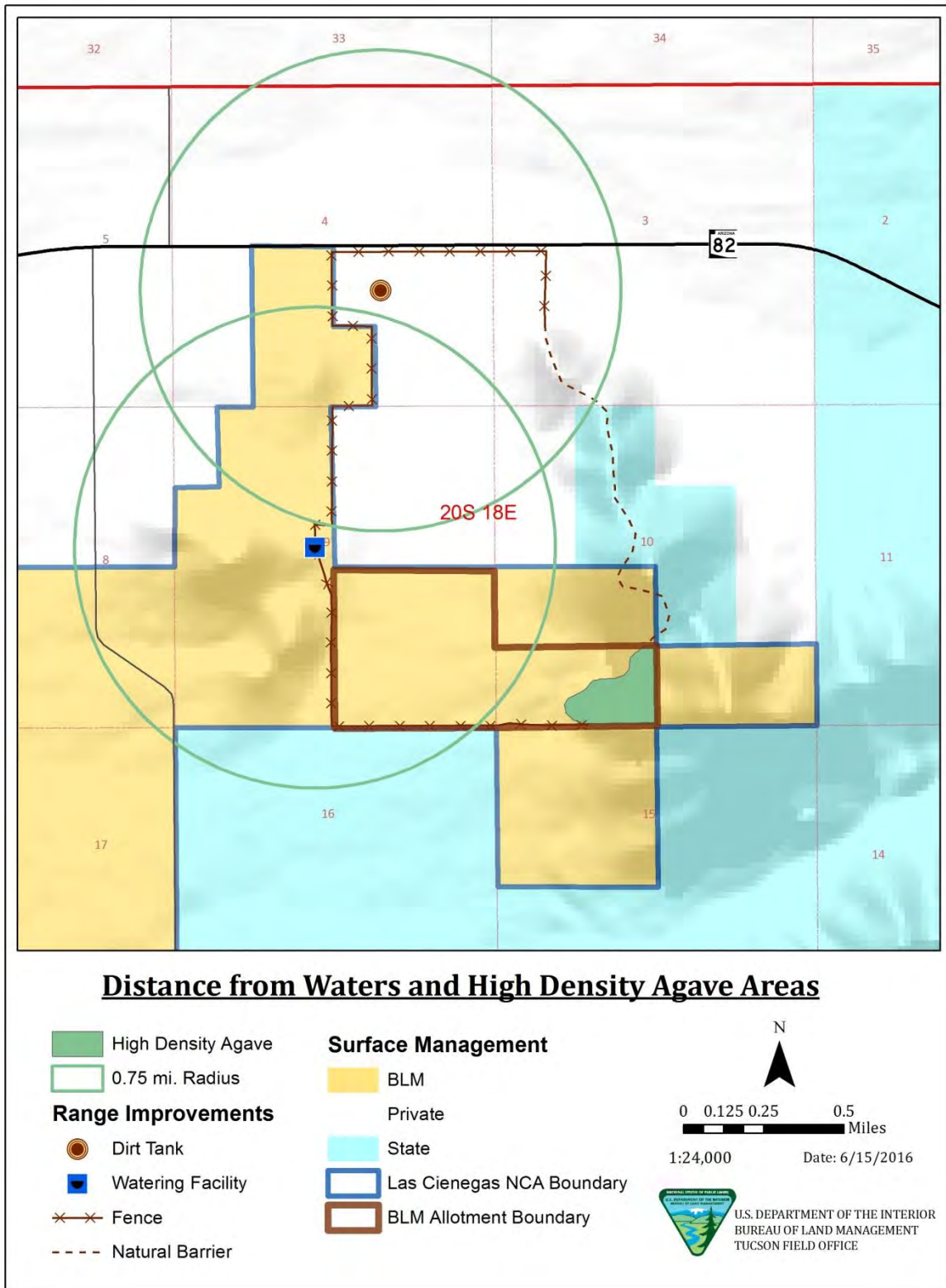
The LLNB was identified as the only T&E species on the allotment. The LLNB is a medium-size nectar, pollen and fruit eating bat that migrates seasonally from Mexico to southern Arizona and southwestern New Mexico. By late September they vacate Arizona and move into Mexico. These bats feed primarily on the fruits of columnar cacti and paniculate agave. The paniculate agaves which are the primary food source for migrating LLNB in the late summer and early fall occur within the Mt. Bruce allotment. This species was listed as endangered in 1998 but no critical habitat for this species has been designated to date.

The lesser long-nosed bat was considered under the 2002 Las Cienegas BO (#2-21-02-F-162) for livestock grazing as well as other multiple-use actions, such as recreation. Incidental Take and Extent of Take conditions were established for the LLNB in the Las Cienegas BO. The incidental take statement from the biological opinion states that “The level of take anticipated in the form of harm could be detected either by finding bats taken as a result of grazing, burning, or recreation program, or if the following surrogate condition is met: 1. Flowering agave densities within core-use areas decline below the natural variability of the species (0.2-5.4 flowering plants/ha).”

Non-discretionary Terms and Conditions for the LLNB reflect the need to monitor the species and the habitat (flowering agaves) to assure that Take is not exceeded. In addition, no critical habitat has been designated, thus, no critical habitat would be affected. However, prior to construction of range improvement projects, pre-construction surveys shall be conducted for paniculate agaves that may be directly affected by construction activities, and if appropriate, mitigation measures established.

The following map shows the high density agave areas as well as waters found including a 0.75 mile buffer. It is known that LLNB travel 0.75 miles from waters to forage on the Palmer’s Agave stalks.

2.3.10 Figure 3 Mount Bruce Distance from Waters and High Density Agave Areas



2.3.11 Table 1 Santa Cruz County Threatened and Endangered Species List

The Bureau has reviewed the US Fish and Wildlife Service County List for Santa Cruz County.

Common Name	Scientific Name	Listing Status	Effect Determination
Canelo Hills ladies' tresses	<i>Spiranthes delitescens</i>	E	No effect, suitable habitat greater than 10 miles away
Chiricahua leopard frog	<i>Lithobates [Rana] chiricahuensis</i>	T	No effect, suitable habitat greater than 10 miles away
Desert pupfish	<i>Cyprinodon macularius</i>	E	No effect, suitable habitat greater than 10 miles away
Gila Chub	<i>Gila intermedia</i>	E	No effect, suitable habitat greater than 10 miles away
Gila topminnow	<i>Poeciliopsis occidentalis occidentalis</i>	E	No effect, suitable habitat greater than 10 miles away
Huachuca water umbel	<i>Lilaeopsis schaffneriana</i> ssp. <i>Recurva</i>	E	No effect, suitable habitat greater than 10 miles away
Jaguar	<i>Panthera onca</i>	E	No effect, suitable habitat greater than 10 miles away
Lesser long-nosed bat	<i>Leptonycteris curasoae yerbabuena</i>	E	May affect, not likely to adversely affect. Effects were analyzed in consultation with USFWS (#2-21-02-F-162). Agave resource present on allotment but encompasses minor percentage of agaves in area. BLM agave monitoring put in place in 2010 will continue as prescribed in Las Cienegas BO.
Mexican spotted owl	<i>Strix occidentalis lucida</i>	T	No effect, suitable habitat greater than 10 miles away
Ocelot	<i>Leopardus (=Felis) pardalis</i>	E	No effect, suitable habitat greater than 10 miles away
Pima Pineapple cactus	<i>Coryphantha scheeri</i> var. <i>robustispina</i>	E	No effect, suitable habitat greater than 10 miles away

Sonora chub	<i>Gila ditaenia</i>	T	No effect, suitable habitat greater than 10 miles away
Sonoran tiger salamander	<i>Ambystoma</i>	E	No effect, suitable habitat greater than 10 miles away
Southwestern willow flycatcher	<i>Empidonax traillii extimus</i>	E	No effect, suitable habitat greater than 10 miles away
Arizona Treefrog	<i>Hyla wrightorum</i>	C	No effect, suitable habitat greater than 10 miles away
Huachuca springsnail	<i>Pyrgulopsis thompsoni</i>	C	No effect, suitable habitat greater than 10 miles away
Northern Mexican Gartersnake	<i>Thamnophis eques megalops</i>	C	No effect, suitable habitat greater than 10 miles away
Stephan's riffle beetle	<i>Heterelmis stephani</i>	C	No effect, suitable habitat greater than 10 miles away
Yellow-billed cuckoo	<i>Coccyzus americanus</i>	C	No effect, no riparian found within allotment
American peregrine falcon	<i>Falco peregrinus anatum</i>	DM	No effect

E – Endangered

T – Threatened

PE – Proposed Endangered

C – Candidate

EXPN – Experimental Population, Non-Essential

DM – Delisted Taxon, Recovered, Being Monitored

SAT – Similarity of Appearance to a Similar Taxon

DR – Delisted Taxon, Taxonomic Revision

Reference: <http://www.fws.gov/southwest/es/arizona/>

2.4 Special Management Areas

The LCNCA and the SVAPD were designated by Congress and signed into law by the President on December 6, 2000, in order to conserve, protect, and enhance the unique and nationally important aquatic, wildlife, vegetative, archaeological, paleontological, scientific, cave, cultural, historical, recreational, educational, scenic, rangeland and riparian resources and values of the public lands within the NCA, while allowing livestock grazing and recreation to continue in appropriate areas.

The Mt. Bruce Allotment is included in the LCNCA and the Empire-Cienega Area of Critical Environmental Concern (ACEC) because the approved Las Cienegas Resource Management Plan (RMP) and Record of Decision (ROD) signed July 25, 2003, established that any parcels that lie within the acquisition planning district become part of the LCNCA upon acquisition. Therefore, the Mt. Bruce allotment is managed according to the Las Cienegas RMP.

2.4.1 Table 2 Special Areas or Designations that Occur Within Mount Bruce

	Yes	Name	Date Established	No
Wild & Scenic Rivers				X
Wilderness				X
Unique Waters				X
ACECs	X	Empire-Cienega ACEC	2003	
Other	X	Las Cienegas NCA	2000	

2.5 Recreational Resources

There are no developed recreation sites on the allotment. Wilderness inventory was conducted between 1978 and 1980. No lands were found to contain wilderness character. Recreation use is very minimal from the public, only including some bird hunting.

2.6 Heritage Resources & the Human Environment

The BLM's evaluation of rangeland health standards includes considerations for the protection of cultural resources—such as prehistoric and historic-age sites, buildings, and structures—and plants that may be of traditional and/or cultural significance to Native Americans. Should impacts to sites or traditional-use plants be identified, revised lease terms and conditions may be warranted and/or rangeland management directives could be modified to achieve desired resource conditions. The following sections describe BLMTFO's assessment efforts regarding applicable heritage resources management and compliance criteria.

2.6.1 Cultural Resources

The BLM's authorization of grazing permits and leases is considered an undertaking subject to compliance with Section 106 of the National Historic Preservation Act (NHPA; 54 U.S.C. 306108 et seq.). The BLM has the legal responsibility to consider the effects of its actions on *historic properties* located on public lands. BLM Manual 8100 Series and the Arizona BLM Protocol (the Statewide Protocol) provide Section 106 compliance requirements to meet appropriate cultural resources management standards. Additionally, cultural resources evaluations for proposed grazing permits and leases generally follow the procedures and guidance provided in BLM Instructional Memoranda IM-WO-99-039, IM-CO-99-007, IM-CO-99-019, and IM-CO-2002-29.

Section 106 of NHPA requires federal agencies to 1) identify historic properties within Areas of Potential Effects (APEs) for a federal undertaking, 2) evaluate the significance of cultural resources by determining National Register of Historic Places (NRHP) eligibility, and 3) consult with applicable federal, state, and tribal entities regarding assessment results, NRHP eligibility determinations, and proposed methods to avoid or mitigate potential impacts to historic properties. In Arizona, the BLM's NHPA responsibilities are carried out in accordance with the Statewide Protocol—a Programmatic Agreement (PA) among the BLM and the Arizona State Historic Preservation Officer (SHPO; executed December 14, 2014). Should a routine undertaking be determined to have “no historic properties affected” or “no adverse effect” by a qualified BLM archaeologist, the undertaking may proceed under the terms and conditions of the Statewide Protocol. If the undertaking is determined to have “adverse effects,” or otherwise meets the stipulated consultation thresholds, project-specific consultation is then initiated with the SHPO.

A small number of controlled studies have been performed to examine potential grazing impacts on historic properties (c.f., Osborn and Hartley 1991, Osborn et al. 1987, Roney 1977, and Van Vuren 1982). For example, Alan Osborn and his colleagues examined the effects of domestic livestock grazing on the archaeological resources of Capitol Reef National Park in southern Utah. The study included reconnaissance and observations at recorded sites, and the creation of experimental and control plots containing several types of newly manufactured lithic and ceramic artifacts that were measured, weighed, placed, and mapped. Several study plots were located close to water sources. The study plots and artifacts were reexamined after six months of grazing use. Osborn found that 93 percent of the artifacts remained intact, and 84 percent remained visible. Pottery fragments were more prone to breakage. Mapping revealed that 23 percent of artifacts were displaced, but that 75 percent of the displaced artifacts had moved less than 15 centimeters.

The results varied by study plot location with the greatest impacts recorded near water sources, which received higher concentrations of livestock use. Osborn and Hartley (1991) concluded that “the degree of effect is a direct reflection of grazing intensity and dependence on limited water sources in this cold desert environment.” This conclusion is also reflected in a study that examined lithic artifact breakage in areas of variable livestock use along the Central Arizona Project aqueduct in the western Arizona desert (Brown and Stone 1982) where collections of lithic artifacts from six archaeological sites were found to exhibit breakage rates between 13 and 17 percent. In comparison, 52 percent of the artifacts from a seventh site located near a cattle-accessed reservoir were found broken. In sum, these studies have demonstrated that grazing impacts to cultural resources are primarily of concern in areas of concentrated livestock use such as around water sources and corrals.

Direct impacts to historic properties where livestock concentrate may include trampling, chiseling, and churning of site soils, cultural features and artifacts, artifact breakage, and impacts from standing, leaning, or rubbing against historic structures, above-ground cultural features and/or rock art (Broadhead 2001; Osborn et al. 1987). Indirect impacts from livestock concentrations may include accelerated soil erosion and gullying, in addition to increased potential for unlawful artifact collection and/or vandalism of cultural resources. Other indirect impacts may include degradation of the historic setting, thereby detracting from the view-shed and historic feeling of nearby cultural resource sites. However, cultural resources are constantly subject to site formation processes or events after creation (Binford 1981; Schiffer 1987). These processes can be both cultural and natural, and may occur instantly or over thousands of years. Cultural formation processes include activities directly or indirectly caused by

humans. Natural processes include chemical, physical, and biological processes of the natural environment that impinge upon and/or modify cultural materials. Determining the cause of impacts to historic properties may be difficult, in some cases, because activities such as camping and off-highway vehicle use may also result in the same kinds of effects as described above.

A BLMTFO archaeologist completed a comprehensive Class 1 (existing information) cultural resources assessment of the Mount Bruce allotment between November 16 and 28, 2016. Data reviewed were obtained from BLMTFO cultural program project files, site reports, and atlases, in addition to BLM-maintained General Land Office (GLO) plats and patent records. Electronic files also were reviewed using online cultural resource databases including *AZSite*, Arizona's statewide cultural resource inventory system (administered by the Arizona State Museum), and the *National Register of Historic Places Focus Database & NPGallery Digital Asset Search* (maintained by the National Park Service). Archival information was compared with livestock grazing and range improvement data to determine the potential for resource conflicts, particularly in livestock concentration areas such as around water sources, at chutes/corrals, and near supplemental feeding locations. The results of archival research are summarized as follows; data provided are applicable to BLM administered lands within the subject allotment (i.e., the jurisdictional APE) and based on currently available information from the aforementioned sources.

Background research identified no prior cultural resources inventories and no documented features or cultural sites on the 240 acres of BLM administered lands within the Mount Bruce allotment. A historic-age GLO plat map (dated 1907; plat no. 2385) depicts an unnamed road alignment crossing through the center of Section 9 that roughly corresponds to a current allotment fence line; however, no other features are shown within the subject allotment.

Statement of Effect Determination

As a result of this cultural resources assessment, no historic properties or areas likely to contain historic properties were identified *that also would coincide with areas of potential impacts from concentrated livestock use on the BLM administered portion of the Mount Bruce allotment*. A light-to-moderate level of dispersed livestock use is proposed under the current lease terms, with no identified concentrated use-areas on the BLM administered portion of the Mount Bruce allotment. Additionally, no new range improvement projects are currently proposed as a component of land-health evaluation or lease renewal.

As a routine undertaking with limited potential impacts and no identified historic properties within the BLM administered portion of the allotment, lease issuance for continued livestock use of the Mount Bruce allotment under the existing use-terms is appropriate under a finding of "no adverse effect," with the following Conditions of Approval (COAs) applied as lease stipulations. Any subsequent cultural resources inventory should focus on identified areas of livestock concentration within the BLM administered portion of the allotment, as appropriate. Proposed range improvements would be subject to individual project review and assessment for compliance with Section 106 and the Statewide Protocol. If, as a result of any new assessment or monitoring, historic properties are identified and found to exhibit potential for or actively occurring grazing impacts, mitigation measures would be developed in coordination with the SHPO and any other applicable consulting parties.

Cultural Resources Stipulations / Standard Conditions of Approval (COAs)

The operator is responsible for informing all persons who are associated with the allotment operations that they will be subject to prosecution for knowingly disturbing historic or archaeological sites, or for collecting artifacts. Any cultural (historic/prehistoric site or object) or paleontological resource (fossil remains of plants or animals) discovered during operations shall be immediately reported to the Authorized Officer (AO) or his/her designee. All operations in the immediate area of the discovery shall be suspended until written authorization to proceed is issued. An evaluation of the discovery shall be made by a qualified archaeologist or paleontologist to determine appropriate actions to prevent the loss of significant cultural or scientifically important values.

If in connection with this work any human remains, funerary objects, sacred objects or objects of cultural patrimony as defined in the Native American Graves Protection and Repatriation Act (P.L. 101-601; 104 Stat. 3048; 25 U.S.C. 3001) are discovered, operations in the immediate area of the discovery shall cease, the remains and objects shall be protected, and the operator shall immediately notify the BLMTFO. The immediate area of the discovery shall be protected until notified by the BLMTFO Manager that operations may resume.

2.6.2. Native American Concerns

Native American religious concerns are legislatively considered under several acts and Executive Orders including the American Indian Religious Freedom Act (AIRFA; 42 U.S.C. 1996), the Native American Graves Protection and Repatriation Act (NAGPRA; 25 U.S.C. 3001), and Executive Order 13007 (Indian Sacred Sites). In sum, and in concert with other provisions such as those found in the NHPA and Archaeological Resources Protection Act (ARPA; 16 U.S.C. 470aa-470mm), these acts and orders require the federal government to carefully and proactively consider the traditional and religious values of Native American culture and lifeways to ensure, to the greatest degree possible, that access to sacred sites, treatment of human remains, the possession of sacred items, conduct of traditional religious practices, and the preservation of important cultural properties are not unduly infringed upon. In some cases, these concerns are directly related to *historic properties* and/or archaeological resources, such as those considered under Section 106 of the NHPA. Likewise, elements of the landscape without archaeological or human material remains also may be involved.

The BLMTFO initiated government-to-government consultation with five Native American tribes who claim cultural affiliation to and/or traditional use of the area by sending letters summarizing the results of the Class 1 cultural resources assessment and rangeland monitoring data for the Mount Bruce allotment. Tribes consulted include the Hopi Tribe, Pascua Yaqui Tribe, Tohono O'odham Nation, San Carlos Apache Tribe, and the White Mountain Apache Tribe. Plant species with potential cultural significance are noted to occur within the subject allotment including bluedicks (*Dichelostemma capitatum*), sedge (*Carex spp.*), white sagebrush (*Artemisia ludoviciana*), and beargrass (*Nolina microcarpa*; *USDA-NRCS Culturally Significant Plants Database*).

Currently, there are no known adverse impacts to any culturally significant plants, items, sites (see prior Cultural Resources section), or landscapes. Additionally, because lease issuance does not include

authorization for new construction, ground disturbance, or the direct sale/exchange of federally managed lands, the undertaking will not prevent access to any known sacred sites, prevent the possession of sacred objects, or otherwise interfere with the performance of traditional ceremonies and/or rituals.

If new information is provided by consulting tribes, additional or edited terms and conditions of land-use and/or mitigation may be required to protect or restore resource values. Future assessment and/or consultations would occur during BLMTFO’s review of any additional proposed actions within the subject allotment such as range improvement projects. Should the BLMTFO identify adverse impacts, additional consultations regarding potentially significant sites and possible protection or mitigation strategies would be warranted.

3 Grazing Management

The BLM acreage of the allotment supports a 7 cow-calf yearlong operation. The management of the allotment revolves around 2 pastures, one private land pasture off site (Cornwall pasture), thus allowing for a rest rotation system allowing plant reproduction and growth.

3.1 Grazing History

The public lands on the Mount Bruce allotment were acquired by the Bureau of Land Management (BLM) in a land exchange with Phelps Dodge in 2004. Prior to the acquisition into federal ownership, the land had been leased for grazing yearlong. The acreage was brought into federal ownership with acknowledgement of the prior grazing use and the land was temporarily leased to the existing rancher by BLM at the same rate of cattle for yearlong grazing. The lessee had an existing lease with Phelps-Dodge that was issued in 1999 and was for a period of up to 15 years (5 years term and annually for another 10 years). The lessee was grazing cattle on the Mount Bruce allotment under this existing lease with Phelps Dodge until 2014. The lease authorized 72 AUMs (6 cattle yearlong). Since 2014, the lessee has grazed on the private portion of the Home Pasture, using herding techniques to keep the livestock off of the BLM portion.

3.2 Grazing System

The grazing management on the Mt. Bruce allotment is a basic rest-rotation grazing system which includes the use of the BLM land and numerous leases and holdings within the Sonoita Valley. The 240 BLM acres are used as a pasture and the cattle are rotated from the BLM to other private leases in Sonoita that act as pastures creating the ability for the grasslands to rest and recover.

3.2 Mandatory Terms and Conditions for Permitted Use.

Allotment	Livestock Number	Kind	Grazing Period	AUMs	%Public Land
Mount Bruce	7	Cattle	03/01 – 02/28	84	100

Other Terms and Conditions:

1. If in connection with allotment operations under this authorization, any human remains, funerary objects, sacred objects or objects of cultural patrimony as defined in the Native American Graves Protection and Repatriation Act (P.L. 101-601; 104 Stat. 3048; 25 U.S.C. 3001) are discovered, the lessee shall stop operations in the immediate area of the discovery, protect the remains and objects, and immediately notify the Authorized Officer of the discovery. The lessee shall continue to protect the immediate area of the discovery until notified by the Authorized Officer that operations may resume.
2. A use limit of 30-40% of current year's average annual production is in effect, to be measured on key forage species at permanent vegetation transects. The use limit will ensure the physiological needs of the plants and multiple use objectives are being met. (CFR 43 4130.3-2).
3. Actual use information will be submitted within 15 days of the end of the grazing year in accordance with 43 CFR 4130.3-2(d). Actual use reports will identify the amount of livestock use and period of use for each water source/pasture.

See Attachment for Standard Terms and Conditions

4 Objectives

4.1 Planning and Environmental Documents

The Taylor Grazing Act of 1934 provides for two types of authorized use: (1) A *grazing permit*, which is a document authorizing use of the public lands within an established grazing district, and are administered in accordance with Section 3 of the Taylor Grazing Act; and (2) a *grazing lease*, which is a document authorizing use of the public lands outside an established grazing district, and are administered in accordance with Section 15 of the Taylor Grazing Act. All grazing allotments within the Tucson Field Office are outside an established grazing district and therefore are Section 15 grazing leases.

The BLM is responsible for establishing the appropriate levels and management strategies for livestock grazing in this allotment. Grazing permits and leases issued must be in compliance with the multiple use and sustained yield concepts of FLPMA and the Fundamentals of Rangeland Health (43 CFR 4180), and be in accordance with the Guidelines for Grazing Administration while continuing to achieve Arizona Standards for Rangeland Health.

Land Health Standards:

On April 28, 1997, the Secretary of Interior approved the implementation of the Arizona Standards for Rangeland Health and Guidelines for Grazing Administration for all Land Use Plans in Arizona. The purpose of the Standards and Guidelines is to maintain or improve the health of the public rangelands. Standards and guidelines are intended to help the Bureau, rangeland users and others focus on a common understanding of acceptable resource conditions and work together to achieve that vision. Standards and Guidelines were incorporated into Las Cienegas Resource Management Plan (RMP) in 2003.

As defined by the Arizona Resource Advisory Council, “Standards” are goals for the desired condition of the biological and physical components and characteristics of rangelands. “Guidelines” are management approaches, methods, and practices that are intended to achieve a standard. Guidelines are developed and applied consistent with the desired condition and within the site’s capability and specific public land uses, and may be adjusted over time. Arizona S&Gs are defined as the following:

Standard 1 - Upland Sites

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

Standard 2 - Riparian - Wetland Site

Riparian-wetland areas are in proper functioning condition.

Standard 3 - Desired Resource Conditions

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

Land Use Planning /Resource Management Plan Objectives:

Las Cienegas Resource Management Plan (2003)

As outlined in the section “General Livestock Management Strategies” of the Las Cienegas Resource Management Plan and Record of Decision dated July 2003, (page 55), the Mt. Bruce will also follow the following management strategies:

1. Continue flexible livestock rotation under selective rest-rotation strategy. Within the forage allocation (permitted use), authorized use will be varied annually based on an assessment of range conditions, including forage availability and biological monitoring through the biological planning process. Forage temporarily available above the forage allocation may be apportioned on a non-renewable basis. Changes in permitted use will be based on inventory and monitoring data.
2. Utilization will be limited to 30-40% of current year’s growth on key perennial grasses to ensure progress towards meeting land health standards and multiple use objectives.
3. Pronghorn: Open grasslands and in draws in the semidesert grassland and oak savannah vegetation communities (e.g., loamy bottom swales, loamy hills, and limy slopes ecological sites) provide the following habitat components for pronghorn fawning at key monitoring sites (WF03) (ppgs 10-11):
 - Maintaining vegetation cover 10-18 inches high during the fawning season from the beginning of April through June each year in key fawning areas.
 - Maintaining the presence of five or more species of grasses and shrubs in the vegetation communities.
 - Limiting trees to no more than 5% of the total cover.

4. Grassland sparrows: Ensure adequate cover for grassland sparrows as defined in the grassland sparrow sub-objective (Upland Wildlife Habitat Sub-Objective A). (GM44) (p.38)
 - To meet Upland Wildlife Habitat Sub-Objective A for grassland sparrow habitat, implement vegetation treatments including prescribed fire and other upland restoration actions to reduce shrub canopy and enhance grass species diversity and cover, as described in the watershed management actions section. (WF29) (p.38)

A land use plan conformance review and appropriate level of NEPA will be completed prior to offering a 10-year lease.

Activity Level Plan Objectives:

In a cooperative effort with BLM, the NRCS and the lessee, a Coordinated Resource Management Plan (CRMP) has been written and signed.

4.2 Allotment specific Objectives

4.1.1 Table 3 Summary results from Rangeland Health Evaluation: Site #1 Limy Upland 41-1 on June 4, 2009

Rangeland Health Attribute	Departure From Ecological Site Description				
	Extreme	Moderate to Extreme	Moderate	Slight to Moderate	None to Slight
Soil/Site Stability					10
Hydrologic Function				1	9
Biotic Integrity			1	1	7

Site #1 - Photo taken June 4, 2009 on the Mt. Bruce allotment



4.1.2 Table 4 Summary results from Rangeland Health Evaluation: Site #2 Loamy Upland 41-1 on June 4, 2009

Rangeland Health Attribute	Departure From Ecological Site Description				
	Extreme	Moderate to Extreme	Moderate	Slight to Moderate	None to Slight
Soil/Site Stability					10
Hydrologic Function					10
Biotic Integrity			1	1	7

Site #2 - Photo taken June 4, 2009 on the Mt. Bruce allotment



4.1.3 Table 5 Summary results from Rangeland Health Evaluation: Site #1 Loamy Upland 41-1 on July 24, 2013

Rangeland Health Attribute	Departure From Ecological Site Description				
	Extreme	Moderate to Extreme	Moderate	Slight to Moderate	None to Slight
Soil/Site Stability				1	9
Hydrologic Function				2	8
Biotic Integrity				2	7

Site #1 - Photo taken July 24, 2013 on the Mt. Bruce allotment



4.3 Key Area Objectives

Specific Key Area objectives step down from the Desired Future Condition objectives found in the Las Cienegas RMP (2003). These Key Area specific objectives are designed to assess Public Land conformance to the Arizona Standards for Rangeland Health on the Mt. Bruce allotment.

There are five active Key Areas on the Mt. Bruce allotment.

4.1.4 Table 6 Land Status, Key Area and Correlating Ecological Site.

Key Areas	Ownership	Ecological Site
KA 1	Private	Loamy Swale
KA 2	Private	Clay Loam Upland
MB-1	BLM	Clay Loam Upland
Key Area 6 (agave)	BLM	Limy Upland
Key Area 7A (agave)	BLM	Clay Loam Upland

Key Area MB-1: Clay Loam Upland Ecological site:

- Maintain ground cover to prevent erosion by having less than 25% bare ground
- Maintain key perennial grass (Black grama, Bush muhly) composition by reserving at least 50% native key perennial grass species

Key Area 6 (agave): Limy Upland Ecological Site:

- Maintain an acceptable range of agave plants/hectare as 0.2 - 5.4 (or greater) flowering plants/ha.
- Maintain ground cover to prevent erosion by having less than 30% bare ground
- Maintain key perennial grass (Black grama, Bush muhly) composition by reserving at least 45% native key perennial grass species

Key Area 7A (agave): Clay Loam Upland Ecological Site:

- Maintain an acceptable range of agave plants/hectare as 0.2 - 5.4 (or greater) flowering plants/ha.
- Maintain ground cover to prevent erosion by having less than 25% bare ground
- Maintain key perennial grass (Black grama, Bush muhly) composition by reserving at least 50% native key perennial grass species

Rationale:

Maintaining ground cover will prevent erosion and excess runoff as well providing sufficient cover to support wildlife species (deer, birds, etc.) at the site. Improving ground cover additionally provides important nesting and escape cover for quail. Maintaining species composition will protect the plant community as well as allow for regrowth of perennial grasses. In addition, maintaining composition of key perennial grass species will also provide forage for wildlife and livestock. Maintaining sufficient agave populations to ensure that sufficient plants reach flowering each year will provide forage for the lesser long-nosed bat.

5 Plant List

5.1.1 Table 7 The following table is a list of the plant species that were observed during our vegetation monitoring on the Mt. Bruce allotment in September 2015.

<u>Species List for Mt. Bruce</u>	
Date: September 28, 2015	
Scientific Name	Common Name
<u>Perennial Grasses</u>	
<i>Aristida spp.</i>	Perennial three-awn
<i>Bothriochloa barbinodis</i>	Cane beardgrass

<i>Bouteloua chondrosioides</i>	Sprucetop grama
<i>Bouteloua curtipendula</i>	Sideoats grama
<i>Bouteloua eriopoda</i>	Black grama
<i>Bouteloua gracilis</i>	Blue grama
<i>Bouteloua hirsuta</i>	Hairy grama
<i>Eragrostis lehmanniana</i>	Lehmann lovegrass
<i>Panicum hallii</i>	Hall's panic
<i>Tridens muticus</i>	Slim tridens
<i>Tridens pulchellus</i>	Fluff grass
<i>Hilaria belangeri</i>	Curly mesquite
<i>Lycurus phleoides</i>	Common wolfstail
<i>Pappus spp.</i>	Pappus grass
<i>Eragrostis echinochloidea</i>	African lovegrass
<u>Perennial Forbs</u>	
<i>Boerhavia spp.</i>	Spiderling (Boerhaavia)
<i>Desmanthus cooleyi</i>	Bundleflower
<i>Dichelostemma capitatum</i>	Bluedicks
<i>Hoffmannseggia glauca</i>	Hog potato
<i>Sphaeralcea spp.</i>	Globemallow
<i>Bahia absinthifolia</i>	Bahia
<i>Carex spp.</i>	Sedge
<i>Croton spp.</i>	Croton
<i>Evolvulus spp.</i>	Wooly morning glory

<i>Senna</i>	Senna
<i>Sida spp.</i>	Fan petals
<i>Talinum spp.</i>	Flame flower
<u>Trees and Shrubs</u>	
<i>Nolina microcarpa</i>	Beargrass/Sacahuista
<i>Opuntia spp.</i>	Prickly pear
<i>Yucca baccata</i>	Banana yucca (Spanish dagger)
<i>Artemesia ludoviciana</i>	White sagebrush
<i>Baccharis pteronioides</i>	Yerba de pasmo
<i>Isocoma tenuisecta</i>	Mariola
<i>Rhus microphylla</i>	Little leaf sumac
<i>Yucca elata</i>	Soaptree yucca

6 Inventory and Monitoring Data

6.1.1 Table 8 Inventory and Monitoring Data Collected on Mount Bruce

<u>Method</u>	<u>Yes</u>	<u>Date</u>	<u>No</u>
Rangeland Health Assessment	X	6/4/2009, 7/24/2013,	
Pace Frequency	X	6/25/09, 10/20/10, 5/27/11, 10/17/12, 11/15/13, 8/4/14, 9/28/15, 6/13/16	
Dry Weight Rank	X	6/25/09, 5/27/11, 10/17/12, 11/15/13, 8/4/14, 9/28/15, 6/13/16	
Ground Cover	X	6/25/2009, 10/17/12, 11/15/13, 8/4/14, 9/28/15, 6/13/16	
Line Intercept*			X

Photos	X	6/4/09, 6/25/09, 10/20/10, 5/27/11, 10/17/12, 11/15/2013, 8/4/14, 9/28/15, 6/13/16	
Fetch	X	6/25/09, 10/17/12, 11/15/13, 8/4/14, 9/28/15, 6/13/16	
Production	X	January 2008 and Fall 2011 done by NRCS 11/29/2016 done by UA Ext Service	

*Line intercept is not an accepted monitoring method used to monitor grasslands

6.1.2 RHE field work related to the LLNB

During the Upland Health Assessment on June 4, 2009, discussion initiated regarding damage to agave stalks. Additional monitoring was conducted on June 25, 2009 by an interdisciplinary team to evaluate the Palmer's agave on the Mt. Bruce allotment.

The Fish and Wildlife Service conducted a study on the Lesser Long-Nosed bat (LLNB), "5 Year Review: Summary and Evaluation", in August 2007.

(http://www.fws.gov/southwest/es/Arizona/Documents/SpeciesDocs/LLNB/LLNB_5yr_Final.pdf). The study concluded that there are many threats to the LLNB including; "roost disturbance, border activities, recreation, vandalism, fire, agave harvesting and mine closures". Development was also mentioned as a threat since "Arizona is the fastest growing state in the country, and much of this growth is projected to occur in the counties and cities that occur within the range of the LLNB". The research determined there are a variety of herbivores that consume agave stalks, leaves and flowers. "Wildlife such as javelina, white-tailed deer, and small mammals also utilized agave flower stalks as a food resource. Howell (1996) found that pronghorn antelope heavily grazed agave flower stalks in certain areas within Fort Huachuca, resulting in local areas of near 100% utilization".

The study indicates that the threat of cattle to agave populations may have originally been overstated as well. "The present or threatened destruction, modification, or curtailment of its habitat or range: Some efforts have been undertaken to protect known roost locations. *The effects of livestock grazing and prescribed fire are probably not as significant as originally thought.*" Significant new threats to roosts are occurring in the form of illegal border activities and urban development (sub-division of private land can negatively affect the remaining public land). Invasive, exotic plant species and catastrophic wildfires are resulting in vegetation community conversion and reducing available LLNB foraging habitat. Urban development and expansion is resulting in permanent loss of LLNB habitat. A critically important threat is the potential for migration corridors to be truncated or interrupted. Significant gaps in the presence of important roosts and forage species along migration routes would affect the population dynamics of this species. The LLNB bat continues to be faced with loss and modification of its habitat throughout its range.

A study titled; "Agave palmeri Inflorescence Production on Fort Huachuca, Arizona" by Jeffrey S. Fehmi determined that "ungulate herbivory affected 50 percent of the agave inflorescences. Given the lack of

predators and minimal hunting, herbivore numbers seem likely to increase, putting greater pressure on the inflorescence numbers”. The study dated September 2004, also concluded that “most herbivory is a result of large ungulates (pronghorn antelope or deer)”. There was also evidence of agave mortality due to herbivory by pocket gophers and there was ample evidence of insect herbivory on the agave plant leaves. “It was certainly clear that insect herbivory contributed to plant stress”. The insects observed during this study were identified as grasshoppers. It is also known that local harvesting of vegetative materials (primarily bear grass) on private land does occur in the area very close to the Mt. Bruce allotment.

6.2 Monitoring Protocols

6.2.1 Grasslands Monitoring Methods

Ground Cover

Ground cover is the amount of surface area comprised of bare ground, perennial plant bases, litter, gravel or rocks. Ground cover data, each soil protection category expressed as a percentage of total hits, reflect the amount of litter, vegetative root bases, gravel and rocks available to intercept raindrop impact before reaching the soil and of bare ground exposed to climatic elements. Cover data were collected with each quadrat placement. A single point from the quadrat was consistently the focal point for cover category classification.

Ground cover ground rules established prior to data collection were:

- One ground cover hit is recorded per quadrat placement. The total number of ground cover hits equals the total number of quadrat placements.
- Litter is dead plant material directly covering the ground, dead perennial vegetative bases, or animal material. If a small stem or piece of litter is not considered large enough to intercept raindrop impact, the hit is the ground covering below it.
- Bare ground is soil with particles up to 1/4"; gravel are particles 1/4"-3" in size; rocks are ≥ 3 ".
- Annual forbs are considered litter cover when in contact with the ground and large enough to intercept raindrop impact.

Pace Frequency

Pace frequency is the number of times a plant species is present within a given number of uniformly sized sample quadrats (plot frames placed repeatedly across a stand of vegetation). Plant frequency is expressed as percent presence for each species encountered within total number of quadrat placements, therefore, frequency reflects the probability of encountering a particular plant species within a specifically sized area (quadrat size) at any location within the key area. The total number of frequency hits among all species will not equal the total number of quadrat placements and frequency is insensitive to the size or number of individual plants. Frequency is a very useful monitoring method but does not express species composition, only species presence. Frequency is an index that integrates species' density and spatial patterns.

A 40 x 40 cm. (0.16 m²) quadrat is used for pace frequency. Ground rules are:

- Species present within the bounds of the sample quadrat are recorded with a single tally.

- If no species are present, no frequency data are recorded.
- Perennial or annual grasses and forbs must be rooted within the quadrat to be counted.
- A grass or forb plant base present under the quadrat frame is considered “in.”
- Annual plants, grasses and forbs, are counted whether green or dried.
- Tree/shrub canopy and basal hits are recorded separately. Over time, these parameters can indicate changes in tree/shrub size (canopy) or plant numbers (basal).
- A canopy hit is any part of the tree or shrub that overhangs the quadrat (enters an imaginary vertical projection of the plot frame).
- Quadrat placements are placed at one-pace intervals (2-steps), patterned in transects (straight lines) and are run parallel to each other, generally contouring slope, within the area of one ecological site (vegetation and soil type).

Fetch

Fetch is the distance from the nearest perennial plant base within 360 degrees of the quadrat’s ground cover point. Fetch, reported with descriptive statistics, relates to plant distribution and watershed characteristics. Perennial plant cover can reduce soil erosion by creating an obstruction, slowing the rate of overland flow. A shorter distance between perennial plant bases lessens the opportunity for flowing water to acquire the necessary energy to remove soil and litter from a site. Overtime, fetch data can be used to assess changes in the spatial distribution and connectivity of vegetation patches plus document trends in the fragmentation of plant cover for rangeland health evaluation. One-hundred distances were measured in conjunction with pace frequency as baseline data for future monitoring.

Dry Weight Rank (DWR)

Dry weight rank estimates plant composition on a dry weight production basis. This data collection was made using a 40cm x 40cm plot frame and 100 placements. The three perennial species within a vertical projection of quadrats placed repeatedly (100 times) comprising the most annual biomass production on a dry weight basis are ranked (1st, 2nd, and 3rd most biomass). Multiple ranks are given when less than 3 species are present. For example, if species A and species B are the two species present, ranks of 1 and 3, 1 and 2, or 2 and 3 are given to species A; if only species B is present, it receives a tally for each rank. No tally was recorded at quadrat placements void of perennial species.

Production

Ten plots (.96 ft²) are clipped to the ground surface and put into paper bags to dry. Bags are named and numbered by ranch, key area, date, and bag number. Samples are dried for several weeks before weighing them with a gram scale. Page 115 of the Interagency Technical Manual has a table with conversions from grams to pounds per acre by plot size.

General view photos were taken in the four cardinal directions to reflect the key area.

6.2.2 Agave Monitoring Methods

Belt Transect

A 200 foot baseline was established in the key area. Beginning at the 10 foot mark, a 100 foot tape was run perpendicular to the baseline. This was repeated at 20 foot intervals for a total of 10 transects (10’, 30’, 50’, 70’, 90’, 110’, 130’, 150’, 170’, 190’). Two six foot poles were used on either side of the transect tape to create a 12’ x 100’ quadrat. The number of individual agave plants in each quadrat was

recorded. Only plants rooted in the quadrat were counted. To minimize error due to edge effects, individual plants falling on the right and bottom (baseline) edges were counted as in, and individual plants falling on the left and top edge were counted as outside the quadrat. Additionally, observations of agaves bolting or having a damaged inflorescence were recorded.

7 Management Evaluation and Summary of Studies Data

Permanent monitoring transects were established in 2009 on both private land adjacent to the Mt. Bruce allotment and on the BLM land within the Mt. Bruce allotment. The sites were chosen with a team of professionals from the Natural Resources Conservation Service (NRCS), University of Arizona Extension Service and BLM. Transects were placed on several ecological sites to represent the entire allotment. The purpose of the monitoring program is to evaluate the effects of livestock and wildlife use on the rangeland resources and to assist management decisions regarding rangeland conditions. Transects have been read in 2009 and then consecutively from 2012 to 2016. The data collected the first three years will serve as a base line for future trend analysis. Once the grazing lease is issued, data collection is planned to occur in the fall every 2 – 5 years thereafter.

7.1.1 Actual Use

Year	No. of cattle
2008	6
2009	6
2010	6
2011	6
2012	6
2013	6

7.1 Key Area Data

Data Summary

Site Class: BLM || Tucson || Mt. Bruce (6259) || Mt. Bruce

Date: 6/13/2016

Site ID: MB-1

Examiner(s): Mike McIntire, Kristen Duarte, Bill Schock

% Ground Cover						
Species	Transect (#Hits)					% Cover*
	1	2	3	4	Total	
Bare Ground	2	6	6	4	18	6.00
Gravel (1/4" - 3")	1	2	1	2	6	2.00
Litter	68	64	63	66	261	87.00
Live Basal Veg.	4	3	5	3	15	5.00

Fetch			
n	100	Minimum	0
Maximum	10	Median**	2.75
Mean	3.23	SE	0.18
Asymmetry	2.04		

% Frequency								40x40 cm					DWR Wt. Composition			Sample Size = 100	
Species	Transect (#Hits)						% Freq*	Rank (#Hits)			Wtd. Sum	% Comp.*					
	1	2	3	4	Total	1		2	3								
Woody Species																	
yerba de pasmo	BAPT	1	1	1	1	4	4.00		1	3	5	0.50					
yerba de pasmo-canopy	BAPT				2	2	2.00										
turpentine bush	ERLA12	1				1	1.00			1	1	0.10					
burroweed	ISTE2	3	1			4	4.00		1	1	3	0.30					
beargrass-canopy	NOMI		2	1	3	6	6.00										
beargrass	NOMI									5	5	0.50					
pricklypear	OPUNT									1	1	0.10					
soaptree yucca	YUEL	1				1	1.00			1	1	0.10					
Grasses - Perennial																	
threeawn	ARIST	1		1	2	4	4.00		1	2	4	0.40					
cane beardgrass	BOBA3	1	3	2	8	14	14.00	6	5	4	56	5.60					
sideoats grama	BOCU	4	10	12	7	33	33.00	10	15	18	118	11.80					
black grama	BOER4	2	1			3	3.00	2	1	1	17	1.70					
blue grama	BOGR2	6	3	3	3	15	15.00	6	7	6	62	6.20					
hairy grama	BOH2							1	1	1	10	1.00					
Lehmann lovegrass	ERLE	25	24	23	22	94	94.00	74	66	41	691	69.10					
Lehmann lovegrass-nestec	ERLE	9	9	9	13	40	40.00										
curly-mesquite	HISE				1	1	1.00			1	1	0.10					
Arizona muhly	MUAR3	1	2	2	3	8	8.00	1	1	4	13	1.30					
Forbs - Perennial/Biennial																	
AZ blue eyes	EVAR				1	1	1.00			1	1	0.10					
hog potato	HOGL2									1	1	0.10					
Annuals																	
Annual forb(s)	AAFF	3			1	4	4.00										
Unclassified																	
bahia	BAHA	1		6	2	9	9.00		1	3	5	0.50					
spiderling	BOERH2		2			2	2.00			1	1	0.10					
Cooley's bundleflower	DECO2		2			2	2.00			2	2	0.20					
dwarf morning-glory	EVOLV	1				1	1.00										
burroweed	HATE				1	1	1.00										
four o'clock	MIRAB	1				1	1.00			1	1	0.10					
Unknown 1	UNKN1	1	1			2	2.00			1	1	0.10					

* Number of decimal places does not imply level of precision

7.1.1 Frequency Data

Site History - % Frequency

1/12/2016

Site Class: BLM || Tucson || Mt. Bruce (6259) || Mt. Bruce

Site ID: MB-1

% Frequency		Quadrat Size: 10x10 cm				
Species	Transect					
	06/25/09	10/17/12	11/15/13	08/04/14	09/28/15	06/13/16
Grasses - Perennial						
Lehmann lovegrass		45				

% Frequency		Quadrat Size: 40x40 cm				
Species	Transect					
	06/25/09	10/17/12	11/15/13	08/04/14	09/28/15	06/13/16
Woody Species						
yerba de pasmo-canopy		1				2
yerba de pasmo			1			4
turpentine bush						1
burroweed	1	1		4		4
burroweed-canopy	3			4		
beargrass-canopy	5	7	5		4	6
beargrass			1	2	3	
pricklypear	1					
littleleaf sumac-Rhusm. canopy					2	
littleleaf sumac-little leaf sumacca			1	3		
banana yucca	1	1		1		
banana yucca-canopy		2	1	1		
soaptree yucca-Canopy					3	
soaptree yucca						1
Grasses - Perennial						
threeawn	1	9			3	4
cane beardgrass	10	13	13	2	7	14
sprucetop grama	1					
sideoats grama	16	38	8	8	18	33
black grama	28	19	2	28	10	3
blue grama	1	4	5	3	6	15
hairy grama	9	9			2	
sedge					1	
African lovegrass					1	
Lehmann lovegrass	83	97	95	94	100	94
Lehmann lovegrass-nestec	30				86	40
curly-mesquite		3	13		2	1
common wolfstail		4			6	
Arizona muhly						8
Hall's panicum	13	3				
litter-pappus		3				
slim tridens	2					
fiuffgrass	2					
Forbs - Perennial/Biennial						
white sagebrush		1				
bluedicks	1					
AZ blue eyes						1
hog potato	1				2	
globemallow	1					
Annuals						
Annual forb(s)	9	11	3	34	34	4
Annual grass(es)		7	3			
Unclassified						

7.1.2 7.1.2 Percent Ground Cover Data

Site History - % Ground Cover

1/12/2017

Site Class: BLM || Tucson || Mt. Bruce (6259) || Mt. Bruce

Site ID: MB-1

Category	% Ground Cover					
	Transect					
	06/25/09	10/17/12	11/15/13	08/04/14	09/28/15	06/13/16
Bare Ground	4	2	1	1	1	6
Gravel (>2mm - 3/4")	1					
Gravel (1/4" - 3")		1	1	1	1	2
Litter		87	93	94	93	87
Litter <1/2"	74					
Litter >=1/2"						
Live Basal Veg.	20	10	5	4	5	5
Rock > 3"		1				
Rock >3/4"	1					

Page: 1/1

Vegetation/GIS DataSystem - University of Arizona

7.1.3 Production Data

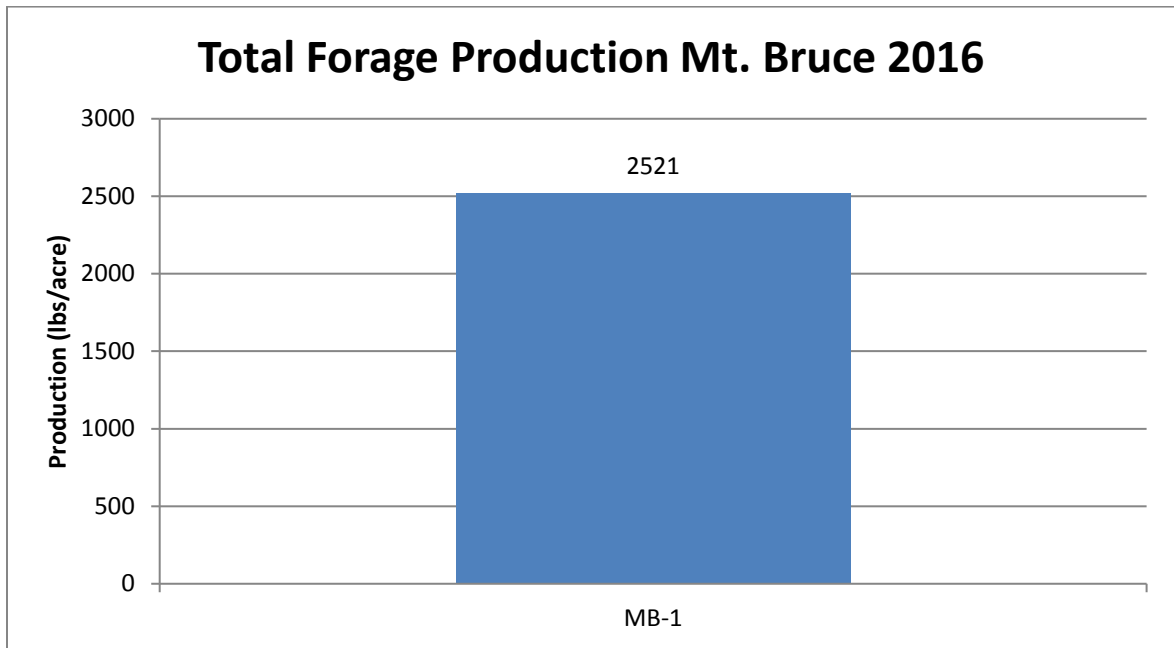
Production data was collected on the Mt. Bruce allotment on November 30, 2016 at the BLM Key Area MB-1 by the University of Arizona Extension Service. The Ecological Site at the key area is a Clay Loam Upland 41-1 with a 16-20 inch precip zone. The NRCS Ecological Site Description (ESD) for this site outlines what is low, average and high total annual production using pounds (lbs) per acre as the measurement. The following table provides the numbers from the ESD.

Total Annual Production on Clay Loam Upland 41-1, 16-20 in precip. zone

Low	453 lbs/acre
Average	1,075 lbs/acre
High	1,530 lbs/acre

7.1.4 Total forage production Mt. Bruce Allotment

The following table shows the production data collected by the University of Arizona Extension on November 30, 2016.



7.1.2 Interpretation of the Monitoring Results:

Gramas are abundant and show good diversity. Black and sideoats grama, both important range grasses because of nutritional value and palatability, have the highest frequency of the native perennial grasses. Ground cover is good with the majority of the hits on litter, which supports soil resistance to erosion.

7.1.3 Agave Monitoring Data

LLNB Core Areas and Monitoring Results

LCNCA lesser long-nosed bat agave core-use areas were established during the winter of 2010-2011 through ground-truthing and mapping areas containing significant density of agave, and included areas above 4,800' in elevation north of Hwy 82 and above 5,000' in elevation south of Hwy 82.

Agave density on the Mt. Bruce Allotment was estimated using a belt transect method (BLM Interpreting and Measuring Indicators of Rangeland Health, Course Number 1730-37) at three transects (KA6, KA7A, and KA9). Agaves were counted along these transects in 2011, 2014 and 2015 (with the exception of KA9 in 2015). Results are depicted below:

7.1.5 Table 8 Agave Monitoring Results for Mount Bruce – Number of Agave/Hectare

Year	Key Area 6	Key Area 7A	Key Area 9	Annual Average
2011	217	287	188	231
2014	178	217	79	158
2015	50	70	No data recorded	60
Three Year Average/Transect	148	191	134	158 ²

¹ These data were originally presented in three monitoring reports. Two of these reports are available in TFO Range Files, and the data (2011) from a third report was only available as a summary in a draft rangeland health document. Data were presented differently in each report, 1 transect was not read in 2015 and the readings from 2015 are significantly less than previous years with no explanation in the report as to the reason for the decline. These discrepancies resulted in interpretive difficulty; these data should be viewed as such. ² Grand average from all years and all transects minus 2015 data from KA9.

The incidental take statement for this action relative to LLNB, indicates an acceptable range of agave plants/hectare as 0.2 - 5.4 (or greater) flowering plants/ha. The level of agave occurrence on this allotment as measured in 2011, 2014, and 2015 seem to indicate far higher levels of agave density on the allotment.

After extensive field work, research, review, and consulting with USFWS, BLM concludes there are many factors that contribute to damage to the flowering stalk of the agave, including utilization by white-throat woodrat, Botta’s pocket gopher, pronghorn, mule deer, javelina and agave snout weevil. FWS states in a regionally and thematically related biological opinion (BO) that “because bolting agaves are often heavily used by wildlife, especially deer, they [Widmer 2002] conclude that removing cattle during the bolting season does not necessarily ensure a significantly lower level of herbivory”. The BO further states that livestock herbivory on agave has little significance on portions of allotments that are greater than 0.75 miles from livestock water sources. The majority of the areas of the Mt. Bruce allotment that can produce high density agave stands, occur greater than 0.75 mi from livestock water sources. Given higher than take-statement levels of agave on the allotment, the fact that many species utilize agave, and the fact the USFWS considers agave stands more than 0.75 m from livestock waters to be at low risk from livestock herbivory, BLM concludes that livestock use is insignificant and discountable for impacts to agave as a forage resource for LLNB on the Mt. Bruce allotment. The BLM will continue to monitor the agave population on the Mt. Bruce allotment as part of the LCNCA agave monitoring program.

7.1.4 Additional Agave Monitoring

In August 2015, the BLM with help from the University of Arizona Extension, established three permanent monitoring key areas on the Appleton Whittell National Audubon Research Ranch (Research Ranch), which is also located in Elgin, AZ. The key areas were read again in June 2016. There is no authorized cattle grazing on the Research Ranch and these key areas serve as a “control” to use for comparison monitoring data for Mt. Bruce. The ecological sites are similar to Mt. Bruce and well as vegetation and precipitation. The same monitoring protocol was followed on the Research Ranch as the Mt. Bruce allotment. The key areas will be monitoring yearly for three years to establish a baseline for trend data and then every 2-5 years thereafter.

Summarized Agave Results from the Research Ranch

August 2015	
1345	Average density of agaves was 1.3/1200 ft ² . 10% of agaves were bolting and 15% had a damaged inflorescence.
1346	Average density of agaves was 5.1/1200 ft ² . None of the agaves were bolting. 12 (24%) had bolted previously and had a damaged inflorescence.
1347	Average density of agaves at this site was 0.8/1200 ft ² . None of the agaves were bolting. One (13%) had bolted previously and had a damaged inflorescence.

June 2016	
1345	Average density of agaves was 1.9/1200 ft ² . One (5%) of agaves was bolting. Three agaves (66%) had their inflorescence removed. One agave (5%) was a seedling.
1346	Average density of agaves was 1.7/1200 ft ² . None of the agaves were bolting. Four (24%) had a damaged inflorescence. None of the agaves were seedlings.
1347	Average density of agaves at this site was 2/1200 ft ² . None of the agaves were bolting. Four (20%) had a damaged inflorescence. Two agaves (10%) were seedlings.

This photo was taken by Linda Kennedy, Director of the Appleton-Whittell Audubon Research Ranch, in May 2016 near Key Area 1345.

This photo was taken by Linda Kennedy, Director of the Appleton-Whittell Audubon Research Ranch, in May 2016 near Key Area 1345.



7.1.2 Carrying Capacity Calculation

In 2008 in collaboration with the NRCS, a carrying capacity was calculated based on usable forage for year-round use at the utilization use limit of 35%.

2008 Estimated Carrying Capacity

Year-Round Use:

Based on usable forage

BLM Lands 35%

Home Pasture BLM

Ecosite	ac./ecosite	% of pasture	accessible acres	estimated usable prod. by ecosite (lbs/ac)	total available prod. (lbs/ecosite)	Total usable forage (lbs/ecosite)	Animal Consumption (usable forage /lbs required Per animal)
Loamy Upland	17	7%	100%	1,158	19,686	6,890	1
Limestone Hills	80	33%	85%	1,274	86,632	30,321	3
Limy Upland	143	60%	100%	1,068	152,724	53,453	5
	240	100%		3,500	259,042	90,665	8

Total Carrying Capacity Year-Round

8 head

7.2.1 Land Health Standards

The Rangeland Health Evaluation was completed at two sites on June 4, 2009 and at one site on July 24, 2013. The two selected areas on June 4, 2009 were representative of the Loamy Upland 41-1 and Limy Upland 41-1 Ecological Sites and represent the ecological sites over the majority of the allotment. The site selected on July 24, 2013 was representative on the Loamy Upland Ecological Site. The assessment method involves observing a set of physical and biological attributes at each site to determine overall rangeland health. These observed attributes are placed in one of five categories depending on their degree of presence or absence on the site (i.e. None to Slight, Slight to Moderate, Moderate, Moderate to Extreme, and Extreme). These attributes include items such as: plant pedestalling, flow patterns, soil and litter movement by wind or water, presence of rills or active gullies, soil compaction, plant mortality/decadence and soil resistance to erosion. A final rangeland health determination is made by summing all of the attributes.

Methods for the rangeland health evaluations are described in "Interpreting Indicators of Rangeland Health, Technical Reference 1734-6, 2005".

8 Conclusions

Rangeland Health Conclusions are based on the analysis of the recent Rangeland Health Evaluations. The following tables are a summary of Standard Achievement or Non-achievement for 2009 and 2013 evaluations.

8.1.1 Table 9 Rangeland Health Evaluations Results Summary – Site 1 2009

Site #1 – 6/4/09	
Standard 1 – Upland Sites	Achieved
Standard 2 – Riparian – Wetland Sites	No riparian or wetlands on the allotment, so standard does not apply
Standard 3 – Desired Resource Conditions	Achieved

Rationale for RHE results from Site #1 on June 4, 2009

The Rangeland Health Evaluation indicated that there is a None to Slight rating for departure for the Ecological Site Description and Ecological Reference Areas for soil and hydrologic functions. Hydrologic function was rated “none to slight” for departure from expected conditions based on rock, gravel, and vegetative cover. There was one “slight to moderate” rating was for Hydrologic Function due to the presence of one inactive gully found at the site. It is not an active gully but received this rating because it was present on the site. Biotic integrity functions were rated “none to slight” for departure from expected in the indicators of soil surface resistance to erosion and loss, functional/structural groups, litter amount, production, and reproductive capability. A “moderate” rating was assigned for invasive plants on both sites because of the presence of Lehmann lovegrass. However, frequency and diversity of native perennial grass species is present. All other components of the Biotic Integrity are functioning within the normal range of variability expected for this site.

8.1.2 Table 10 Rangeland Health Evaluations Results Summary – Site 2 2009

Site #2 – 6/4/09	
Standard 1 – Upland Sites	Achieved
Standard 2 – Riparian – Wetland Sites	No riparian or wetlands on the allotment, so standard does not apply
Standard 3 – Desired Resource Conditions	Achieved

7.2.2 Rationale for RHE results from Site #2 on June 4, 2009

The Rangeland Health Evaluation indicated that there is a None to Slight rating for departure for the Ecological Site Description and Ecological Reference Areas for soil and hydrologic functions. Therefore Soil/Site Stability is within normal parameters and Hydrologic Function is maintained at expected levels. Hydrologic function was consistently rated “none to slight” for departure from expected conditions based on rock, gravel, and vegetative cover. A “moderate” rating was assigned for invasive plants on both sites because of the presence of Lehmann lovegrass. However, frequency and diversity of native perennial grass species is present. All other components of the Biotic Integrity are functioning within the normal range of variability expected for this site.

8.1.3 Table 11 Rangeland Health Evaluations Results Summary – Site 1 2013

Site #1 – 7/24/13	
Standard 1 – Upland Sites	Meeting Standards
Standard 2 – Riparian – Wetland Sites	No riparian or wetlands on the allotment, so standard does not apply
Standard 3 – Desired Resource Conditions	

7.2.3 Rationale for RHE results from Site #2 on July 24, 2013

The Rangeland Health Evaluation indicated that there is an overall None to Slight rating for departure for the Ecological Site Description and Ecological Reference Areas for Soil/Site Stability and one rating of “slight to moderate” due to the presence of an inactive gully found at the site. Hydrologic function was rated “none to slight” for departure from expected conditions based on absence of active erosion. There were two “slight to moderate” ratings due to the inactive gully mentioned above and plant community composition due to the presence of Lehmann’s lovegrass. Biotic integrity functions were rated “none to slight” for departure from expected in the indicators of soil surface resistance to erosion, litter amount expected for the site, annual production and the reproductive capability of perennial plants. There were two “slight to moderate” ratings was assigned for invasive plants and the presence of Lehmann’s lovegrass. However, frequency and diversity of native perennial grass species is present. All other components of the Biotic Integrity are functioning within the normal range of variability expected for this site.

9 Recommended Management Actions

Based on existing information there are no resource concerns that could be impacted by current livestock use that should be considered before lease issuance. Therefore, the 10-year grazing lease may be issued with the following terms and conditions:

1. If in connection with allotment operations under this authorization, any human remains, funerary objects, sacred objects or objects of cultural patrimony as defined in the Native American Graves Protection and Repatriation Act (P.L. 101-601; 104 Stat. 3048; 25 U.S.C. 3001) are discovered, the lessee shall stop operations in the immediate area of the discovery, protect the remains and objects, and immediately notify the Authorized Officer of the discovery. The lessee shall continue to protect the immediate area of the discovery until notified by the Authorized Officer that operations may resume.
2. A use limit of 30-40% of current year’s average annual production is in effect, to be measured on key forage species at permanent vegetation transects. The use limit will ensure the physiological needs of the plants and multiple use objectives are being met. (CFR 43 4130.3-2).
3. Actual use information will be submitted within 15 days of the end of the grazing year in accordance with 43 CFR 4130.3-2(d). Actual use reports will identify the amount of livestock use and period of use for each water source/pasture.

4. Pronghorn: Open grasslands and in draws in the semidesert grassland and oak savannah vegetation communities (e.g., loamy bottom swales, loamy hills, and limy slopes ecological sites) provide the following habitat components for pronghorn fawning at key monitoring sites (WF03) (ppgs 10-11):
 - Maintaining vegetation cover 10-18 inches high during the fawning season from the beginning of April through June each year in key fawning areas.
 - Maintaining the presence of five or more species of grasses and shrubs in the vegetation communities.
 - Limiting trees to no more than 5% of the total cover.

5. Grassland sparrows: Ensure adequate cover for grassland sparrows as defined in the grassland sparrow sub-objective (Upland Wildlife Habitat Sub-Objective A). (GM44) (p.38)
 - To meet Upland Wildlife Habitat Sub-Objective A for grassland sparrow habitat, implement vegetation treatments including prescribed fire and other upland restoration actions to reduce shrub canopy and enhance grass species diversity and cover, as described in the watershed management actions section. (WF29) (p.38)

10 List of Preparers

Name	Title
Kristen Duarte	Rangeland Management Specialist
Keith Hughes	Natural Resource Specialist
Ben Lomeli	Hydrologist
Kim Ryan	Cultural Resources Specialist
Amy Markstein	NEPA Specialist

11 Wildlife Conservation Measures

To protect the lesser long-nosed bat:

1. Prior to construction of range improvement projects, pre-construction surveys shall be conducted for paniculate agaves and saguaros that may be directly affected by construction activities or, in the case of new water sources, may occur within 0.5 mi of the proposed water source. If agaves or saguaros are found during pre-construction surveys, the following measures shall be implemented:

- a. Fences, pipelines, waters, and other range improvement projects shall be located to reduce as much as possible injury and mortality of agaves and saguaros.
- b. Disturbance shall be limited to the smallest areas practicable and projects shall be located in previously-disturbed areas whenever possible.
- c. Vehicle use shall be limited to existing routes and areas of disturbance except as necessary to access or define boundaries for new areas of construction or operation.
- d. All workers shall strictly limit their activities and vehicles to designated areas. Construction workers shall be informed of these terms and conditions.

2. No seeding/planting of nonnative plants shall occur on any public lands in the allotment.

3. Any chemical and mechanical vegetation manipulation, or use of prescribed fire, shall be designed and planned to minimize adverse effects to lesser long-nosed bat forage plants. Measures shall be developed to ensure that no more than 20 percent of agaves that are burned during prescribed fire are killed by the fire and that injury and mortality of saguaros are negligible.

To protect the jaguar:

1. Predator control activities associated with livestock grazing (including those conducted by APHIS-ADC or the permittees) and authorized by the Bureau shall require identification of the target animal to species before control activities area carried out. If the identified animal is a jaguar, that individual shall not be subjected to any predator control actions. If, when using dogs to tree mountain lions, a jaguar is inadvertently chased and/or treed by the dogs, the dogs shall be called off immediately once it is realized the animal is a jaguar.

2. Any predator control activities authorized by the Bureau and associated with this project shall be conducted only after all appropriate permits (whether Federal, State, or other) have been obtained.

3. Dense, low vegetation (mesquite, saltcedar, cottonwood, willow, etc.) in major riparian or xero-riparian corridors on Bureau-administered lands south of Interstate 10 and Highway 86 shall be maintained.

4. The Bureau, in coordination with the Service and Arizona Game and Fish Department, shall investigate all reports that it receives of observations of jaguars in the project area. The investigation shall include appropriate field collection of data.

To protect other wildlife:

1. All drinking troughs shall be fitted with a wildlife escape ramp that intercepts the line of travel along the tank edge.

Attachment A

Standard Terms and Conditions

1. Grazing permit or lease terms and conditions and the fees charged for grazing use are established in accordance with the provisions of the grazing regulations now or hereafter approved by the Secretary of the Interior.
2. They are subject to cancellation, in whole or in part, at any time because of:
 - a. Noncompliance by the permittee/lessee with rules and regulations.
 - b. Loss of control by the permittee/lessee of all or a part of the property upon which it is based.
 - c. A transfer of grazing preference by the permittee/lessee to another party.
 - d. A decrease in the lands administered by the Bureau of Land Management within the allotment(s) described.
 - e. Repeated willful unauthorized grazing use.
 - f. Loss of qualifications to hold a permit or lease.
3. They are subject to the terms and conditions of allotment management plans if such plans have been prepared. Allotment management plans **MUST** be incorporated in permits or leases when completed.
4. Those holding permits or leases **MUST** own or control and be responsible for the management of livestock authorized to graze.
5. The authorized officer may require counting and/or additional or special marking or tagging of the livestock authorized to graze.
6. The permittee's/lessee's grazing case file is available for public inspection as required by the Freedom of Information Act.
7. Grazing permits or leases are subject to the nondiscrimination clauses set forth in Executive Order 11246 of September 24, 1964, as amended. A copy of this order may be obtained from the authorized officer.
8. Livestock grazing use that is different from that authorized by a permit or lease **MUST** be applied for prior to the grazing period and **MUST** be filed with and approved by the authorized officer before grazing use can be made.

Attachment A (Cont.)

Standard Terms and Conditions

9. Billing notices are issued which specify fees due. Billing notices, when paid, become a part of the grazing permit or lease. Grazing use cannot be authorized during any period of delinquency in the payment of amounts due, including settlement for unauthorized use.

10. Grazing fee payments are due on the date specified on the billing notice and MUST be paid in full within 15 days of the due date, except as otherwise provided in the grazing permit or lease. If payment is not made within that time frame, a late fee (the greater of \$25 or 10 percent of the amount owed but not more than \$250) will be assessed.

11. No Member of, or Delegate to, Congress or Resident Commissioner, after his/her election of appointment, or either before or after he/she has qualified, and during his/her continuance in office, and no officer, agent, or employee of the Department of the Interior, other than members of Advisory committees appointed in accordance with the Federal Advisory Committee Act (5 U.S.C. App.1) and Sections 309 of the Federal Land Policy and Management Act of 1976 (43 U.S.C. 1701 et seq.) shall be admitted to any share or part in a permit or lease, or derive any benefit to arise there from; and the provision of Section 3741 Revised Statute (41 U.S.C. 22), 18 U.S.C. Sections 431-433, and 43 CFR Part 7, enter into and form a part of a grazing permit or lease, so far as the same may be applicable.

12. The operator is responsible for informing all persons who are associated with the allotment operations that they will be subject to prosecution for knowingly disturbing historic or archaeological sites, or for collecting artifacts. Any cultural (historic/prehistoric site or object) or paleontological resource (fossil remains of plants or animals) discovered during operations shall be immediately reported to the Authorized Officer (AO) or his/her designee. All operations in the immediate area of the discovery shall be suspended until written authorization to proceed is issued. An evaluation of the discovery shall be made by a qualified archaeologist or paleontologist to determine appropriate actions to prevent the loss of significant cultural or scientifically important values.

If in connection with this work any human remains, funerary objects, sacred objects or objects of cultural patrimony as defined in the Native American Graves Protection and Repatriation Act (P.L. 101-601; 104 Stat. 3048; 25 U.S.C. 3001) are discovered, operations in the immediate area of the discovery shall cease, the remains and objects shall be protected, and the operator shall immediately notify the BLMTFO. The

immediate area of the discovery shall be protected until notified by the BLMTFO Manager that operations may resume.

12 Authorized Officer Concurrence

I have reviewed the determinations presented in Section 8 Determinations of Land Health Standards and the grazing and other management actions identified in Section 9 Recommended Management Actions.

I concur with the determinations and recommendations as written.

I do not concur.

I concur, but with the following modifications:

_____/s/_____

Melissa Warren

Field Office Manager

BLM Tucson Field Office

____6/19/17_____

Date

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