

Rangeland Health Evaluation
El Capitan Allotment
Lease #04504

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1 Introduction

The El Capitan allotment Rangeland Health Evaluation (RHE) 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 Instruction Memorandum 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 other interested parties focus on a common understanding of acceptable resource conditions. The guidelines provide a basis for working together to achieve that vision.

The purpose of this evaluation is to determine if existing multiple uses are meeting the Arizona Standards for Rangeland Health and Guidelines for grazing administration along with appropriate land use plan and activity plan objectives.

1.1 Allotment Location

The El Capitan allotment is located approximately 17 miles south of Globe, Arizona. State Route (SR) 77 traverses the allotment from north to south. Elevation within the allotment ranges from around 3,000 feet to over 5,000 feet. Topography is rough with steep mountainous terrain. The BLM portion of the allotment is located in T.3S., R.15E.

Table 1 BLM Categorization and Grazing Preference for the El Capitan Allotment

Allotment Name	Grazing Preference	Rangeland Classification	Management Category
El Capitan	60 AUMs, 5 cattle year long (CYL)	Perennial	Custodial

Public lands within this allotment are leased under Section 15 of the Taylor Grazing Act. Section 15 of the Taylor Grazing Act offers preference for leasing isolated or disconnected tracts of public lands located outside of established grazing districts.

The BLM public lands in the El Capitan allotment are surrounded by private land and Arizona State Trust Land (State Land). There is no fencing between BLM, private, or State Land.

Allotment Acreages

The acreage of the El Capitan allotment is given below.

Table 2 El Capitan Allotment Land Ownership

Land Classification	El Capitan Allotment
Public Acres	680
State Acres	791
Private Land Acres	520
Total Acres	1,991

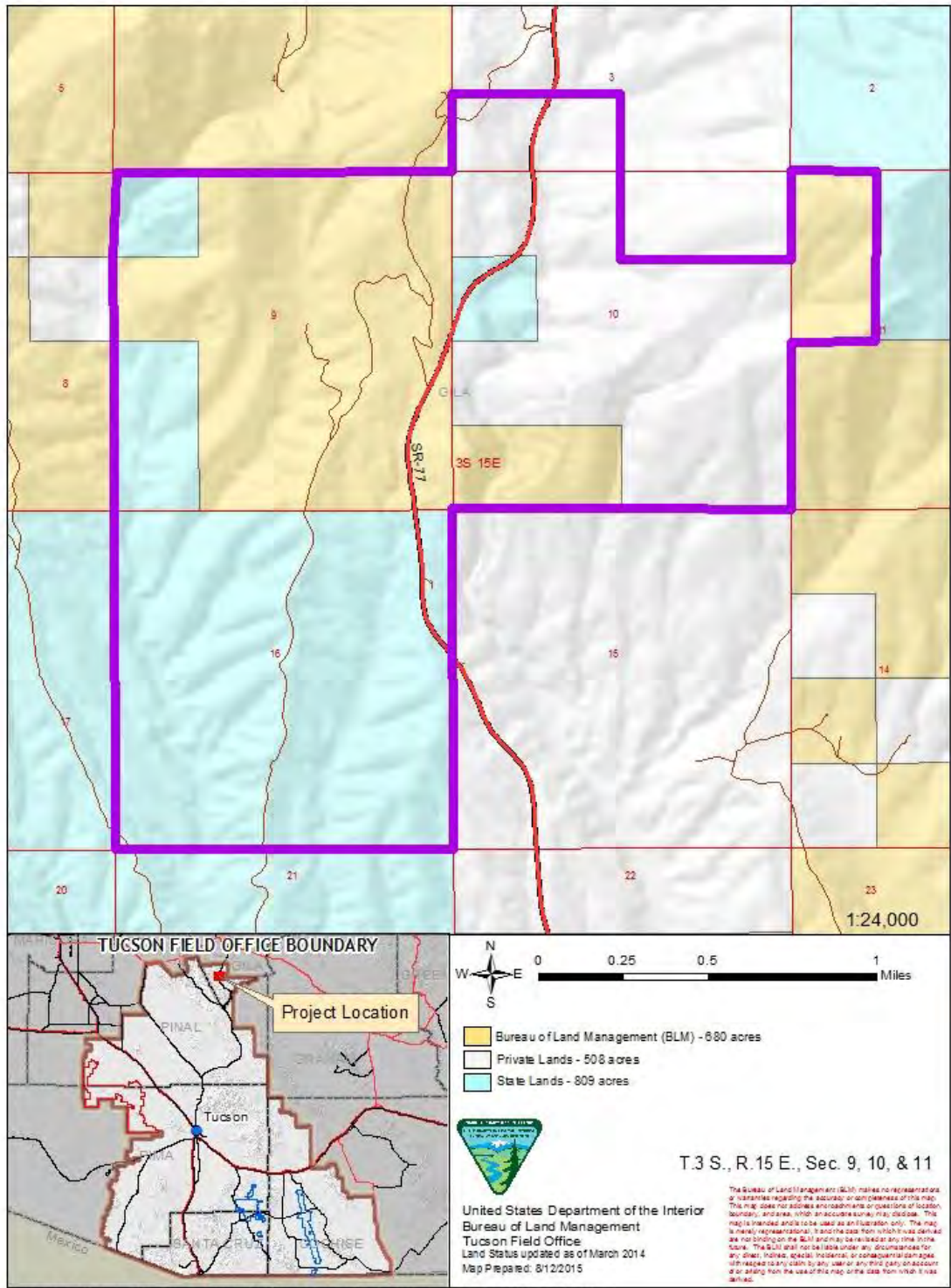


Figure 1 EI Capitan Allotment

1.2 Physical Description

1.2.1 Soils/Vegetation

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 El Capitan allotment consists of MLRA 040- Limy Upland and Limy Slopes which receive 10 to 13 inches of precipitation per year, and MLRA 038- Limestone Hills which receive 12 to 16 inches of precipitation per year. Ecological Site Guides were last revised in 2008 for these sites.

The plant communities found on an ecological site are naturally variable. Existing communities are the result of the combination of historical and recent uses and natural events. Composition and production will vary with yearly conditions, location, aspect, and natural variability of the soils. The Historical Climax Plant Community represents the natural potential plant communities found on relatively undisturbed sites.

The Historical Climax Plant Community for Limy Upland as listed in the NRCS ecological site description is as follows: 1-10% perennial grasses and forbs; 10-20% canopy of creosotebush; 5-15% canopy of other shrubs; annual forbs and grasses will fluctuate with climate.

The Historical Climax Plant Community for Limy Slopes as listed in the NRCS ecological site description is as follows: 1-15% perennial grasses and forbs; 5-15% canopy of trees and saguaro; 5-15% canopy of other shrubs; annual forbs and grasses will fluctuate with climate.

The Historical Climax Plant Community for Limestone Hills as listed in the NRCS ecological site description is as follows: 5-15% perennial grasses; 5-15% annual grasses and forbs; 20-30% canopy of shrubs and succulents.

1.2.2 Water Quality

There is no Section 303d Water Quality Limited Stream Segments associated with the allotment.

The El Capitan allotment contains a road that has sections in poor condition due to lack of maintenance, and the roadway is intercepting surface runoff that is leading to erosion on the steeper grade sections. The erosion from this roadway may cause sedimentation somewhere downstream of the allotment. Roads are highly eroded in many places and there are some severely impacted sites that need significant repairs before they become completely impassable.

1.2.3 Climate and Precipitation

Climate and precipitation data for the El Capitan allotment is taken from the Western Regional Climate Center (WRCC) data available at www.wrcc.dri.edu. The data are based on the National Oceanic and Atmospheric Administration (NOAA) site located in Globe, AZ north of the allotment.

1981-2010 Monthly Climate Summary

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Mean Max. Temperature (F)	57.5	61	67.4	75.6	84.8	94.4	96.4	94	89.2	79.2	65.7	56.7	76.9
Mean Temperature (F)	44.3	47.3	53	59.5	67.9	77.1	81.5	79.4	74.1	63.8	51.8	43.7	62
Mean Min. Temperature (F)	31.1	33.7	38.5	43.4	50.9	59.7	66.7	64.9	59	48.3	37.9	30.8	47.1
Mean Precipitation (in.)	2.07	1.68	1.73	0.51	0.36	0.25	2.13	2.86	1.29	1.16	1.03	1.68	16.75

Unofficial values based on averages/sums of smoothed daily data. Information is computed from available daily data during the 1981-2010 period. Smoothing, missing data and observation-time changes may cause these 1981-2010 values to differ from official National Climate Data Center (NCDC) values.

1.3 Biological Resources

1.3.1 Wildlife Resources

Common wildlife species found in the area include mule deer, coyote, fox, jackrabbit, cottontail rabbit, black-throated sparrow, cactus wren, Gambel's quail, phainopepla, and a variety of rodents.

The Bureau has reviewed the U.S. Fish and Wildlife Service's (USFWS) list of Threatened and Endangered Species for Gila County. (See Attachment C)

1.3.2 Jaguar

While Jaguars historically ranged north past the Mogollon Rim in Arizona, today it is generally accepted that Jaguars are limited to the areas much farther south in Arizona due to habitat loss and barriers to dispersal. Because the lease renewal is for a minimal number of livestock, and because the area of impact is small relative to a typical jaguar home range, the action renewing the lease would have no impact on Jaguar. The nearest USFWS designated critical habitat for Jaguar is approximately 85 miles to the south of the El Capitan allotment. Because the El Capitan allotment is significantly removed from Jaguar critical habitat, the renewal of this lease would not impact Jaguar critical habitat.

1.3.2 Ocelot

In April 2010, an ocelot was found dead on a road near Globe, Arizona, approximately 9 miles north of the El Capitan allotment. A genetic analysis determined this specimen to be not of captive origin. Additional sightings have been documented in southeastern Arizona in 2011 and 2012. Given that a road killed ocelot was discovered near the allotment, it is possible that the denser xero-riparian habitats located on the El Capitan allotment could provide dispersal cover for ocelot; however, given the small number of livestock administered under this lease and the small acreage of the allotment, it is unlikely that continued grazing under the lease would impact ocelot dispersal habitat.

1.3.3 Lesser long-nosed bat

The El Capitan allotment contains agave and columnar cacti resources that could be used by nectivorous bats as foraging resources; however, Lesser long-nosed bats (LLNB) have not been documented in the region (pers. Com. Jason Corbett, Bat Conservation International 2014). No roost site potential for LLNB exists on the El Capitan allotment. Conservation measures identified in the 2012 Gila District Grazing Biological Opinion from USFWS will be adopted to protect potential foraging habitat of LLNB. The Conservation measures are shown in Attachment B. Because LLNB have not been documented in the

region, and because of the small number of livestock administered under this lease and the small acreage of the allotment, it is unlikely that continued grazing under the lease would have impacts on foraging resources of LLNB.

1.3.4 Desert Tortoise

The El Capitan allotment includes Category 3 Sonoran Desert Tortoise (SDT) habitat. Sonoran Desert Tortoise surveys were conducted in November 2014. Approximately 31% of the plant species encountered on the allotment during those surveys were known desert tortoise food plants. None of these known SDT food plants showed signs of excessive mortality due to drought or excessive utilization due to livestock or other herbivory. Evidence of SDT presence (including denning) was discovered in two areas. The presence of SDT on the allotment, coupled with the presence of SDT food plant species in relatively healthy phenological states, indicates that the allotment appears to be meeting SDT desired resource conditions at least to a degree.

1.3.5 Arizona Hedgehog Cactus

The USFWS describes the habitat for Arizona Hedgehog Cactus (AHC) as follows: plants are found on dacite or granite bedrock, open slopes, in narrow cracks between boulders, and in the understory of shrubs in the ecotone between Madrean Evergreen Woodland and Interior Chaparral. Elevation ranges from about 1,130-1,585 m (3,200-5,200 ft).

The BLM portion of the El Capitan allotment lies at elevations ranging from approximately 3,400-4,200 ft. which is within the known elevation range for the species. The USFWS project review tool, iPac, also identifies the project area as having potential for AHC. Additionally, the project area does contain elements of Madrean Woodland habitat, a habitat type identified by USFWS as associated with AHC. Considering these factors, it is concluded that there is some potential for AHC to occur on the El Capitan allotment. The 1984 recovery plan for AHC indicates that herbivory on AHC seedlings may be an issue, but it is noted that the impacts of livestock herbivory on the species are unknown. Other listed threats to the species include, illegal collecting, habitat modification (mining is specifically mentioned), and freeze loss.

If AHC occurs on the allotment, the impacts of livestock grazing are likely to be minimal or non-existent because the stocking rate is low (5 cattle) and concentrated livestock use appears primarily limited to areas surrounding the one livestock water source, and 2-3 salt block stations. As such, it is very unlikely that livestock would encounter individual AHC plants, and impacts therefore would be minimal or non-existent.

1.3.6 Fish Resources

There are no fish resources in this allotment due to lack of suitable aquatic habitat.

1.4 Special Management Areas

The following special areas or designations occur within the allotment:

Table 3 El Capitan Allotment Special Management Areas

	Yes	Name	Date Established	No
Wild & Scenic Rivers				X
Wilderness				X
Unique Waters				X
ACECs				X
Other				X

Public lands in the project area were reviewed for wilderness values during the Arizona Initial and

Intensive Wilderness inventories completed between 1978 and 1980. No lands were found to contain wilderness character during the initial review due to the presence of roads, and insufficient size of the public land areas, and no areas were identified for intensive inventory.

1.5 Recreation Resources

The project area is in the Tucson Extensive Recreation Management area, and recreation use is under custodial management. Public lands in the area provide opportunities for dispersed recreation primarily related to hunting and recreational off highway vehicle driving for pleasure and sightseeing. There are no developed recreation sites on the allotment. Overall recreational use is low in volume.

1.5.1 Access and Travel Management

Use of motorized vehicles on public lands in the allotment is limited to existing roads and trails that were in existence at the time the Safford RMP was approved in 1992.

The existing motor vehicle access routes on public lands were inventoried under an interagency route inventory project in 2002, and are depicted in the BLM's Ground Transportation Linear Feature inventory (GTLF) geodatabase. Access to the allotment is available from SR 77 via an existing primitive road (El Capitan Road) near milepost 157.5 which crosses private land before reaching public lands. Access to El Capitan Road is also available from Dripping Springs Road, a Gila County maintained road, and crosses State Land before reaching public land. An existing primitive road on BLM land near milepost 156.3 provides access to El Capitan Road and the allotment west of SR 77. The existing road segments across State Land and private land do not have easements or rights of way for legal public access.

The El Capitan Road has sections in poor condition due to lack of maintenance, and the roadway is intercepting surface runoff that is leading to erosion on the steeper grade sections. A primitive side road along El Capitan Road provides access to a well and water tank/trough in the bottom of Silver Creek canyon. Several existing routes along the El Capitan Road are in reclaiming condition and have not been receiving vehicle use. Vegetation is growing in the roadway, and drainage problems along the routes are causing soil erosion in spots.

1.6 Visual Resources

Public lands in the project area are under interim Visual Resource Management (VRM) Class III objectives. The objective of this class is to partially retain the existing character of the landscape. The level of change to the characteristic landscape can be moderate. Management activities may attract attention but should not dominate the view of the casual observer. Changes should repeat the basic elements found in the predominant natural features of the characteristic landscape. The landscape in the project area is visible in the foreground from SR 77, a scenic route between Globe and the town of Winkelman.

1.7 Cultural Resources

Issuance of the permit constitutes a Federal Undertaking under Section 106 of the National Historic Preservation Act (NHPA). The Area of Potential Effect (APE) has been determined to be the public lands within the grazing allotment.

In compliance with the BLM Cultural Resources Programmatic Agreement, the Arizona BLM-State Historic Preservation Officer Protocol, the 1980 Programmatic Memorandum of Agreement between the BLM, Advisory Council on Historic Preservation, and the National Conference of State Historic Preservation Officers regarding the Livestock Grazing and Range Improvement Program, and the BLM 8100 Manual series, the following actions have been taken to identify cultural resources located in the APE, evaluate the eligibility of cultural resources for listing in the National Register of Historic Places (NRHP), determine the effect of the undertaking on eligible cultural resources, and design mitigation measures or alternatives where appropriate.

The State Historic Preservation Officer (SHPO), the Advisory Council on Historic Preservation, and Indian tribes having historical ties to Arizona public lands were consulted during the preparations of the Upper Gila-San Simon Grazing Environmental Impact Statement (1978) and the Safford Resource Management Plan (1992 and 1994). Indian tribes were consulted at the beginning of the lease renewal process. There were no areas of Native American concern, Traditional Cultural Properties (TCP), or Sacred Sites identified during consultations.

Allotment case files, AMP files, range project files, Water Source Inventory files, and Cultural Resource files were reviewed to determine areas of livestock congregation and whether these areas have been previously inventoried for cultural resources. The records indicate that there is one area of livestock congregation that required an intensive field inventory, which was completed on January 17, 2002. No cultural properties¹ were identified in the area of livestock congregation but the following stipulations apply to the lease:

1. Any archaeological or historical artifacts or remains, or vertebrate fossils discovered during operations shall be left intact and undisturbed; all work in the area shall stop immediately and the Field Manager shall be notified immediately. Commencement of operations shall be allowed upon clearance by the Field Manager.
2. An additional cultural resource survey may be required in the event the project location is changed or additional surface disturbing operations are added to the project after the initial survey. Any such survey would have to be completed prior to commencement of operations.
3. If in connection with 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 (PL 101-601; Stat. 3048; 25 U.S.C. 3001) are discovered, the permittee/lessee shall stop operations in the immediate area of the discovery, protect the remains and objects, and immediately notify the Field manager of the discovery. The permittee/lessee shall continue to protect the immediate area of the discovery until notified by the Field Manager that operations may resume.

1.8 Riparian

There are no perennial or intermittent streams or springs or wetland areas within the El Capitan grazing allotment.

1.9 Xero-Riparian

Xero-riparian areas are areas immediately adjacent to desert washes. These areas do not meet the traditional definition of hydro or meso-riparian, but they do exhibit dense xero-riparian vegetation growth and a greater diversity of plant species including Mesquite as the dominant species with spotty Hackberry, Barberry, and Cat-claw Acacia.

Xero-riparian vegetative assemblages occur because greater water availability exists in desert washes, seasonally as surface flow, and yearlong as influenced by subsurface hydrologic recharge. Standard 2 does not include xero-riparian areas but xero-riparian will be included as one of the components of standard 3.

The livestock water located on the allotment lies near a xero-riparian area along the major north-south drainage that runs through the center of the allotment.

¹ Properties refer to archaeological sites, Traditional Cultural Properties, and Sacred Sites.

2 Grazing Management

BLM lands within the allotment comprise approximately 34% of the total livestock operation. There are approximately 15 head of cattle run on the State and private land. The only fence on the allotment is the boundary fence which surrounds the 1,991 acres of the allotment. The 5 head of cattle under the BLM grazing lease and the 15 head of cattle on the State and private land are managed together on the entire allotment.

An Allotment Management Plan (AMP) was completed in December 1980 and there are no current plans for a new AMP.

2.1 Mandatory Terms and Conditions for Permitted Use

The El Capitan allotment is classified as Perennial. Grazing occurs year-long. The Mandatory Terms and Conditions of the current lease are listed below:

Table 4 BLM Grazing Lease Term for El Capitan Allotment

Allotment Name	Allotment Number	Livestock Number	Livestock Kind	%PL	Type Use	AUMs
El Capitan	04504	5	Cattle	100	Active	60

See Attachment A for Standard Terms and Conditions of the current lease.

2.2 Selective Management Category

The Selective Management Category process was initiated in 1982 and was intended to focus staff and fiscal resources on priority allotments. The Selective Management categories of Improve (I), Maintain (M), and Custodial (C) were used to classify allotments based on resource conditions and opportunities for range improvement investment. In addition, the selective management process was also used for prioritization of monitoring field work. First priority was given to I allotments, second priority for M allotments and third priority for C allotments. In 2009, this policy was updated to ensure land health considerations are the primary basis for prioritizing the processing of grazing permits and leases and for monitoring the effectiveness of grazing management.

Custodial Grazing Management

The management category given to the El Capitan allotment is custodial (C). Custodial grazing management is applied to areas having acceptable range condition and a stable or improving trend. Under custodial management, BLM management actions are limited to licensing livestock use based on the AUMs available on the public lands. The individual ranch operator determines the grazing system (if any) to be used. BLM checks these grazing units to ensure that the utilization on public lands is not excessive, that range condition and trend are being maintained, and that applicable regulations are being followed. The BLM will work with the operator to adjust livestock numbers on the total grazing unit if utilization is found to be excessive or the range trend to be downward. Grazing units managed custodially include areas where the effects of livestock use on the public land resources are anticipated to be minimal. Selection of public land areas for custodial management is based on the following criteria:

1. Present range condition is not a factor.
2. Allotments have low resource production potential and are producing near their potential.
3. Limited resource-use conflict/controversy may exist.
4. Opportunities for positive economic return on public investment do not exist or are constrained by

- technological or economic factors.
5. Present management appears satisfactory or is the only logical practice under existing resource conditions.

3 Objectives

3.1 Relevant Planning and Environmental Documents

- Upper Gila-San Simon Grazing Environmental Impact Statement (EIS) and Record of Decision, 1978
- Safford District Resource Management Plan and EIS, Part 1 - 1992, Part II - 1994
- Gila District Livestock Grazing Program Biological Opinion, 2012

3.1.1 LUP/RMP Objectives

A land use plan conformance review and the appropriate level of NEPA will be completed prior to lease renewal.

Decisions concerning the management of livestock on public lands in the Safford District RMP Planning Area have been developed through the *Upper Gila San Simon Grazing Environmental Impact Statement* (BLM 1978). Through the above authorizing document, BLM will continue to issue grazing permits and licenses, implement, monitor and modify allotment management plans and increase or decrease grazing authorizations as determined through the allotment evaluation process. As necessary, National Environmental Policy Act compliance documents will be prepared prior to any action being implemented. The grazing decisions are incorporated into the Safford District RMP by reference.

- Upland vegetation on public lands within the Safford District RMP Planning Area will be managed for watershed protection², livestock use, reduction of non-point source pollution, Threatened and Endangered species protection, priority wildlife habitat, firewood and other incidental human uses. Best management practices and vegetation manipulation will be used to achieve desired plant community management objectives. Treatments may include various mechanical, chemical and prescribed fire methods. Safford District RMP p. 24 & 45
- The general objective of the UG-EIS is to permit livestock to use the harvestable surplus³ of palatable vegetation—a renewable resource—and thereby produce a usable food product. The proposed livestock management program is based on the multiple use management concept, which provides for the demands of various resource uses and minimizes the conflicts among those uses or activities. Although the various uses of the rangeland resources can be compatible, competition among uses requires constraints and mitigating measures to realize multiple-use resource management goals. The Specific objectives for each grazing unit are shown in appendix C. UG-EIS p. 1-6

3.1.2 Activity Level Plans Objectives

An Allotment Management Plan (AMP) was completed in December 1980 and there are no current plans for a new AMP.

The overall objectives of the AMP for the El Capitan allotment is to protect, manage, and regulate the use

² Watershed protection includes water quality and erosion control.

³ The harvestable surplus is defined as the amount of leaves and stems of a plant that can be used annually so that the plant can photosynthesize and manufacture energy to produce more leaves, stems, and seeds. Most rangeland grasses and forbs can have 40 percent to 50 percent of their leaves and stems removed every year and still remain healthy and productive.

of multiple resources of the allotment in a combination that will meet the needs of various resource users without impairment of the productivity of the rangeland watershed.

Specific Objectives:

1. Increase the livestock forage from 60 AUMs to 84 AUMs in 15 years.
2. Increase the percent calf-crop to 70%.
3. Increase calf weights by 50 pounds.

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 the Safford District land use plan in 1997.

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.

3.2 Key Area Objectives

3.2.1 Standard 1- Upland Sites

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

Soil erosion on the key area is appropriate to the ecological site on which it is located. Factors indicating conformance to Standard 1 include ground cover, litter, vegetative foliar cover, flow patterns, rills, and plant pedestalling in accordance with developed NRCS Ecological Site Guides and/or Reference Sheets. Deviations with only "slight" or "slight to moderate" from the appropriate site guide or reference are considered meeting the Standard. Departures of Moderate or greater will not meet the Standard except in cases where the departure is documented as showing an improvement of land health over what is expected on a reference site.

3.2.2 Standard 3- Desired Resource Condition Objectives

Objective: Productive, diverse upland and riparian-wetland plant communities exist and are maintained.

DPC objectives detail a site-specific plant community, which, when obtained, will assure rangeland health, State water quality standards, and habitat for endangered, threatened and sensitive species. Because DPC objectives are site-specific, Key Areas located on similar stratum may have difference DPC

objectives. This is due to differences in slope, elevation, aspect and rainfall factors, as well as other site potential limiting factors such as prior disturbance, rock outcroppings, or heavy gravel cover. The recommended palatable shrub and grass compositions will provide for adequate wildlife forage on the site for species such as Sonoran desert tortoise, mule deer, quail, and other non-game wildlife species. The foliar cover and bare ground cover class objectives will provide thermal and hiding cover for wildlife species and will prevent accelerated erosion on the sites.

The specific Key Area objective steps down from the resource objectives found in the Safford RMP (1992 and 1994) and the Upper Gila-San Simon Grazing EIS. The Key Area specific objective is designed to assess Public Land conformance to the Arizona Standards for Rangeland Health on the El Capitan allotment.

There is one Key Area on the El Capitan allotment.

Table 5 El Capitan Key Area and associated ecological site

Allotment	Key Area	Ecological Site
El Capitan	KA1	Limestone Hills 12-16"

The objective is designed to maintain or improve the biotic integrity of the Public Lands, provide for wildlife habitat, and provide for usable forage as limited by the potential of the ecological site. The objective and the rationale for the objective are given below.

3.2.2.1 Key Area specific DPC objective

El Capitan allotment Key Area 1:

Key Area 1, Limestone Hills 12-16" precipitation zone ecological site

- Maintain perennial grass composition of $\geq 1\%$
- Maintain annual grass and forb composition of $\geq 5\%$
- Maintain a palatable shrub composition of $\geq 10\%$
- Maintain vegetative foliar cover at $\geq 20\%$
- Maintain plant species diversity such that at least 31% of plant species are known desert tortoise forage plants in healthy condition.
- Maintain current vegetative diversity in the xero-riparian area.

Rationale:

This Key Area is located above on a northwest facing hillslope at an elevation of approximately 2568'.

NRCS has not developed an ecological site reference key for the Limestone Hills 12-16" pz ecological site. Maintaining a perennial grass composition of 1% or greater and an annual grass and forb composition of 5% or greater on this site would help Sonoran desert tortoise habitat requirements and is appropriate for the site based on its aspect and elevation. Palatable shrub composition of 10% or greater is appropriate for the site based on its aspect and elevation and complies with the expected ranges of shrub production in the Ecological Site Guide. Foliar cover is expected to be between 20% and 30% as per the Site Guide. Due to the steepness of the slope and the high percentage of gravel and rock cover, a vegetative foliar cover of 10% or greater should serve to prevent accelerated erosion.

4 Plant List

The current plant community on the El Capitan allotment, as seen on the Rangeland Health Evaluation March 5, 2013.

Table 6 Plant species present on the El Capitan Allotment

Common Name	Scientific Name
Jojoba	<i>Simmondsia chinensis</i>
Palo Verde	<i>Cercidium microphyllum</i>
Yucca	<i>Yucca sp.</i>
Prickly Pear	<i>Opuntia</i>
Snake Weed	<i>Gutierrezia sarothrae</i>
Burro Weed	<i>Ambrosia dumosa</i>
Brittle Bush	<i>Encelia farinosa</i>
White Thorn	<i>Acacia constricta</i>
Catclaw Mimosa	<i>Mimosa aculeatecarpa</i>
Velvet Mesquite	<i>Prosopis velutina</i>
Fairy Duster	<i>Calliandra eriophylla</i>
Juniper	<i>Juniperus sp.</i>
Ocotillo	<i>Fouquieria splendens</i>
Desert Christmas Cactus	<i>Opuntia leptocaulis</i>
Staghorn Cholla	<i>Opuntia versicolor</i>
Saguaro	<i>Carnegiea gigantea</i>
Paper Flower	<i>Psilotrophe tagentina</i>
Blue Dick	<i>Dichelostemma capitatum</i>
Trailing Four O'clock	<i>Allionia incarnate</i>
Spidergrass	<i>Aristida ternipes</i>
Bush Muhly	<i>Muhlenbergia porteri</i>
Slim Tridens	<i>Tridens muticus</i>
Fluffgrass	<i>Erioneuron pulchellum</i>
Three Awn Species	<i>Aristida sp.</i>

5 Inventory and Monitoring Data

5.1 Monitoring Protocols

5.1.1 Upland Health Monitoring Protocols

Monitoring protocols used at the upland Key Areas on the allotment include a variety of study methods. Compliance with Standard One is completed using the Interpreting Indicators of Rangeland Health study method, as described in BLM Technical Reference 1734-6 Version 4 (2005). This study method is supplemented with quantitative data collected in the methods described below.

Compliance with Standard Three is completed using a variety of upland study methods. Primarily, Line intercept is used for vegetative monitoring.

Line intercept is the amount of cover a plant occupies along the course of a line. Line intercept is expressed as percent cover along the length of a line (tape). The percent cover for a plant species is an average of cover over all of the lines used in the study. Composition values can also be derived by dividing the total species cover by the total plant cover. Composition is also an average amongst all lines used in the study.

Two 100 foot tapes are used (one for baseline, one for intercept) for line intercept. Ground rules established prior to collection are:

- Species Cover was used. Measurements are taken in inches for each individual species that

- intercept the line.
- If there is a more than 3 inch break in cover, break out into separate measurements. If less than 3 inches assume a closed canopy.
- Line intercept intervals along the baseline are based on a measurement calculated to allow for the 6 feet belt transect on either side of the line.

Utilization data was collected at each Key Area using the Key Species method. This method is described in BLM Technical Reference 1734-3, "Utilization Studies and Residual Measurements".

6 Management Evaluation and Summary of Studies Data

6.1 Actual Use

Actual Use reporting is required for the El Capitan allotment. The current grazing lessee has turned in Actual Use reports yearly, beginning in 2010. Prior to this, actual use is based on billed use.

Number of Active Livestock	Kind	Grazing Begin	Period End	%PL	AUMs
5	Cattle	3/1/2010	2/28/2011	100	60
5	Cattle	3/1/2011	2/28/2012	100	60
5	Cattle	3/1/2012	2/28/2013	100	60

6.2 Key Area Data

The El Capitan Rangeland Health Evaluations (RHE) were completed in 2004 and 2013 by a trained Interdisciplinary Team made up of various specialists from the BLM Tucson Field Office. In accordance with Bureau policy and regulations, any applicable monitoring data was examined and evaluated in order to determine progress in meeting Arizona Standards for Rangeland Health and other land use plan objectives. In addition, the El Capitan allotment file was reviewed to determine if any new information, issues or concerns have been identified. All monitoring and RHE data is available at the Tucson Field Office.

Table 7 Monitoring methods, frequency, and type

Method	Yes	Date	No
Rangeland Health Evaluation	X	9/3/2004 and 3/5/2013	
Pace Frequency			X
Dry Weight Rank			X
Point Cover			X
Line Intercept	X	3/17/2010 and 3/12/2013	
Photos	X	9/3/2004, 3/17/2010, 3/5/2013 and 3/12/2013	
Age/Form Class	X	3/17/2010 and 3/12/2013	
Actual Use	X	2010, 2011, 2012	
Climate	X		

The site where the RHE was performed represents one ecological site which occurs over the majority of the allotment. The evaluation method involves observing a set of physical and biological attributes at each site to determine 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. A final rangeland health determination is made by summing all of the attributes.

Methods for the upland health evaluation are described in "Interpreting Indicators of Rangeland Health, Technical Reference 1734-6, 2000".

Summary results from Rangeland Health Evaluation

September 3, 2004

Rangeland Health Attribute	Departure From Ecological Site Description				
	Extreme	Moderate to Extreme	Moderate	Slight to Moderate	None to Slight
Soil/Site Stability	0	0	1	3	6
Hydrologic Function	0	0	2	2	7
Biotic Integrity	0	0	3	4	1

Per *Technical Reference 1734-6, 2000*, overall ratings Soil/Site Stability are an addition of the number of observations for indicators 1-9 and 11. Overall ratings for Hydrologic Function are an addition of the number of observations for indicators 1-5, 7-11, and 14. Overall ratings for Biotic Integrity are an addition of the number of observations for indicators 9, and 11-17.

The Rangeland Health Evaluation conducted on 9/3/2004 indicated that there is a "None to Slight Departure" rating from the reference state for soil and hydrologic functions. Therefore Soil/Site Stability is within normal parameters, Hydrologic Function is maintained at expected levels, and the Biotic Integrity is within the normal range of variability expected for this site.

March 5, 2013

Rangeland Health Attribute	Departure From Ecological Site Description				
	Extreme	Moderate to Extreme	Moderate	Slight to Moderate	None to Slight
Soil/Site Stability	0	0	0	1	9
Hydrologic Function	0	0	0	2	8
Biotic Integrity	0	1	0	3	5

Per *Technical Reference 1734-6, 2005*, overall ratings Soil/Site Stability are an addition of the number of observations for indicators 1-9 and 11. Overall ratings for Hydrologic Function are an addition of the number of observations for indicators 1-5, 8-11, and 14. Overall ratings for Biotic Integrity are an addition of the number of observations for indicators 8-9, and 11-17.

The Rangeland Health Evaluation conducted on 3/5/2013 indicated that there is a "None to Slight Departure" from the reference state for soil and hydrologic functions. No rills, pedestals, terracettes or gullies were observed in the evaluation area. There were also no wind scoured, blow out or depositional areas found. The ground is well armored with rocks, pebbles and litter which protects against erosion. Therefore Soil/Site Stability is within normal parameters and Hydrologic Function is maintained at expected levels.

Overall the Biotic Integrity shows a "None to Slight Departure" from the reference state which means that the soil and erosion features are intact and appropriate for the site. The litter amount and plant mortality

are also what is expected for the site. There were no invasive plant species observed on the allotment but snakeweed and prickly pear are slightly encroaching onto the site. The reproductive capability of the perennial plants is slightly reduced due to recent climatic conditions. The Biotic Integrity shows a shift in the functional/structural groups. Historic land use practices have possibly caused the shift of composition of the vegetation communities over many years. While the composition of the vegetation communities exhibits a “Moderate to Extreme” departure from the reference condition the site as a whole maintains watershed function.

Vegetation monitoring was conducted by the UA Cooperative Extension and BLM range staff on March 17, 2010 and March 12, 2013.

7 Conclusions

Summary of Standard Achievement or Non-achievement for the Key Area:

Allotment	Key Area	Standard One	Standard Three
El Capitan	KA 1	Achieved	Achieved

Upland Health Conclusions are based on the analysis of the current monitoring data for the key area. The Standard Three analysis is based on the Line Intercept study method.

Key Area 1

Standard 1: Upland Site Achieves Standard

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

Rangeland health evaluations were conducted by an interdisciplinary team on September 3, 2004 and March 5, 2013. There are no concerns about soils that should be considered before lease issuance. Upland soils exhibit infiltration, permeability, and erosion rates typical for this soil type, climate and land form. There is sufficient cover and diversity to maintain habitat and watershed values on the public lands on this allotment. As there are no concerns that should be considered before lease issuance, El Capitan allotment is meeting Standard 1.

Standard 2: Riparian – no hydro- riparian or meso-riparian on the allotment. Therefore, Standard 2 is not applicable.

Standard 3: Desired Plant Community Achieves Standard.

Key Area 1, Limestone Hills 12-16” precipitation zone ecological site

Objective	Meeting objective or not
Maintain perennial grass composition of $\geq 1\%$	Achieved
Maintain annual grass and forb composition of $\geq 5\%$	Not Measured ⁴
Maintain a palatable shrub composition of $\geq 10\%$	Achieved
Maintain vegetative foliar cover at $\geq 20\%$	Achieved
Maintain plant species diversity such that at least 31% of plant species are known desert tortoise forage plants in healthy condition	Achieved
Maintain current vegetative diversity in the xero-riparian area	Not Measured ⁵

⁴ BLM only monitored perennial grasses and forbs. Annual grass and annual forbs were not measured.

⁵ BLM only monitored the vegetation in the uplands. Vegetation in xero-riparian areas was not measured.

Rationale:

The perennial grass component on this site is being met with a perennial grass composition of 1%. Maintaining a perennial grass composition of 1% on this site works toward Sonoran desert tortoise habitat requirements and is appropriate for the site based on its aspect, elevation, and its current state based on the NRCS state and transition modelling. The total palatable shrub composition on this site is 56% which meets and exceeds the palatable shrub objective. The vegetative foliar cover is being met at this site with a foliar cover of 37%. The current plant species diversity on the allotment meets desert tortoise forage needs therefore that objective is achieved.

Standard 3 is being met on the El Capitan allotment. Extended drought has decreased diversity and condition of the plant community but it is adequate to sustain the wildlife species that occur in the area.

8 Recommended Management Actions

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

Terms:

Allotment Name	Allotment Number	Livestock Number	Livestock Kind	%PL	Type Use	AUMs
El Capitan	04504	5	Cattle	100	Active	60

Standard terms and conditions (Attachment A). Plus the additional conditions are recommended:

1. Any archaeological or historical artifacts or remains, or vertebrate fossils discovered during operations shall be left intact and undisturbed; all work in the area shall stop immediately and the Field Manager shall be notified immediately. Commencement of operations shall be allowed upon clearance by the Field Manager.
2. An additional cultural resource survey may be required in the event the project location is changed or additional surface disturbing operations are added to the project after the initial survey. Any such survey would have to be completed prior to commencement of operations.
3. If in connection with 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 (PL 101-601; 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 Field manager of the discovery. The lessee shall continue to protect the immediate area of the discovery until notified by the Field Manager that operations may resume.
4. Actual use information⁶ 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.

In addition to the attached wildlife conservation measures (Attachment B) from the Gila District Grazing BO will also be adhered and incorporated in the alternatives, as appropriate, in the lease renewal.

⁶ The grazing lessee is required to report the actual number of cattle run on their grazing allotment throughout the grazing year for their BLM grazing lease.

8.1 Management Recommendations

1. Continue with current livestock grazing management practices. No change is necessary based on the results of the Rangeland Health Evaluation. The public lands are currently achieving land health standards.
2. Opportunities to address road condition will occur through development of Cooperative Range Improvement Agreements.

8.2 Rangeland Monitoring

1. Collect monitoring data once every 5 years to establish trend and to determine if changes in management practices are necessary to meet resource condition objectives.
2. Continue to collect Actual Use data annually.
3. Collect utilization data at least in the two years prior to each lease renewal.

9 List of Preparers

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