United States Department of the Interior
Bureau of Land Management
Safford Field Office
Safford, AZ

Environmental Assessment
DOI-BLM-AZ-G010-2013-0020-EA

Black Rock Permit Renewal

Key Area Transect

Table of Contents 2
1.0 Introduction 3
1.1 Background 3
1.2 Purpose and Need 4
1.3 Decision to be Made 5
1.4 Conformance with Land Use Plan 5
1.4.1 RMP Decision number and narrative: 5
1.5 Relationship to Other Plans, Statutes, and Regulations 7
1.6 Scoping 8
1.6.1 Issues Identified: 8
2.0 Proposed action and Alternatives 8
2.1 Design Features Common to the Proposed Action and the No Action Alternative 8
2.2 Proposed Action 9
2.2.1 Special Stipulations 11
2.2.1.1 Cultural 11
2.3 Alternative 1 (No Action Alternative) 11
2.4 Alternative 2 (No Grazing Alternative) 11
2.5 Alternatives Considered but Eliminated From Detailed Analysis 11
3.0 Affected Environment 11
3.1 Resources Brought Forward for Analysis 15
3.1.1 Wildlife 15
3.1.2 Range 17
3.1.3 Soil 17
4.0 Environmental Consequences 17
4.1 Environmental Consequences of the Proposed Action 17
4.1.1 Wildlife 17
4.1.2 Range 18
4.1.3 Soils 19
4.2 Environmental Consequences of Alternative 1 (No Action Alternative): 19
4.2.1 Wildlife 19
4.2.2 Range 19
4.2.3 Soil 20
4.3 Environmental Consequences of Alternative 2 (No Grazing Alternative) 20

4.3.1 Wildlife 20
4.3.2 Range 20
4.3.3 Soils 20
4.4 Cumulative Impacts 20
4.5 Past, Present and Foreseeable Future 21
4.6 Cumulative Impacts of the Proposed Action and the Alternatives 22
4.7 Proposed Action 22
4.8 Alternative 1 (No Action Alternative) 22
4.9 Alternative 2 (No Grazing Alternative) 22
5.0 Consultation and Coordination 23
5.1 Compliance and Monitoring 23
5.2 Persons/Agencies Consulted: 23
6.0 Literature Cited 24
7.0 Appendix 1: Arizona Standards & Guides Evaluation 25

1.0 Introduction

This Environmental Assessment (EA) has been prepared to disclose and analyze the environmental consequences of the proposed grazing permit renewal for the Black Rock Allotment #46300 (Figure 1). The action culminates an evaluation conducted on the allotment under the Arizona Bureau of Land Management (BLM) *Standards for Rangeland Health and Guidelines for Grazing Management* (S&Gs) (Appendix 1). In addition, this EA determines if current grazing management practices would maintain desirable conditions and continue to allow improvement of public land resources, or whether changes in grazing management for the allotments are necessary. This EA is intended to evaluate the findings of the S&G evaluations as they relate to vegetation conditions and resource values in the allotments. This is done in an effort to balance demands placed on the resources by various authorized uses within the allotments. It was determined by the Interdisciplinary Assessment Team (IAT), during the assessment process, that resource conditions on the Black Rock Allotment are either meeting Standards or not currently achieving the applicable Standards for Rangeland Health. This EA is intended to be used with the Black Rock Allotment Evaluation & Rangeland Health Analysis (Appendix A).

1.1 Background

The Black Rock Allotment #46300 has not been previously evaluated through the Standards and Guideline process. On 12/02/2004, the Lone Star permit was issued under the Appropriations Act with the following language: “In accordance with Sec. 325, Title III, H.R. 2691, Department of the Interior and related agencies Appropriations Act, 2004 (P.L. 108-108), which was enacted

on November 10, 2003, this grazing permit is renewed under Section 402 of the Federal Land Policy and Management Act of 1976, as amended (43 U.S.C. 1752), Title III of the Bankhead-Jones Farm Tenant Act (7 U.S.C. 1010 ET SEQ.), or, if applicable, Section 510 of the California Desert Protection Act (16 U.S.C. 410AAA-50). In accordance with Public Law 108-108," the terms and conditions contained in the expired or transferred permit shall continue in effect under the renewed permit until such time as the Secretary of the Interior completes processing of this permit in compliance with all applicable laws and regulations, at which time this permit or lease may be cancelled, suspended, modified, in whole or part, to meet the requirements of such applicable laws and regulations."

On August 23, 2012, a proposed decision to renew the Black Rock permit based on a previous Environmental Assessment was protested. As a result of that protest, additional review of the proposed management was completed.

1.2 Purpose and Need

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

The need for this action is established by the Taylor Grazing Act (TGA), the Federal Land Policy and Management Act (FLPMA), and the Upper Gila-San Simon Grazing Environmental Impact Statement (BLM 1978) decisions were carried forward into the Safford Resource Management Plan (RMP) (1991) and the Statewide Land Use Plan Amendment for Implementation of Arizona Standards for Rangeland Health and Guidelines for Grazing Administration (1997) which require that the BLM respond to applications to fully process and renew permits to graze livestock on public land. In detail, the analysis of the actions identified in the applications for grazing permit renewals and the alternative actions is needed because:

- BLM Arizona adopted the Arizona Standards for Rangeland Health (Land Health Standards) and Guidelines for Livestock Grazing Management in all Land Use Plans (Arizona S&Gs) in 1997 (Appendix A). Land Health Standards and Guidelines for Grazing Administration was also amended into the Safford RMP. Land Health Standards for Rangelands should be achieving or making significant progress towards achieving the standards and to provide for proper nutrient cycling, hydrologic cycling, and energy flow. Guidelines direct the selection of grazing management practices and, where appropriate, livestock facilities to promote significant progress toward, or the attainment and maintenance of, the standards. This EA is intended to be used with the Final Black Rock Allotment Evaluation & Rangeland Health Analysis.

- The SFO RMP identifies resource management objectives and management actions that establish guidance for managing a broad spectrum of land uses and allocations for public lands in the Safford Field Office. The SFO RMP allocated public lands within the Black Rock Allotment, as available for domestic livestock grazing. Where consistent with the goals and objectives of the RMP and Land Health Standards, allocation of forage for livestock use and the issuance of grazing permits to qualified applicants are provided for

by the Taylor Grazing Act (TGA) and the Federal Land Policy and Management Act (FLPMA).

1.3 Decision to be Made

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

1.4 Conformance with Land Use Plan

The proposed action is in conformance with the Safford Resource Management Plan (RMP) (1991) and the Statewide Land Use Plan Amendment for Implementation of Arizona Standards for Rangeland Health and Guidelines for Grazing Administration 1997. Arizona's Standards and Guides were developed through a collaborative process involving the Arizona Resource Advisory Council and the Bureau of Land Management State Standards and Guidelines team. The Secretary of the Interior approved the Standards and Guidelines in April 1997. The Decision Record, signed by the BLM Arizona State Director (April 1997) provided for full implementation of the Standards and Guides in all Arizona BLM Land Use Plans.

Implementation level decisions from the Upper Gila-San Simon Grazing Environmental Impact Statement (UG) (BLM 1978) were carried forward into the RMP. Through the above authorizing documents, 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 processes. As necessary, National Environmental Policy Act compliance documents will be prepared prior to any action being implemented. The grazing decisions are incorporated into this Resource Management Plan/Environmental Impact Statement by reference and are common to all alternatives. Management direction pertaining to grazing for this allotment can be found in the Upper Gila-San Simon Grazing Environmental Impact Statement (BLM 1978), Appendix C, p. A-27. All other discipline management objectives pertaining to this allotment can be found in the RMP.

1.4.1 <u>RMP Decision number and narrative:</u>

CL19 Cultural resources stipulations will be included on all grazing leases and permits. UG-EIS page 4-2.

GM12 The general objective of the proposed action is to permit livestock to use the harvestable surplus 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 Page 1-6.

GM17 Deviation from the management system could be allowed for circumstances beyond the licensee's control, such as severe drought, but such deviations would require the District Manager's prior authorization. UG-EIS, Pages 1-8.

GM32 Proper stocking is an essential principle of range management, which should precede or coincide with the initiation of any grazing management system. With stocking rates in balance with the proposed grazing capacities, utilization of key forage species in the key areas would average about 40 percent over a period of years. At a given stocking rate during years of high forage production (e.g. above normal rainfall) utilization in the use pasture might be as low as 20 percent. During years of low forage production utilization could be as high as 60 percent. UG-EIS Page 1-9.

VM02 Upland vegetation on public lands within the Safford District will be managed for watershed protection, 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. RMP page 24 & 45. Partial ROD I page 10.

VM03 Ecological Site Inventories will be combined with the desired plant community concept to develop management objectives for activity plans as they are written or revised. RMP page 45.

VM04 Public lands will be managed to preserve and enhance the occurrences of special status species and to achieve the eventual delisting of threatened and endangered species. RMP page 45.

VM07 Land treatments (vegetation manipulation) will be used to decrease invading woody plants and increase grasses and forbs for; wildlife and livestock forage and watershed condition. Treatment areas will be identified in activity plans. Treatments may include various artificial (mechanical, chemical, or prescribed fire) methods. RMP page 45.

WF02 District management will focus on priority species and their associated habitats to maintain or enhance population levels. Threatened and endangered, proposed, candidate, State-listed and other special status species will be managed to enhance or maintain district population levels or in accordance with established inter/intra-agency management plans. District management efforts will be directed towards the enhancement of biological diversity. UG-EIS ROD Part I page 6.

WF14 Manage habitat for optimum wildlife populations, based on ecological conditions, taking into consideration local, yearly climatic variations. BLM will follow Arizona Game and Fish Department's five-year strategic plans for the various species and will assist the Department in accomplishing its goals for the various species. RMP page 34.

1/ RMP - Safford District Resource Management Plan
2/ UG-EIS - Upper Gila - San Simon Grazing Environmental Statement

1.5 Relationship to Other Plans, Statutes, and Regulations

Grazing permit renewals are provided for in 43 CFR 4100 where the objectives of the regulations are "....to promote healthy, sustainable rangeland ecosystems; to accelerate restoration and improvement of public rangelands to properly functioning conditions; to promote the orderly use, improvement and development of the public lands; to establish efficient and effective administration of grazing of public rangelands; and to provide for the sustainability of the western livestock industry and communities that are dependent upon productive, healthy public rangelands" (43 CFR 4100.0-2). The proposed action would comply with 43 CFR 4100.0-8 which states, in part, "The authorized officer shall manage livestock grazing on public lands under the principle of multiple use and sustained yield, and in accordance with applicable land use plans." The proposed action also complies with 43 CFR 4130.2(a) which states, in part, "Grazing permits or leases shall be issued to qualified applicants to authorize use on the public lands and other lands under the administration of the Bureau of Land Management that are designated as available for livestock grazing through land use plans". The proposed action is consistent with the Fundamentals of Rangeland Health (43 CFR 4180.1) and Arizona's Standards and Guidelines, which were developed through a collaborative process involving the Arizona Resource Advisory Council and the BLM State Standards and Guidelines team. The Secretary of the Interior approved the Standards and Guidelines in April 1997. These standards and guidelines address watersheds, ecological condition, water quality, and habitat for special status species. These resources are addressed later in this document. The proposed action conforms to the President's National Energy Policy and would not have adverse energy impacts. The proposed action would not deny energy projects, withdraw lands, close roads, or in any other way deny or limit access to mineral materials to support energy actions. The regulations at 43 CFR Part 10 specifically require land use authorizations, including leases and permits, to include a requirement for the holder of the authorization to notify the appropriate Federal official immediately upon the discovery of human remains and other items covered by the Native American Graves Protection and Repatriation Act (see 43 CFR 10.4(g); the actual requirement for persons to notify the Federal agency official and protect the discovery is in 43 CFR 10.4(b) and (c). Executive Order 13186 requires the BLM and other Federal agencies to work with the USFWS to provide protection for migratory birds.

The proposed action would comply with the following laws and/or agency regulations, and are consistent with applicable Federal, state and local laws, regulations, and plans to the maximum extent possible.

- Taylor Grazing Act (TGA) of 1934
- Federal Land Policy and Management Act (FLPMA) of 1976 (43 U.S.C. 1701 et seq.)
- Public Rangelands Improvement Act (PRIA) of 1978

• Endangered Species Act (ESA) of 1973, as amended
• 43 CFR 4100 Grazing Administration - Exclusive of Alaska
• Arizona Water Quality Standards, Revised Statute Title 49, Chapter II
• Section 106 of the National Historic Preservation Act of 1966, as amended
• Native American Graves Protection and Repatriation Act of 1990 (25 U.S.C. 3001-3013; 104
Stat. 3048-3058)
• National Environmental Policy Act (NEPA) of 1969
• Executive Order 13186 – Responsibilities of Federal Agencies to Protect Migratory Birds

1.6 Scoping

Scope of Issues: The CEQ defines scoping as "…an early and open process for determining the scope of issues to be addressed and for identifying significant issues related to a proposed action" (40 CFR 1501.7). Scoping is an important underpinning of the NEPA process that encourages public input and helps focus the environmental impact analysis on relevant issues. Issues were identified by Safford Field Office Interdisciplinary Team, the grazing permittee, and interested publics. Distribution of scoping information typically heralds the beginning of the public component of the NEPA process. To encourage public participation, BLM mailed scoping information regarding the Vanar permit renewal proposal to interested individuals, organizations, and agencies on June 12, 2012.

Key Issues: Several environmental issues concerning the proposed project were identified by the NEPA interdisciplinary team members and from the public comments during scoping.

1.6.1 Issues Identified:

- Wildlife: Potential impacts to terrestrial wildlife species
- Range: Shrub Increase past Desired Resource Condition
- Range: Historic Heavy Use on portions of the BLM Sandhill Pasture
- Soils: Impacts from grazing
- Cultural: Impacts on sites from livestock grazing

2.0 Proposed Action and Alternatives

2.1 Design Features Common to the Proposed Action and the No Action Alternative

Annual Meetings: An annual meeting between BLM and the grazing permittee would be conducted to discuss previous years monitoring and the coming year's grazing schedule on an as needed basis. Emergency situations would be handled on a case by case basis and would involve consultation with the above parties. The final decisions concerning the annual meeting recommendations and moves outside the scheduled use periods would be made by the authorized officer.

Flexibility: Due to the annual variability in forage production, which is influenced by yearly variability in climate, it may be necessary to move livestock earlier or later than shown on the planned grazing rotation schedule. The permittee would contact the BLM for authorization prior to moving livestock outside of the schedule and would keep records of when livestock were actually moved. The permittee would also provide actual use information to the BLM each year. This grazing schedule is a template and pasture rest, deferment, and rotation schedule is subject to change year to year as mentioned above, based on climatic conditions as well as monitoring data from each year. When drought is declared by the authorized officer, permittees are contacted and educated on consequences of drought on forage production. The pemittee is also reminded of the upper limit of utilization. Permittees are: 1) encouraged to voluntarily reduce numbers, 2) if drought continues, permittees can be required to remove all cattle under a voluntary agreement or full force and effect decision, and 3) if necessary, livestock can be spread throughout the allotment in order to avoid over utilization of forage species. All decisions should be made after monitoring studies are performed.

Black Rock Allotment: The Black Rock Allotment #46300 has not been previously evaluated through the Standards and Guideline process. On 01/28/2010, the Black Rock permit was issued under the Appropriations Act with the following language: "In accordance with Sec. 325, Title III, H.R. 2691, Department of the Interior and related agencies Appropriations Act, 2004 (P.L. 108-108), which was enacted on November 10, 2003, this grazing permit is renewed under Section 402 of the Federal Land Policy and Management Act of 1976, as amended (43 U.S.C. 1752), Title III of the Bankhead-Jones Farm Tenant Act (7 U.S.C. 1010 ET SEQ.), or, if applicable, Section 510 of the California Desert Protection Act (16 U.S.C. 410AAA-50). In accordance with Public Law 108-108, the terms and conditions contained in the expired or transferred permit shall continue in effect under the renewed permit until such time as the Secretary of the Interior completes processing of this permit in compliance with all applicable laws and regulations, at which time this permit or lease may be cancelled, suspended, modified, in whole or part, to meet the requirements of such applicable laws and regulations."

2.2 Proposed Action

The proposed action is to renew the grazing permit for the Black Rock allotment for a period of 10 years as authorized by the grazing regulations at §4130.2(d) with the following Terms and Conditions (Table 1). The grazing schedule in table 1 is the permitted level and season of use that will be analyzed for the proposed action impacts.

Table 1: Mandatory Terms and Conditions: Authorized Use

Allotment	Livestock Numbers	Kind	Grazing Period Begin-End	Percent Public Land	Type Use	AUMs
4630	66	Cattle	04/01-10/31	85	Active	395

Annual livestock use would be permitted under the Basic Schedule in table 2. Additional terms and conditions would be added to the permit, which state: If the Upper Forest pasture (USFS) is

returned to the rotation schedule, cattle numbers will be fully permitted to original amount of 395 AUMs (66 head).

Currently, the Lower Forest pasture (USFS) is used from November 1st- April 1 and then cattle are moved to the Sandhill Pasture (BLM) from April 1- October 31st. Under this agreement with the permittee, Forest Service and BLM up to 20 head of cattle graze from 4/01-10/31 in the BLM Sandhill Pasture every year. The initial destocking rate came in 2005 in a time of drought and family hardships. The reduction in numbers to 20 head is due to the Upper Forest pasture not being used which equates to 1/3 of the forage across the ranch. Once the Upper Forest pasture is stocked, the AMP allows the ranch to operate as a whole with one herd and uses a three pasture rotation system that allows rest on the Sandhill pasture during the growing season every other year. If the Upper Forest pasture (USFS) is returned to the rotation schedule, cattle numbers will be fully permitted to 395 AUMs (66 head) in the Sandhills pasture for seven months every other year.

Table 2: Basic Schedule

Allotment	**Livestock number**	**Kind**	**Grazing Period Begin - End**	**%PL**	**Type Use**	**AUMS**
46300	20	Cattle	04/01 10/31	85	ACTIVE	120
46300	46	Cattle	04/01 10/31	85	NONUSE	275

The following other terms and conditions will be carried forward on the renewed permit:

- Grazing use will be permitted under the Basic Schedule at 20 head until the Upper Forest Pasture is used in the rotation as described in the Allotment Management Plan where cattle numbers will be fully permitted to the authorized amount of 395 AUMs (66 head).

Table 3: Current Grazing Rotation Schedule for the Black Rock Allotment.

Year	Pasture	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	Upper Forest (USFS)												
1	Lower Forest (USFS)	X	X	X	X	X						X	X
1	Sandhill						X	X	X	X	X		

2.2.1 Special Stipulations

2.2.1.1 Cultural

- Visitation to any cultural site on BLM Land needs to be approved by the Cultural Staff of Safford Field Office two weeks prior to visitation.

- A number of cultural sites exist on the allotment which requires members of the Arizona Site Steward Program to monitor. Site Stewards or Cultural Staff will make an effort to contact the permittee one day prior to visitation, either by phone or email.

2.3 Alternative 1 (No Action Alternative)

Under this alternative the permit would be updated to reflect the current on the ground livestock grazing practices. The rotations system would include the BLM pasture and the Lower Forest Pasture. The BLM pasture would be used every year from June to October. The permitted stocking rate would be 20 head or 120 AUMs. This permit would be issued for ten years with standard conditions.

2.4 Alternative 2 (No Grazing Alternative)

This alternative would eliminate livestock grazing from the federal land managed by the BLM on the Black Rock allotment. The permit would be canceled for the Black Rock allotment. Livestock grazing would not be authorized. BLM would initiate the process in accordance with 43 CFR parts 4100 and amend the RMP. Approximately seven miles of fence would be installed to exclude livestock from BLM managed lands. Fence maintenance would be the responsibility of BLM.

2.5 Alternatives Considered but Eliminated From Detailed Analysis

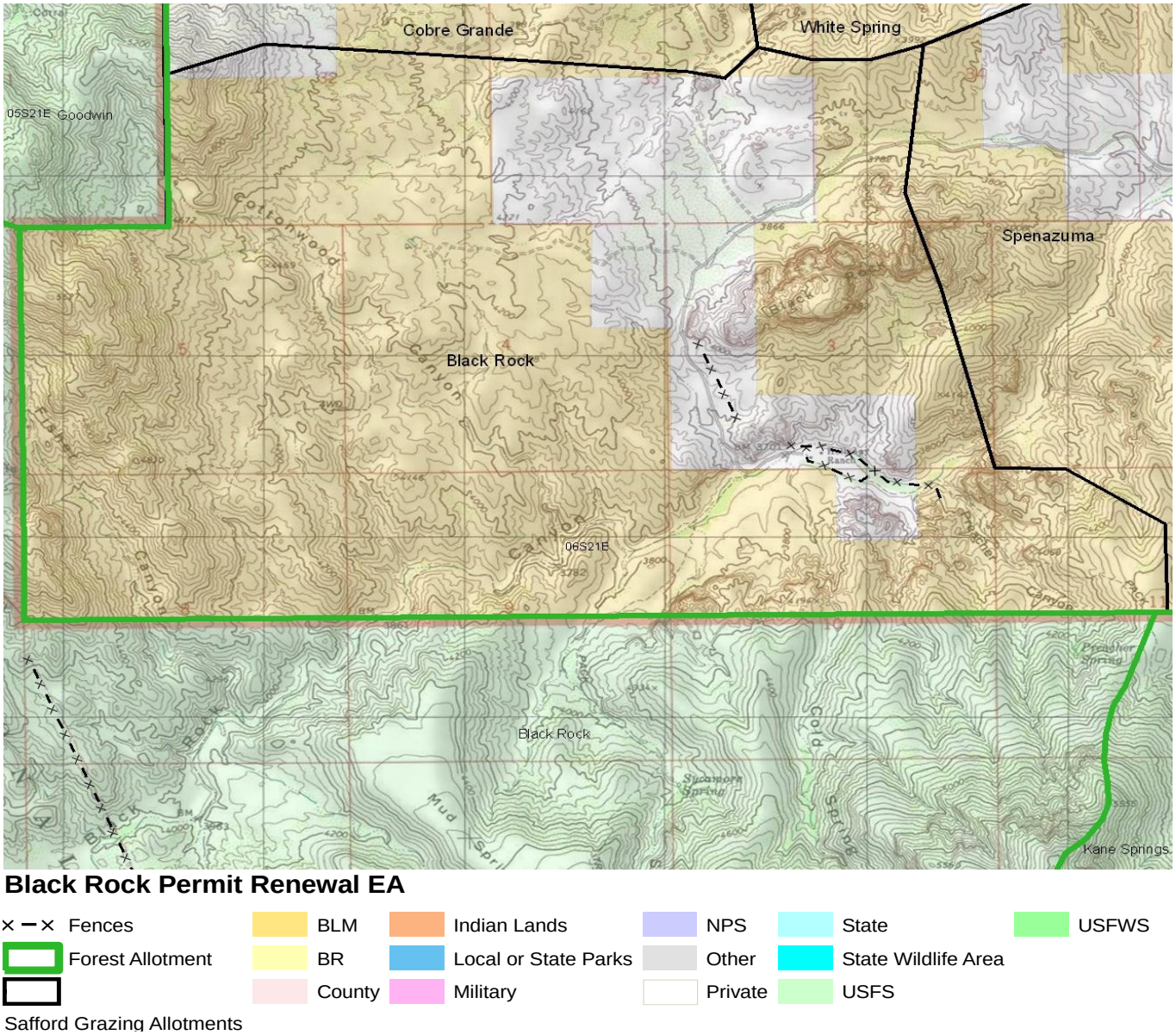
No other alternatives were identified during scoping that would respond to the purpose and need and could be practically implemented on the Black Rock Allotment.

3.0 Affected Environment

The Black Rock Allotment is located approximately 20 miles southwest of Fort Thomas. It is bounded by the Santa Teresa Mountain Range on the south and west. The Spenazuma Allotment is located to the east and the White Springs allotment to the north. The topography of the allotment consists of steep canyons that mainly drain into Black Rock Wash. The northern and eastern portions consist of large basins and moderately steep rolling hills. The permittee also holds the permit for the adjacent allotments, Upper and Lower Forest on the Coronado National Forest. The BLM and Forest Allotments are run in conjunction with one another. Approximately 1,500 acres of the Black Rock Allotment is in Santa Teresa Wilderness Area.

For a description of the affected environment please refer to the Black Rock Allotment Standards and Guidelines Evaluation (BLM 2013).

Figure 1. Black Rock Allotment



The BLM is required to consider many authorities when evaluating a Federal action. Those elements of the human environment that are subject to the requirements specified in statutes, regulations, or executive orders, and must be considered in all EAs, have been considered by BLM resource specialists to determine whether they would be potentially affected by the proposed action. These elements are identified in Table 4, along with the rationale for the determination on potential effects. If any element was determined to be potentially impacted, it was carried forward for detailed analysis in this EA; if an element is not present or would not be affected, it was not carried forward for analysis. Table 4 also contains other resources/concerns that have been considered in this EA. As with the elements of the human environment, if these

resources were determined to be potentially affected, they were carried forward for detailed analysis in this document.

Table 4. Summary evaluation of elements/resources of the human environment.

Resource	Determination*	Affected Environment (Rationale for Determination)
* NP = Not present in the area that will be impacted by the proposed action. NI = Present, but not affected to a degree that would mean detailed analysis is required. PI = Present with potential for impact; analyzed in detail in the EA.		
Air Quality	NI	The proposed action and the alternative would not measurably impact Air Quality standards. Moving livestock and traveling on unimproved roads during allotment activities could produce small amounts of fugitive dust in the short term, but this would cause negligible and localized impacts on air quality.
Areas of Critical Environmental Concern	NP	The project area is not located within or near an Area of Critical Environmental Concern.
Cultural Resources	NP	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 November 25, 2008. Because no historic properties were identified in areas of livestock congregation, no mitigation is recommended as a BLM responsibility or as a term or condition of the permit, to protect cultural values identified above. A Cultural Resource Compliance Documentation Record (Project No. AZ-410-09-004) was completed in 2009 by Safford Field Office Archaeologist. Impacts to cultural resources from livestock grazing are usually associated with development projects such as fences, salt grounds, watering areas, and loafing areas. It is therefore imperative that each site specific project, prior to ground disturbance have a survey conducted to locate and evaluate sites on a case-by case basis. There is no range projects associated with the proposed action or alternatives. The proposed action or the alternatives will have no effect on surface features or historic properties as none were documented on the allotment during the Cultural Inventory.
Environmental Justice	NP	No disproportionately high or adverse health or environmental effects would impact low income or minority populations as a result of the proposed action or the alternatives.
Farmlands (Prime or Unique)	NP	There are no prime or unique farmlands within or near the project area.
Floodplains	NP	The proposed action area is not within a floodplain as defined by the Executive Order 11988 (1977).
Invasive and Nonnative Species	NP	There are currently no known invasive species or noxious weeds within the project area.
Native American Religious Concerns	NP	During consultations with American Indian Tribes who claim cultural affiliation to southern Arizona, no Native American religious concerns have been identified in relation to actions proposed in this EA.

Resource	Determination*	Affected Environment (Rationale for Determination)
Threatened or Endangered Terrestrial Species	NP	The current FWS county list was reviewed and a determination made on each species. No threatened or endangered species or designated critical habitat occurs in the project area. There will be no effect on listed species.
Wastes (hazardous or solid)	NP	This critical element will not be affected by the proposed action or alternatives there are no hazardous or solid wastes within the project area and no direct, indirect, or cumulative impacts on this critical element would occur.
Water Quality and Quantity (drinking/ground)	NP	This critical element will not be affected by the proposed action or alternatives because there are no known water quality issue on the allotment.
Wetlands/Riparian Zones	NP	This critical element would not be affect by the proposed action or the alternatives as there are no wetlands/riparian zones within the project area
Wild and Scenic Rivers	NP	There are no Wild and Scenic River segments classified as designated, eligible, or suitable within the project area.
Wilderness	NI	Approximately 1/3 of the Black Rock allotment is within the North Santa Teresa Wilderness Area. There is no management plan for the North Santa Teresa Wilderness Area. National wilderness goals include providing long term protection and preservation of wilderness characteristics, managing wilderness areas in a manner that will maintain the natural condition and wilderness values while allowing visitor use and enjoyment, employing the use of minimum tool and regulation principals, and managing acceptable non-conforming uses with emphasis on maintaining the wilderness character. The national wilderness goals are being met. Continuance of livestock grazing as planned in the proposed action or alternative 1 would not affect the wilderness. The elimination of grazing would not change the management of the Santa Teresa Wilderness.
Range	PI	The Black Rock Allotment is managed under a CRMP. Permit renewal is required to allow continued livestock use on this allotment; this issue is therefore analyzed in detail later in this EA.
Wildlife (including sensitive species and migratory birds)	PI	A change in wildlife habitat, with regard to water distribution, would occur dependent on the alternative implemented. In addition spatial competition between wildlife and livestock would be altered dependent on the alternative. Wildlife habitat will remain shrub dominated with only minor changes over time under any of the alternatives. The area will continue to support the habitat and wildlife that currently exist. The Bureau Sensitive Species list for Arizona as well as the Arizona Game and Fish Heritage Data Management System were reviewed for sensitive species potentially impacted by the action. From this review American peregrine falcon, lowland leopard frog and golden eagle were considered further. Potential impacts to these species are considered minor to nonexistent and are not analyzed further. Impacts to individuals, nest or eggs of migratory birds were considered and determined not to be of consequence in the implementation of any of the alternatives, therefore impacts were not carry forward.

Resource	Determination*	Affected Environment (Rationale for Determination)
Soils	PI	Some soil disturbance in relation to grazing occurs on the allotment. This issue is therefore analyzed in detail later in this EA.
T&E Fish/Fisheries	NP	Neither the proposed action or the alternatives will adversely affect threatened, endangered, or sensitive fish species (TES) or their proposed or designated critical habitat.
Visual Resources	NI	Safford Resource Management Plan (RMP) has designated public lands within the Black Rock Allotment which are inside the North Santa Teresa Wilderness Area as Visual Resource Managment (VRM) Class I. The objective of this class is to preserve the existing character of the landscape. This class provides for natural ecological changes; it does not, however, preclude very limited management activity. The level of change to the characteristic landscape should be very low and must not attract attention. The remaining area of the allotment is in the (VRM) Class IV: The objective of this class is to provide for management activities that require major modification of the existing character of the landscape. The level of change to the characteristic landscape can be high. These management activities may dominate the view and be the major focus of viewer attention. Every attempt should be made, however, to minimize the impact of these activities through careful location, minimal disturbance and repeating the basic elements. Continuing livestock grazing as planned in the proposed action or alternatives would not affect visual resources.
Socioeconomic Values	NI	Economic impacts to the permittee could occur dependent on the alternative implemented. This impact would not be large enough to be discernible in the local communities. Implementation of the proposed action or either of the two alternatives will not impact socioeconomic to level that analysis is warranted
Wilderness Characteristics	NP	The proposed action is within the wilderness characteristics unit 21. 6,590 acres of unit 21 were incorporated into the North Santa Teresa Wilderness. The remaining acres do not meet the 5,000 size requirements for wilderness characteristics. Therefore, the proposed action or alternatives would not have an effect on Wilderness Characteristics.

3.1 Resources Brought Forward for Analysis

3.1.1 Wildlife

The Black Rock Allotment has a diversity of geological forms, elevations, slopes, and vegetation. Directly resulting in a diversity of wildlife species from large mammals such as black bear, mule deer, white tailed deer, javelina and desert bighorn sheep to golden eagles, Gambel's quail, Gila monsters and desert box turtles to name only a few. As diverse as the habitat is, it could be better. Shrub encroachment has reached a point in some places on the allotment that it is altering the ability of some species to move through and utilizes areas. Management emphasis in

this area is on large game animals specifically mule deer, white tailed deer, javelina and desert bighorn sheep.

Deer

Habitat degradation from excessive herbivore and drought can alter and /or eliminate cover and food needed by mule deer and other wildlife species. Perennial bunch grasses and low shrubs are required fawning habitat (*i.e.*, cover) for mule deer and offer concealment from predators. Adult animals also require cover for hiding and resting. Hiding or resting locations are selected to provide concealment, a view of the surrounding terrain, and easy access to escape routes.

Deer feed primarily on browse and forbs. Forbs are highly preferred and in spring and summer can comprise 20% to 40% of the annual diet; whereas browse can constitute between 40% to 70% of the diet in fall and winter. Mule deer are selective feeders and will choose the most succulent and nutritious shoots and grasses on which to feed. Diet largely depends on the ecoregion in which they live (Heffelfinger, *et al.*, 2006), in more productive habitats, such as woodland areas, a greater variety of food will be eaten than in desert areas.

Grazing at light to moderate levels has little impact on mule deer since browse and forbs constitute 90% of their diet with grass important only in early spring. Cattle consume primarily grass, with forbs and browse as secondary, but seasonally important components. Overgrazing results in livestock consuming more browse, which exacerbates the level and intensity of competition with mule deer. To reduce this impact livestock should not be allowed to browse more than 50% of the annual leaders growth (by weight), which equates to approximately 50% of the leaders browsed (Holechek and Galt, 2000).

Javelina

Like mule deer, javelina, inhabit a variety of different habitat types throughout Arizona and are quite adaptable. Javelina are opportunistic feeders and require a diverse plant community comprised of flowers, fruits, nuts, grasses, forbs, shrubs, vines, succulents, and trees for survival. Prickly pear cactus comprises a major portion of their diet. A diverse and intact plant community not only provides forage, but much needed shelter and cover. Sonoran desert scrub and desert grassland habitat are two of the most important biotic communities in Arizona for javelina and comprise approximately 67% of their range. Javelinas do not inhabit pure grasslands, but grasslands that have been invaded by shrubs and cacti. Riparian forests are also important and are used quite frequently by javelina as sources of water, food, and cover (Day 1985).

As species that evolved in the tropics javalina will make use of dense shrub areas as long as they have access to a variety of forage and a water source.

Desert Bighorn Sheep

Over the last 30 years desert bighorn sheep have expanded out of the Aravaipa Canyon area into the Santa Teresa Mountain Range. They are now relatively common within the Black Rock Allotment. The Aravaipa Canyon population of desert bighorn sheep will likely continue to expand with the Santa Teresa Mountains as a corridor to other mountain ranges. Desert bighorn have similar forage needs as mule deer, favoring forbs and shrubs. Bighorns tend to do best when the vegetation is diverse but not high enough to obscure their vision. Bighorn in general can

suffer from forage and spatial competition from both cattle and other wildlife such as mule deer. By nature bighorn segregate themselves from other large species by occupying open steep rocky slopes. Because of this, spatial and forage competition is most likely to occur during periods of excessive forage use and drought (Valdez and Krausman, 1999).

3.1.2 Range

Currently, the Lower Forest pasture (USFS) is used from November 1st- April 1 and then cattle are moved to the Sandhill Pasture (BLM) from April 1- October 31st. Under this agreement with the permittee, Forest Service and BLM up to 20 head of cattle graze from 4/01-10/31 in the BLM Sandhill Pasture every year. The initial voluntary destocking came in 2005 in a time of drought and family hardships. The reduction in numbers to 20 head has been kept by agreement due to the Upper Forest pasture not being used. The use of the Upper Forest Pasture is at the discretion of the Forest Service. The Upper Forest Pasture equates to 1/3 of the forage across the ranch. The agreed upon reduction will remain as long as the Upper Forest Pasture is not incorporated into the ranching operation. At such time the Upper Pasture is incorporated back into the operation, the CRMP between the BLM and the Forest will again be applicable and enforced. Once the Upper Forest pasture is stocked, the current AMP allows the ranch to operate as a whole with one herd and a three pasture rotation system that allows rest on the Sandhill pasture during the growing season every other year. If the Upper Forest pasture (USFS) is returned to the rotation schedule, cattle numbers will be fully permitted to 395 AUMs (66 head) in the Sandhills pasture for seven months every other year.

3.1.3 Soil

The Black Rock Allotment is in MLRA 41-3 and is largely comprised of the ecological site Granitic Hills (12-16 inches/per year). For a complete description of the soils on the Black Rock Allotment refer to Gila-Duncan Area, Parts of Graham and Greenlee Counties, Arizona soil survey (NRCS 1981). All of the soils found on this allotment are classified as arid and semiarid. Soil condition evaluations were accomplished by field inspections during the rangeland health assessments. Most of the soils are structurally intact and demonstrate good resistance to erosion. An area of concern had more than desired bare ground, showing signs of rills and pedestalling. With grazing rotation and rest every other growing season this area is expect to progress towards meeting range health standards.

4.0 Environmental Consequences

4.1 Environmental Consequences of the Proposed Action

Critical elements that were analyzed for potential impacts from the proposed action and associated design features and carried forward for analysis include:

4.1.1 Wildlife

The Black Rock Allotment provides good mule deer habitat around the edges of the shrub patches. Mule deer prefer more open areas next to shrub patches they can use for escape cover.

In some areas of the Black Rock Allotment the shrub density is too thick for mule deer. White tail deer tend to prefer denser cover areas thereby generally restricting themselves to higher elevations than mule deer. The habitat for white tail is good on the Black Rock Allotment, but larger very dense patches of shrub will limit white tail use and movement.

It is expected that under the proposed action livestock grazing will be light to moderate though all pastures and would not reach the level where forage completion between deer and livestock would occur. With pasture rotation deer can spatially separate themselves from livestock. Since all pastures will be in use livestock watering facilities will be avalible to deer.

As species that evolved in the tropics javalina will make use of dense shrub areas as long as they have access to a variety of forage and a water source. Impact of the proposed action on javalina would be similar to that for deer.

Bighorn have moved into the Black Rock Allotment along the highest elevations where rock outcropping provide escape cover. Bighorn forage around the edges of these rock exposures and will not typically move into or through dense shrub vegetation. There is little overlap of bighorn sheep and livestock on the allotment and therefore, there would be minimal impacts from the proposed action.

Flexibility in livestock grazing use including the implementation of the drought policy will in general benefit wildlife. Implementation of a grazing rotation will result in pastures without livestock present during portions of the year; this will reduce interactions between wildlife and livestock. In general the quality of the wildlife habitat would become somewhat better over the long term with small incremental increases in herbaceous vegetation, but the potential is limited by the dominance of shrubs.

4.1.2 Range

The proposed action would affect the livestock grazing permittee on the Black Rock allotment by renewing the grazing permit. This would provide some degree of stability for the permittee's livestock operation. Permit renewal would also meet the goals of the Safford Resource Management Plan and the Upper Gila San Simon Grazing ES related to livestock grazing on public lands "The general objective of the proposed action is to permit livestock to use the harvestable surplus of palatable vegetation–a renewable resource–and thereby produce a usable food product" for an additional ten years. Residual vegetation and increased plant vigor should reduce the need for destocking during drought years. The ability to utilize public rangeland would lower feed costs for the permittee.

The proposed action is for a grazing rotation to be implemented where the BLM Sandhill pasture would receive growing season rest every other year. This will continue to improve cattle distribution, forage utilization, and range health with scheduled rest during the growing season.

There will be a temporary reduction to the proposed stocking level and rotation of livestock grazing authorized for the permittee. This is due to the Upper Forest pasture currently not being used according to the AMP. The reduced use and new rotation schedule will allow the allotment

to continue to make progress towards meeting the Arizona Standards and Guidelines for Rangeland Health.

In addition, livestock grazing within this allotment would be in keeping with applicable laws and regulations and with the Standards for Rangeland Health and Guidelines for Grazing Management.

4.1.3 Soils

Livestock grazing can increase soil compaction if trails are created, at watering sources, and at mineral supplement areas. However, properly managed livestock grazing is designed to minimize these impacts to rangeland resources, including soils. Stocking levels and rotation systems suggested under the proposed action would maintain and/or improve ecological conditions, which would help maintain soil resources. In addition, use would lead to increased dead standing biomass and litter due to reduced utilization; improving soil fertility, infiltration, and nutrient cycling. Soil quality and health is likely to improve through implementation of the proposed action.

4.2 Environmental Consequences of Alternative 1 (No Action Alternative):

4.2.1 Wildlife

In the short term impacts to wildlife would be similar to the proposed action except under Alternative 1 there would be greater competition for space between livestock and large wildlife species, in the lower Forest pasture and the Sandhill Pasture. Continuous growing season use in the Sandhill pasture will negatively impact herbaceous vegetation over time. In the long term, localized competition for forage may become evident and cover for a variety of wildlife species would be diminished. Due to the forage and spatial competition, it is likely that larger species of wildlife will start avoiding areas of livestock concentration particularly in the Sandhill Pasture.

4.2.2 Range

A continued reduction in the stocking rate may allow a decrease in livestock utilization and a subsequent change in vegetative cover, structure, and/or species. The current low utilization (20%) would likely continue with a reduction in the stocking rate, and would provide a sustainable forage base for livestock grazing consistent with other multiple uses. Additional monitoring of vegetation attributes would be required to assess a reduction in the stocking rate.

A reduction of the stocking rate, in concert with the renewal of the grazing lease, allows the grazing program to continue on the Black Rock Allotment in accordance with the multiple-use and sustainability mandates of the BLM.

4.2.3 Soil

Soil surface disturbance would remain at their current levels; areas without adequate vegetative cover would remain the same with the potential of increased or static levels of bare ground. Areas of water flow patterns and evidence of pedestals would remain the same or likely increase.

4.3 Environmental Consequences of Alternative 2 (No Grazing Alternative)

4.3.1 Wildlife

Removal of livestock from the allotment would eliminate any possibility of space and forage completion with large species of wildlife. Removal of livestock would likely not alter the vegetative component of wildlife habitat on the allotment. It would remain shrub dominated. The permittees would no longer have maintenance responsibility for livestock waters. To lessen the impact, the Bureau would have to determine which of the livestock waters are of importance to wildlife and either maintain them or construct alternative waters sources.

4.3.2 Range

Under Alternative 2, seven miles of fence would be constructed to prevent livestock from private lands from entering the Black Rock allotment. Boundary fences would be maintained by the BLM, which could lead to increased livestock trespass due to limited staff and funds. Other range improvements like watering facilities (dirt tanks, drinkers and pipelines) would be assessed by the BLM and a determination made on whether to maintain them or construct alternative watering sources for wildlife.

4.3.3 Soils

Under Alternative 2, soil processes, such as rainfall infiltration, increased soil moisture, and decreased soil compaction would be improved. The small areas where annual plant species dominate are expected to remain static. Healthy, vigorous perennial understory plants would increase in the long term, but annual species would increase in the short term, until vigorous root systems of the perennial plants increase, reducing annual species establishment.

4.4 Cumulative Impacts

The Council on Environmental Quality (CEQ) regulations that implement NEPA defines a cumulative impact as: “The impact on the environment which results from the incremental impact of the action when added to other past, present, or reasonably foreseeable future actions.” Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time (40 CFR 1508.7).

Life of the proposed action and its alternatives is ten years; this time frame is considered to be most appropriate for considering the incremental effect of actions in the foreseeable future. Many of the past and present actions are expected to persist through this time frame, though the relative intensity of these actions could vary.

The following critical elements, ACEC's, Floodplains, Invasive and Nonnative Species, Cultural Resources, Native American Religious Concerns, Prime Farmland, Wastes, VRM, Water Quality, Wetlands and Riparian Zones, Wild and Scenic Rivers, Wilderness Characteristics, and T&E Fish/Fisheries will have no cumulative impacts from the proposed action or alternatives as they are not found within or adjacent to the Black Rock allotment or the visual class is not impacted by the proposed action or alternatives.

4.5 Past, Present and Foreseeable Future

Range: Past, present, and reasonably foreseeable actions within the analysis area would continue to influence range resources, watershed conditions, and trends. Livestock grazing in the region has evolved and changed considerably since it began in the late 1800's, and is one factor that has created the current environment. At the turn of the century, large herds of livestock grazed on unreserved public domain in uncontrolled open range. Eventually, the range was stocked beyond its capacity, causing changes in plant, soil, and water relationships. Some speculate that the changes were permanent and irreversible, turning plant communities from grass and herbaceous species to brush and trees. Protective vegetative cover was reduced, and more runoff brought erosion, rills, and gullies.

In response to these problems, livestock grazing reform began in 1934 with the passage of the Taylor Grazing Act. Subsequent laws, regulations, and policy changes have resulted in adjustments in livestock numbers, season-of-use changes, and other management changes.

Mining: Historically, the Black Rock allotment was part of the San Carlos Mineral Strip and was mined for gold and silver. There is still evidence of past mining activity. There are no active mines or applications for mining in the area.

Recreation: Vehicle access to the Black Rock allotment is limited because roads pass through the San Carlos Indian Reservation. Recreationists are required to have a permit to cross reservation land. The private proper owners also have locked gates at their respective property boundary limiting access further. Dispersed recreation that does occur within the assessment area includes, wildlife viewing, hunting, hiking, off-highway vehicle use and camping. Recreation is not expected to increase in this area without a change in access.

Wilderness: A large portion of the allotment is within the North Santa Teresa Wilderness. There is currently no wilderness plan for the North Santa Teresa Wilderness. Grazing is an allowed use within the wilderness boundary. Range improvements are allowed to be maintained if they were present before the area become a wilderness.

4.6 Cumulative Impacts of the Proposed Action and the Alternatives

4.7 Proposed Action

Given the past experiences with livestock impacts on public land resources, as well as the cumulative impacts that could occur on the larger ecosystem from grazing on various public and private lands in the region, management of livestock grazing is an important factor in ensuring the protection of public land resources for wildlife and their habitat. Proper management of rangelands can provide wildlife and livestock with available forage while assuring range health standards are being met. There should be a gradual improvement in ecological condition over an extended period of time in areas of concern under the proposed action. The incremental impact of livestock grazing within the allotment when added to the other land use activities in the drainage would not adversely affect resources under the proposed action.

Surface impacts from the proposed action when combined with cumulative impacts from past, present, and reasonably foreseeable future actions would be minor.

4.8 Alternative 1 (No Action Alternative)

Under Alternative 1, the impacts of livestock grazing during the summer growing season would be concentrated on public land in the Sandhill Pasture. Continues growing season use is known to decrease palatable herbaceous vegetation over time. Even at the moderate stocking rate of 20 head the impact to vegetation would reduce the health of plants in localized areas of the Pasture. Impacts would become long term (greater than 10 years) and additive to cumulative impacts if vegetation loss results in reduced protection of the soil and increased soil erosion. Soil loss would have long term impacts to vegetation and in turn long term impacts to the forage and cover components of wildlife habitat.

4.9 Alternative 2 (No Grazing Alternative)

Current impacts resulting from grazing, recreation, and other activities on private and forest lands, would continue. Any reductions in authorized AUMs on BLM lands would increase grazing pressure on private land, which is adjacent to federal land and could cause impacts to federal lands managed by the Forest Service if they did not reduce their permitted AUMs. Cumulative effects under the no grazing alternative could potentially include gradual increases in perennial plant diversity, plant cover, vigor, and production over the long term. Annual species would increase in the short term and then decrease in the long term as the health, diversity, vigor, and production of the perennial vegetation increases. Soil stability would improve along with increased rainfall infiltration, increased soil moisture, and decreased soil compaction.

5.0 Consultation and Coordination

5.1 Compliance and Monitoring

Dry weight ranking (DWR) studies will be used to measure attainment of the key area desired plant community (DPC) objectives. In addition, pace frequency studies will be used at each key area to detect changes of individual species which determines a trend or change in vegetation composition. Pace frequency and DWR will be completed on each key area every 3-6 years. DWR and pace frequency study methods are described in Sampling Vegetation Attributes, Interagency Technical Reference 1734-4 (1996).

5.2 Persons/Agencies Consulted:

Safford Field Office:
Archaeologist, Dan McGrew
Wildlife Biologist, Tim Goodman
Fisheries Biologist, Heidi Blasius
Geologist, Larry Thrasher
Realty Specialist, Roberta Lopez
Hydrologist, Bill Wells
Rangeland Management Specialist, Gwen Dominguez

Black Rock Permittee
BLM Interdisciplinary Team
Natural Resource Conservation Service

6.0 Literature Cited

Day, G. I. 1985. Javelina. Arizona Game and Fish Department, Phoenix, AZ.

Heffelfinger, J.R, C. Brewer, C. H. Alcala-Galvan, B. Hale, D. L. Weybright, B. Wakeling, L.H. Carpenter, N. L. Dodd. 2006. Habitat guidelines for mule deer, southwest deserts ecoregion. Mule Deer Working Group. Western Association of Fish and Wildlife Agencies.

Holechek, J.L., Thomas, M.G., Galt, D., & Molinar, F. (2000). Conservative and moderate stocking effects on Chihuahuan Desert range forage. Proceedings of the Western Section of the American *Society of Animal Science*, 51:257–262. USDI. Bureau of Land Management.

Valdez, R.; Krausman, P.R. 1999. Description, distribution, and abundance of mountain sheep in North America. *In*: R. Valdez and P. R. Krausman, eds. Mountain sheep of North America. Tucson, AZ: University of Arizona Press: 1-21.

7.0 Appendix 1: Arizona Standards & Guides Evaluation

Table of Contents

1.0 Introduction 26
2.0 General Description of Evaluation Area 27
3.0 Grazing Use 28
3.1 Grazing History 28
3.2 Current Management 29
3.3 Actual Use 29
3.4 Terms and Conditions of the Current Permit 29
4.0 Evaluation Area Profile 30
4.1 Land Status 30
4.2 Soils and Ecological Sites 30
4.3 Climate 32
4.4 Wildlife Resources/Special Status Species 32
4.5 Special Management Areas 36
4.6 Recreation Resources 37
4.7 Visual Resources 37
4.8 Cultural Resources 37
4.9 Noxious Weeds/Invasive Species 38
4.10 Inventory and Monitoring Data and Methodology 38
4.11 Key Areas/Key Species 39
4.12 Land Health Allotment Objectives 40
5.0 Management Evaluation 40
5.1 Upland Health Assessment 40
6.0 Conclusions 41
7.0 Recommendations 43
8.0 Consultation 44
9.0 Selected Management Action 44
Appendix 1 46
Literature Cited 50

Arizona Standards and Guidelines Evaluation
Black Rock Allotment, #46300

1.0 Introduction

The Allotment Assessment was conducted in accordance with the direction set forth in the Washington Office Instruction Memorandum No. 98-91 and 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 improve the health of the public rangelands. The 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. 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 Bureau of Land Management (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, on the other hand, do 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 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 livestock grazing. 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).

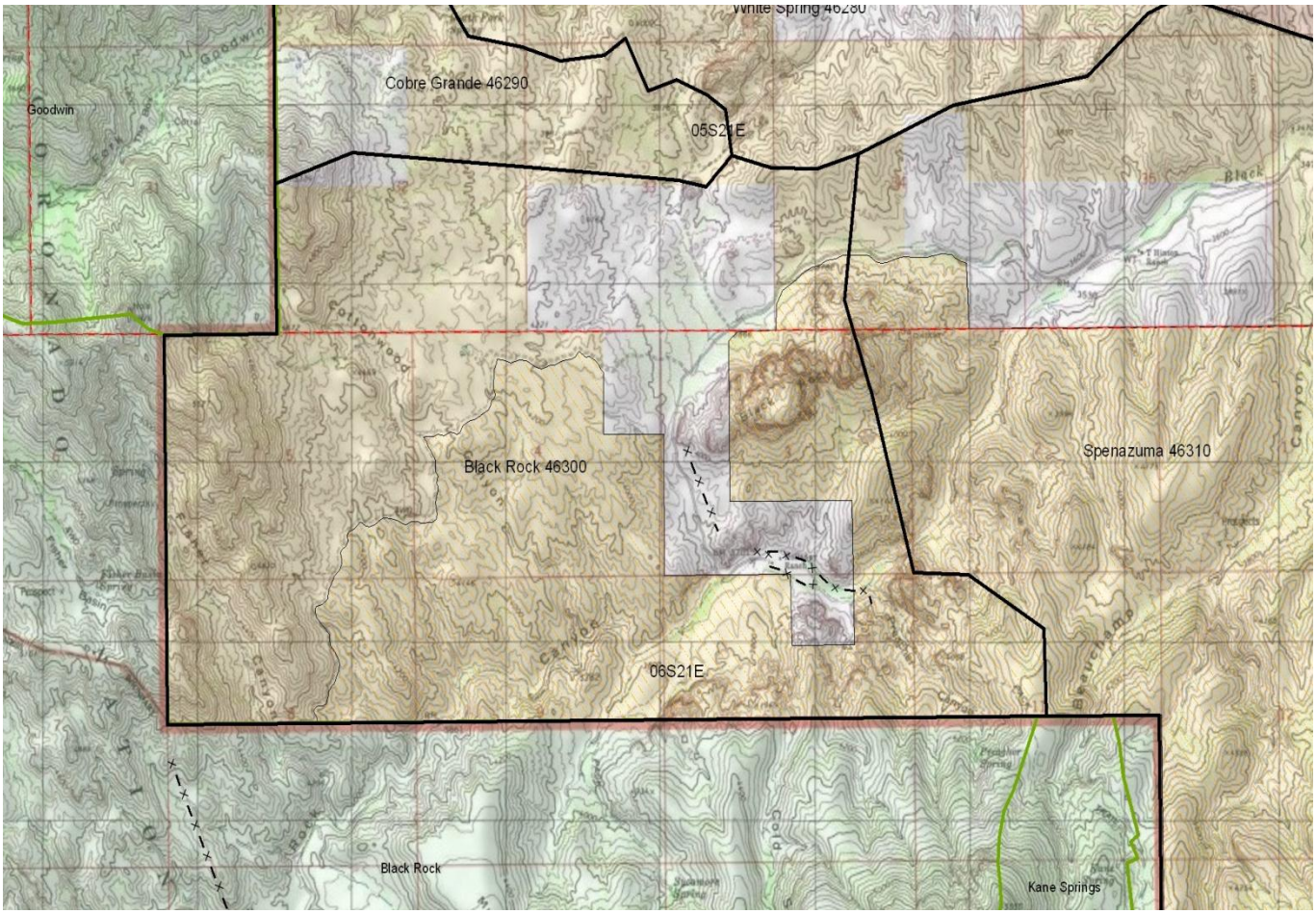
With the commitment of BLM to ecosystem and interdisciplinary resource management, the standards for rangeland health as developed in this current process will be incorporated into management goals and objectives. The standards and guidelines for rangeland health for grazing

administration, however, are not the only considerations in resolving resource issues (Arizona Standards for Rangeland Health and Guidelines for Grazing Administration, 1997).

2.0 General Description of Evaluation Area

The Black Rock Allotment is located approximately 20 miles southwest of Fort Thomas (Figure 1). It is bounded by the Santa Teresa Mountain Range on the south and west. The Spenazuma Allotment to the east and the White Springs allotment to the north. The topography of the allotment consists of steep canyons that mainly drain into Black Rock Wash. The northern and eastern portions consist of large basins and moderately steep rolling hills. The permittee also holds the permit for an adjacent Coronado National Forest allotment. For this evaluation the BLM allotment is synonymous with the Sand Hills Pasture, with the forest lands identified as the Upper Forest Pasture and Lower Forest Pasture. The BLM and Forest Allotments are run in conjunction with one another. This evaluation is limited to the BLM portion (Sandhills Pasture) of the ranch. The Bureau has no administrative authority on national forest lands. Approximately 1,500 acres of the Black Rock Allotment is in the Bureaus' Santa Teresa Wilderness Area.

Figure 1. General location and land status of the Black Rock Allotment.



Map 1: Black Rock Allotment

Safford Grazing Allotments	BLM	Indian Lands	NPS	State	USFWS
	BR	Local or State Parks	Other	State Wildlife Area	
	County	Military	Private	USFS	

3.0 Grazing Use

3.1 Grazing History

Cattle use levels in 1972 were 44 Cattle Yearlong (CYL's) or 528 AUM's. In the Upper Gila-San Simon Grazing ES a proposed decision was issued in 1979 that would become effective in 1980 altering the permit to 35 Cattle at 76% of public land which equals 320 AUM's yearlong. With the agreed upon allotment management plan (AMP) a decision was issued in 1980, in which the permit would be issued at 66 head yearlong at 26% public land for 206 AUM's because of the addition of acreage from the Forest Service allotments. In 1982 through an agreement with Forest, the AMP was updated, with winter use only on the Upper Pasture on the forest. Due to the Forest Serive designating the Upper Forest Pasture, winter use only, the BLM

modified it seasonal use on the Sandhills Pasture. In 1985 a land exchange with Arizona State Land Department added 320 acres and 60 AUM's cattle to the permit and an increase in the percent public land. After the land exchange the permit was issued at 66 Cattle with the season of use at 4/1-10/31 and 85% public land 395 AUM's.

3.2 Current Management

Currently, the Lower Forest pasture (USFS) is used from November 1st- April 1 and then cattle are moved to the Sandhill Pasture (BLM) from April 1- October 31st. Under this agreement with the permittee, Forest Service and BLM up to 20 head of cattle graze from 4/01-10/31 in the BLM Sandhill Pasture every year. The initial voluntary destocking came in 2005 in a time of drought and family hardships. The reduction in numbers to 20 head has been kept by agreement due to the Upper Forest pasture not being used. The use of the Upper Forest Pasture is at the discretion of the Forest Service. The Upper Forest Pasture equates to 1/3 of the forage across the ranch. The agreed upon reduction will remain as long as the Upper Forest Pasture is not incorporated into the ranching operation. At such time the Upper Pasture is incorporated back into the operation, the CRMP between the BLM and the Forest will again be applicable and enforced. Once the Upper Forest pasture is stocked, the current AMP allows the ranch to operate as a whole with one herd and a three pasture rotation system that allows rest on the Sandhill pasture during the growing season every other year. If the Upper Forest pasture (USFS) is returned to the rotation schedule, cattle numbers will be fully permitted to 395 AUMs (66 head) in the Sandhills pasture for seven months every other year.

3.3 Actual Use

Actual use data for livestock was determined through Actual Use Reports, Form 4130-5, when available from past billing statements. Refer to Table 1 for actual use from the previous 10-years.

Table 1. Actual Use on the Black Rock Allotment.

	Preference (number)	**2011**	**2010**	**2009**	**2008**	**2007**	**2006**	**2005**	**2004**	**2003**	**2002**
Black Rock	**66**	18*	18*	18*	13*	6*	6*	33	66	0**	66

*Voluntary Reduction- Partial Non-Use
** Non- Use per AMP

3.4 Terms and Conditions of the Current Permit *

Allotment	Livestock number	Kind	Grazing Period Every Other Year Begin	End	Type %PL	Use	AUMS
46300	66	Cattle	4/01	10/31	85	Active	395

*Set as if the Upper Forest Pasture is incorporated into the operation

4.0 Evaluation Area Profile

4.1 Land Status

The Black Rock allotment is identified as an Improve (I) category allotment. By definition, I allotments are where current livestock grazing management or level of use on public land is, or is expected to be, a significant causal factor in the non-achievement of land health standards, or where a change in mandatory terms and conditions in the grazing authorization is or may be necessary. Refer to Table 1 for land acreage in the Black Rock allotment.

Table 1. Land Status and Acreage of the Black Rock Allotment.

Type of Acreage	Acres	Sections
Public Land	2,861	4.5
Private Land	633	.99
Forest Service	14, 804	23.13
Total	**18,298**	**28.62**

4.2 Soils and Ecological Sites

Soils:

Soil descriptions and characteristics where taken directly from the soil survey. For a complete description of the soils on the Black Rock Allotment, refer to “Gila-Duncan Area, Parts of Graham and Greenlee Counties,” Arizona soil survey (NRCS 1981).

Aravaipa extremely gravelly loam, 5 to 40 percent slopes this deep, well-drained soil is on hills. Elevation is 3,500 to 5,000 feet. Typically, 75 to 95 percent of the surface is covered with fine angular gravel. Permeability of this Aravaipa soil is slow to a depth of 13 inches and very slow below this depth.. Runoff is medium, and the hazard of water erosion is slight. This unit is used mainly as rangeland and for wildlife habitat and recreation. The present vegetation in most areas is mainly scrub live oak, sotol, and juniper and an understory of threeawn, burroweed, and bush muhly. If the range vegetation is in good or excellent condition, the native grasses are mainly sideoats grama, blue grama, hairy grama, and black grama with a sparse over story of Emory oak. The ecological site asscociated with this site is Clayey Slopes 12-16".

Rock outcrop-Lampshlre complex, 20 to 90 percent slopes this map unit is on mountains. Elevation is 4,000 to 5,200 feet. This unit is 50 percent Rock outcrop and 30 percent Lampshire extremely cobbly sandy loam. Rock outcrop is throughout the unit, and the Lampshire soil is on the mountainsides. Rock outcrop consists of vertical or nearly vertical areas of exposed granite, gneiss, or schist. The Lampshire soil is very shallow and shallow and is well drained. Typically, 30 to 80 percent of the surface is covered with cobbles, gravel, and a few stones. Permeability of the Lampshire soil is moderate. Available water capacity is very low. Effective and observed rooting depth is 4 to 20 inches. Runoff is medium to rapid, and the hazard of water erosion is moderate. If the range vegetation on this unit is in good or excellent condition, the native grasses

are mainly sideoats grama, hairy grama, black grama, cane bluestem, and plains lovegrass. The overstory is juniper and oak. This unit is used as rangeland and for wildlife habitat, recreation, and homesite development. Associated ecological sites with this unit are Granitic Hills 12-16.

Major Land Resources:

Rangeland landscapes are divided into ecological sites for the purposes of inventory, evaluation, and management. An ecological site is a distinctive kind of land with specific physical characteristics that differs from other kinds of land in its ability to produce a distinctive kind and amount of vegetation. It is the product of all the environmental factors responsible for its development, and it has a set of key characteristics (soils, hydrology, and vegetation) that are included in the ecological site description (Inventory and Monitoring, Technical Reference 1734-7). The BLM uses rangeland health assessment to provide information on the functioning of ecological processes relative to the reference state for the ecological site or other functionally similar unit for that land area.

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). The Black Rock Allotment is in MLRA 41-3 and is largely comprised of the ecological site Granitic Hills (12-16 inches/per year). For a complete description of the soils on the Black Rock Allotment refer to Gila-Duncan Area, Parts of Graham and Greenlee Counties, Arizona soil survey (NRCS 1981). All of the soils found on this allotment are classified as arid and semiarid.

Vegetation:

The NRCS Range Site Guide describes the potential plant community on this site; as dominated by warm season perennial grasses. Several species of low shrubs are well represented on the site, but the aspect is grassland dotted with shrubs and cacti. Larger species of shrubs are concentrated at the edges of rock outcrop areas and in canyon bottoms. Most of the grass and low shrub species are well dispersed throughout the plant community. In the absence of wildfire and/or with overgrazing, shrubs increase to dominate the plant community. Well-developed gravel and cobble covers protect the soil from erosion and protect forage species from heavy use. Natural fire was an important factor in development of the potential plant community. Natural fire frequencies were about once every ten years. Fires helped maintain a balance between grasses, forbs and shrubs. With continuous heavy grazing palatable forage species diminish in the plant community and can be replaced by shrubs and succulents. Areas of rock outcrop are little grazed and hold remnant perennial forage species to help reseed the slopes below once grazing is managed. The plant community described for the HCPC is at a midpoint in its fire free interval (5 to 7 years after fire). (NRCS Ecological Site Guide, Granitic Hills 41-3).

4.3 Climate

Climate data was collected from the PRISM Climate Mapping Program. PRISM (Parameter-elevation Regressions on Independent Slopes Model) is an analytical tool that uses point data, a digital elevation model, and other spatial data sets to generate fine scale (4-km, 2.5 arc-minutes) grid-based estimates based estimates of monthly precipitation and temperature from 1895-present. The location from where the 4-km grid was set from is 32.95 N, 110.21 W.

Precipitation:

Precipitation in this common resource area ranges from 12-16 inches yearly in the eastern part with elevations from 3600-5000 feet, and 13-17 inches in the western part where elevations are 3300-4500 feet. Winter-Summer rainfall ratios are 40-60% in the west and 30-70% in the east. Summer rains fall July-September. Cool season moisture tends to be frontal, and falls in widespread storms with long duration and low intensity. Snow rarely lasts more than one day. May and June are the driest months of the year. Humidity is generally very low.

The PRISM data point listed the average precipitation amount from January 1895 to March 2013 as 15.57 inches. From the same data set the 20 year average is 13.76 inches. The less than average rain fall shows a long term trend in drought to an area that is considered to be in a 12-16 inch precipitation zone.

Temperature:

Temperatures are mild. Freezing temperatures are common at night from December-April; however temperatures during the day are frequently above 50 F. Occasionally in December-February, brief 0 F temperatures may be experienced some nights. During June, July and August, some days may exceed 100 F. The data collected from the PRISM program provides monthly temperature averages, which was then averaged by seasons Winter 45°F, Spring 60°F, Summer 79°F and Fall as 63°F.

4.4 Wildlife Resources/Special Status Species

The Black Rock Allotment has a diversity geological forms, elevations, slopes, and vegetation. Directly resulting in a diversity of wildlife species from large mammals such as black bear, mule deer, white tailed deer, javelina and desert bighorn sheep to golden eagles, peregrine falcon Gambel's quail, Gila monsters, and desert box turtles to name only a few. As diverse as the habitat is, it could be better. Shrub encroachment has reached a point in some places on the allotment that it is altering the ability of some species to move through and utilizes areas. Management emphasis in this area is on large game animals specifically mule deer, white tailed deer, javelina and desert bighorn sheep.

Deer

Habitat degradation from excessive herbivory and drought can alter and / or eliminate cover and food needed by mule deer and other wildlife species. Perennial bunch grasses and low shrubs are required fawning habitat (*i.e.*, cover) for mule deer and offer concealment from predators.

Adult animals also require cover for hiding and resting. Hiding or resting locations are selected to provide concealment, a view of the surrounding terrain, and easy access to escape routes.

Deer feed primarily on browse and forbs. Forbs are highly preferred and in spring and summer can comprise 20% to 40% of the annual diet; whereas browse can constitute between 40% to 70% of the diet in fall and winter. Mule deer are selective feeders and will choose the most succulent and nutritious shoots and grasses on which to feed. Diet largely depends on the ecoregion in which they live (Heffelfinger, *et al.*, 2006), in more productive habitats, such as woodland areas, a greater variety of food will be eaten than in desert areas.

Grazing at light to moderate levels has little impact on mule deer since browse and forbs constitute 90% of their diet with grass important only in early spring. Cattle consume primarily grass, with forbs and browse as secondary, but seasonally important components. Overgrazing results in livestock consuming more browse, which exacerbates the level and intensity of competition with mule deer. To reduce this impact livestock should not be allowed to browse more than 50% of the annual leaders growth (by weight), which equates to approximately 50% of the leaders browsed (Holechek and Galt, 2000).

Disappearance of springs, cienegas, and other natural waters in the southwest due to anthropogenic activities has negatively affected mule deer and other wildlife species (Heffelfinger, *et al*., 2006).

The Black Rock Allotment provides good mule deer habitat around the edges of the shrub patches. Mule deer prefer more open areas next to shrub patches they can use for escape cover. In some areas of the Black Rock Allotment the shrub density is too thick for mule deer. White tail deer tend to prefer denser cover areas thereby generally restricting themselves to higher elevations than mule deer. The habitat for white tail is good on the Black Rock Allotment, but larger very dense patches of shrub will limit white tail use and movement.

Javelina

Like mule deer, javelina, inhabit a variety of different habitat types throughout Arizona and are quite adaptable. Javelina are opportunistic feeders and require a diverse plant community comprised of flowers, fruits, nuts, grasses, forbs, shrubs, vines, succulents, and trees for survival. Prickly pear cactus comprises a major portion of their diet. A diverse and intact plant community not only provides forage, but much needed shelter and cover. Sonoran desert scrub and desert grassland habitat are two of the most important biotic communities in Arizona for javelina and comprise approximately 67% of their range. Javelinas do not inhabit pure grasslands, but grasslands that have been invaded by shrubs and cacti. Riparian forests are also important and are used quite frequently by javelina as sources of water, food, and cover (Day 1985).

As species that evolved in the tropics javalina will make use of dense shrub areas as long as they have access to a variety of forage and a water source.

Desert Bighorn Sheep
Over the last 30 years desert bighorn sheep have expanded out of the Aravaipa Canyon area into the Santa Teresa Mountain Range. They are now relatively common within the Black Rock allotment. The Aravaipa Canyon population of desert bighorn sheep will likely continue to expand with the Santa Teresa Mountains as a corridor to other mountain ranges. Desert bighorn have similar forage needs as mule deer, favoring forbs and shrubs. Bighorns tend to do best when the vegetation is diverse but not high enough to obscure their vision. Bighorn in general can suffer from forage and spatial competition from both cattle and other wildlife such as mule deer. By nature bighorn segregate themselves from other large species by occupying open steep rocky slopes. Because of this, spatial and forage competition is most likely to occur during periods of excessive forage use and drought (Valdez and Krausman, 1999).

Bighorn have moved into the Black Rock Allotment along the highest elevations where rock outcropping provide escape cover. Bighorn forage around the edges of these rock exposures and will not typically move into or through dense shrub vegetation.

In general the quality of the wildlife habitat for these large species could be increased by setting back the shrub component of the vegetative community with fire, herbicide or mechanical treatment. Treatments done in a manner that increases patchiness, and increase edge effect would enhance benefits to these species. Additions of year round water would also prove beneficial.

Federally Listed and Candidate Species
The Safford Field Office implements it grazing program consistent with the Biological Opinion (BO) on the Gila District Livestock Grazing Program for the Safford/Tucson Field Offices' Livestock Grazing Program, Southeastern Arizona (22410-2006-F-0414). This BO was reviewed to insure that all mitigation measures and terms and conditions stated in the BO are being followed. In addition, a current review of Graham County listed and candidate species is provided below (Table 2).

Table 2. Threatened (T), Endangered (E), and Candidate (C) Species, Graham County, Arizona, Febuary 5, 2013

Common Name	Scientific Name		Affected
American Peregrine falcon	*Falco pereginus anatum*		Considered a BLM Sensitive Species. Known to occur on the allotment.
Apache trout	*Oncorhynchus apache*		No affect. Known locations and suitable habitat are greater than five miles away.

Arizona Cliff-rose	*Purshia (=Cowania) subintegra*		No affect. Known locations and suitable habitat are greater than five miles away.
Bald Eagle	*Haliaeetus leucocephalus*		Considered a BLM Sensitive Species. Known locations and suitable habitat are greater than five miles away.
Chiricahua leopard frog	*Rana chiricahuensis*		No affect. Known locations and suitable habitat are greater than five miles away.
Desert pupfish	*Cyprinodon macularius*		No affect. Known locations and suitable habitat are greater than five miles away.
Desert tortoise Sonoran population	*Gopherus agassizii*		Considered a BLM Sensitive Species. Known locations and suitable habitat are greater than five miles away.
Gila chub	*Gila intermedia*		No affect. Known locations and suitable habitat are greater than five miles away.
Gila topminnow	*Poeciliopsi occidentalis*		No affect. Known locations and suitable habitat are greater than five miles away.
Headwater chub	*Gila nigra*		Considered a BLM Sensitive Species. Known locations and suitable habitat are greater than five miles away.
Lesser long-nosed bat	*Leptonycteris curasoae yerbabuenae*		No affect. There are no known roosts within 40 miles of the allotment.
Loach minnow	*Tiaroga cobitis*		No affect. Known locations and suitable habitat are greater than five miles away.
Ocelot	*Leopardus pardalis*		No affect Suitable habitat exists on the allotment. The closest known location was one occurrence outside of Globe AZ, 45 miles away. There is no reasonable likelihood the species occurs on the Black Rock allotment. .
Mexican spotted owl	*Strix occidentalis lucida*		No affect. Even though there is designated critical habitat within five miles of the allotment they have not been documented on the allotment and the allotment does not contain suitable habitat.
Mount Graham red squirrel	*Tamiasciurus hudsonicus grahamensis*		No affect. Known locations and suitable habitat are greater than five miles away.
Northern Mexican gartersnake	Thamnophis eques megalops		Considered a BLM Sensitive Species. Known locations and suitable habitat are greater than five miles away.
Razorback sucker	*Xyrauchen texanus*		No affect. Known locations and suitable habitat are greater than five miles away.
Roundtail chub	*Gila robusta*		Considered a BLM Sensitive Species. Known locations and suitable habitat are greater than five miles away.
Southwestern willow flycatcher	*Empidonax traillii extimus*		No affect. Known locations and suitable habitat are greater than five miles away.
Spikedace	*Meda fulgida*		No affect. Known locations and suitable habitat are greater than five miles away.
Wet Canyon talussnail	*Sonorella macrophallus*		Considered a BLM Sensitive Species Known locations and suitable habitat are greater than five miles away.
Yellow-billed Cuckoo	*Coccyzus americanus*		Considered a BLM Sensitive Species. Known locations and suitable habitat are greater than

			five miles away.

E – Endangered T – Threatened C – Candidate CA – Conservation Agreement

Reference http://arizonaes.fws.gov/

Special Status Species

The Safford Field Office reviewed a list of known Special Status Species occurrences in or within five miles of the Black Rock Allotment provided by the Arizona Game and Fish Department, Heritage Data Management System on May 1, 2009 (AGFD #M09-04213056). Table 5 contains the species considered special status by the Bureau (IM # AZ-2009-004) that were on that list.

Table 3. BLM Special Status Species in or within Five Miles of the Black Rock Allotment.

Common Name	Scientific Name	Status
American Peregrine Falcon	*Falco peregrines anatum*	AGFD Species of Special Concern
Lowland leopard frog	*Lithobates yavapaiensis*	AGFD Species of Special Concern
Golden eagle	*Aquila chryaetos*	AGFD Species of Special Concern

The Safford Field Office is aware of the occurrence of peregrine falcons on the Black Rock Allotment and cooperates with ongoing monitoring of this delisted species. Golden eagles are a widely disbursed species within Arizona there are currently no known nests on the Black Rock Allotment, although the cliff faces and rock outcrops provide suitable nesting habitat. For this allotment evaluation there are no known negative effects from grazing on this special status species. Lowland leopard frogs are not known to occur on the allotment, but have been documented within five miles of the allotment. The Safford field Office will continue to survey for the species and suitable habitat. For this allotment evaluation there are no known negative effects from grazing on these three special status species.

4.5 Special Management Areas

The western portion of the Black Rock Allotment is within the North Santa Teresa Wilderness Area. Approximately 1,500 acres of the allotment is within wilderness. There is no management plan for the North Santa Teresa Wilderness Area. National wilderness goals are to provide long term protection and preservation of the wilderness character, manage in a manner as to un-impair the natural condition and wilderness values while allowing visitor use and enjoyment, employ the use of minimum tool and regulation principals, and manage acceptable non-conforming uses with emphasis on maintaining the wilderness character. The national wilderness goals are being met.

There are no other special management areas in or adjacent to the Black Rock Allotment.

4.6 Recreation Resources

There are no developed recreation facilities in the allotment; however, dispersed recreation does occur. Dispersed recreation primarily involves small and big game hunting, target shooting and off-highway vehicle (OHV) operation. Vehicle access to the allotment is limited. The main access to the allotment is through San Carlos Apache Indian Reservation and private land. Normally, these gates are open. However, during hunting season the private land gate may be locked, and on occasion reservation officials will close access. Roads, mainly two-track jeep trails, are rough but in stable condition. Tire tracks in dry washes indicate some off-road use. Over-all there is very little sign of recreation use or subsequent impacts. There are no recreation related concerns at this time.

4.7 Visual Resources

Safford Resource Management Plan (RMP) has designated public lands within the Black Rock Allotment which are inside the North Santa Teresa Wilderness Area as Visual Resource Managment (VRM) Class I. The objective of this class is to preserve the existing character of the landscape. This class provides for natural ecological changes; it does not, however, preclude very limited management activity. The level of change to the characteristic landscape should be very low and must not attract attention.
The remaining area of the allotment is in the (VRM) Class IV**:** The objective of this class is to provide for management activities that require major modification of the existing character of the landscape. The level of change to the characteristic landscape can be high. These management activities may dominate the view and be the major focus of viewer attention. Every attempt should be made, however, to minimize the impact of these activities through careful location, minimal disturbance and repeating the basic elements.

4.8 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-SHPO 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 (9/78) and the Safford Resource Management Plan (8/91). Indian tribes were consulted at the beginning of

the permit 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 November 25, 2008. Because no historic properties were identified in areas of livestock congregation, no mitigation is recommended as a BLM responsibility or as a term or condition of the permit, to protect cultural values identified above.

As required by the Native American Graves Protection and Repatriation Act regulations at 43 CFR 10.4(g), the following should be added to the grazing lease/permit as a term and condition:

> 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 permittee 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 permittee shall continue to protect the immediate area of the discovery until notified by the Authorized Officer that operations may resume.
>
> * Properties refer to archaeological sites, Traditional Cultural Properties, and Sacred Sites.

4.9 Noxious Weeds/Invasive Species

No listed noxious weeds are known to occur on the allotment there are two non-native invasive species that occur. However, species that increase under conditions such as drought and uncontrolled open rage grazing as occurred until the late 1940. It is widely accepted that this was one of the factors setting in motion increased shrub production on rangelands in southeastern Arizona. Much of the shrub encroaching range land is now in a shrub dominated steady state that is difficult if not impossible to shift out of without extensive human manipulation.

4.10 Inventory and Monitoring Data and Methodology

All data was collected in accordance with “Sampling Vegetation Attributes, Interagency Technical Reference, 1996.” Monitoring data is located in Appendix 1.

Composition:

Dry weight ranking (DWR) studies will be used to measure attainment of the key area desired plant community (DPC) objectives. In addition, pace frequency studies will be used at each key area to detect changes of individual species which determines a trend or change in vegetation composition. Pace frequency and DWR will be completed on each key area every 3-6 years.

DWR data was not collected prior to 2005 on the Black Rock Allotment. Data collected in 2005 will serve as the baseline data. Data has been collected again in 2012.

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 data were collected at three key areas on the Black Rock allotment between 1979, 2005 and 2012.

Frequency/Trend:

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.

Pace frequency data was not collected prior to 2005 on the Black Rock Allotment. Pace frequency data was collected in 2005 for the first time and will serve as the baseline data. Data has been collected again in 2012.

4.11 Key Areas/Key Species

Key areas are indicator areas that reflect what is happening on a larger area as a result of on-the-ground management actions. A key area should be a representative sample of a large stratum, such as an ecological site, watershed area, pasture, wildlife habitat area, or herd management area. Key species are generally an important component of a plant community. Key species serve as indicators of change and may or may not be forage species.

The Black Rock allotment has three key areas KA-1, KA-3 and KA-4. Site KA-2 is used as a photo point.

Key Species:

Transect KA-4: Perennial Grass Species: Sideoats grama (*Bouteloua curtipendula*) Black grama (*Bouteloua eriopoda*), Three-awn (*Aristida spp*.), Slender grama (*Bouteloua repens*), and Bush muhly (*Muhlenbergia porter).*

Transect KA-3: Browse Species: Shrubby buckwheat (*Eriogonum wrightii*). Pernnial Grass Species: Sideoats grama (*Bouteloua curtipendula*) Black grama (*Bouteloua eriopoda*), Three-awn (*Aristida spp.*), Slender grama (*Bouteloua repens*), Bush muhly (*Muhlenbergia porteri*), and Hairy grama (*Bouteloua hirsuta*).

4.12 Land Health Allotment Objectives

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

Standard 2: Riparian- Wetland Sites
Maintain or improve riparian/wetland areas to facilitate proper functioning condition.

Standard 3: Desired Resource Condition
Maintain or improve productive and diverse upland and riparian-wetland plant communities of native species.

5.0 Management Evaluation

5.1 Upland Health Assessment

Upland health assessments were completed at two key areas on the Black Rock Allotment November 25, 2008. These two key areas were used for the Upland Health Assessment, as they represent ecological sites over the majority of the allotment. This method involves observing a set of physical and biological attributes at a site to determine upland 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 upland health determination is made by summing all of the attributes. Refer to Table 9 for a summary of the assessments on the Black Rock allotment. Methods for the upland health assessments are described in "Interpreting Indicators of Rangeland Health, Technical Reference 1734-6, 2000."

Table 4. Summary of Upland Health Assessments at Key Areas.

Key Area	Departure for Ecological Site Description				
	Extreme	Moderate to Extreme	Moderate	Slight to Moderate	None to Slight
KA-1				S,H,B	
KA-3					S,H,B

S- Soil/site stability H- Hydrologic function B- Biotic integrity

6.0 Conclusions

Based on the analyses and supporting documentation referenced herein, resource conditions on the Black Rock Allotment are as follows:

Site 1 Key Area KA-1 Granitic Hills Ecological Site:

- Standard 1. Upland sites do not achieve standard

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

  Rationale:

  The results of the upland health assessment indicate a rating of slight/moderate rating from the ecological site description. The site is a granitic hills with high amounts of small gravel and little grass cover. Soil/Site stability is lacking due to absence of cover resulting in a high amount of bare ground. Hydrologic Function is operating at a slight to moderate departure from expected due to evidence of water flow patterns and pedestals. Biotic integrity is slight to moderate ranking because of the high occurrence of shrubs and sub-shrubs including whitethorn that is thought to be an increaser species.

- Standard 3 is not being achieved for the Granitic Hills Ecological Site.

  Objective: Maintain or improve productive and diverse upland and riparian-wetland plant communities of native species.

  Site Objectives:

  - Manage for Shrub Composition at 50-70%
  - Manage for Perennial Grass Composition at 25-40%

Discussion:

Data from the Granitic Hills site (KA-1) key area shows that the site is not meeting the objective for perennial grass composition range. The key area also is also not meeting the site objective for shrub composition well below the desired composition range. Trend data on this site shows a static trend for this site.

This site has been invaded by catclaw (*Acacia greggii*) that has produced a closed canopy with little grass species present and is within the shrub and mimosa increase state. When referencing the ecological site guide sites it gives recommendations on how sites can progress towards HCPC it states that is unknown but suggest the possibility of proper grazing/no grazing with herbicide shrub control followed by maintenance treatments i.e. fire/herbicide and possible reseeding of native grasses could give the site a push to achieve HCPC. Current grazing management is not the causal factor for the state of this key area. Because of "push" necessary to achieve HCPC this area will be managed for a shrubby community favored by the species for which management is emphasized.

Key Area KA-3 Granitic Hills Ecological Site:

- Standard 1. Upland sites is achieving standard

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

Signs of accelerated erosion are minimal and are appropriate for the site as indicated by ground cover litter, rock, vegetative (canopy) cover, etc. and signs of erosion. This objective applies to all ecological sites.

Rationale:

The findings are based upon the preponderance of evidence of all indicators used to determine attainment of Land Health Standard 1. The results of the upland assessment indicate a rating of none/slight departure from the ecological site descriptions on this site. The site had vegetative cover levels that are appropriate for the site and the qualitative assessments of the soil-related indicators (rills, flow patterns, pedestals, bare ground, gullies, litter movement, and soil compaction etc.) did not indicate any signs of accelerated erosion at any site. Hydrologic Function was functioning at expected levels, although it was noted that there may be a need for more diverse plant community composition to assist in infiltration, but did not warrant an increased rating. Biotic integrity was intact; however, there is a noted increase difference of importance in the functional groups because of the presence of some potential shrub increasing on the site.

- Standard 3 is being achieved for the KA-3 Granitic Hills Ecological Site

Objective: Maintain or improve productive and diverse upland and riparian-wetland plant communities of native species.

Site Objectives:

- Manage for Shrub Species at 30-55% Composition
- Manage for Perennial Grass Species at 50-70% Composition

Discussion:

Data from the Granitic Hills site (KA-3) key area shows that the site is meeting the objective for shrub species composition within the range of 30-55%. The key area is also with the desired range of perennial grass species at 50-70% composition. Analysis of the trend data shows upward trend with a noted increase of perennial grass species particularly cool season grasses. The increased presence of the cool season grass can indicate that current grazing use is not a casual factor in the non-attainment of standards. This has improved under current conditions despite the long term drought. Utilization data collected at this site show that there is slight use on Hairy grama (*Bouteloua hirsuta*) 20%, and Black grama (*Bouteloua eriopoda*) 12.4% with light use on Sideoats grama (*Bouteloua curtipendula*) 22.5%. Additional data needs to be collected in following years to determine use patterns across the allotment and over a longer time period.

7.0 Recommendations

There is currently a Coordinated Resource Management Plan (CRMP) between the USDA NRCS (United States Department of Agriculture, Natural Resource Conservation Service), the permittee, US Forest Service and the Bureau of Land Management on this allotment. This planned identified resource concerns and provided solutions to attain land health on the entire allotment. To move towards achieving range health standards range improvements were implemented on private land including additional water sources, a solar pump, storage tank and two troughs have been added in the Sandhills Pasture. An additional pipeline has been installed on BLM land to pump water from private land to a trough on BLM land analyzed in DOI-BLM-AZ-G010-2009-0040-EA. These additional waters will enable better livestock distribution throughout the allotment.

8.0 Consultation

Permittee(s), interested public, state agencies, and other federal agencies where initiated by a letter on February 25, 2009 with a public meeting invitation on March 25, 2009. On August 3, 2009 the Standards and Guidelines evaluations were sent to the interested parties and comments were received from Western Watersheds Projects. Evaluations were sent out again for comments on June 12, 2012. Comments were received from Western Watersheds Project.
Section 7 Consultation occurred on the Gila District Livestock Grazing Program Biological Opinion (BO) for the Safford/Tucson Field Offices' Livestock Grazing Program, Southeastern Arizona (22410-2006-F-0414).

9.0 Selected Management Action

The recommended adjustments to permitted livestock use and management practices will allow for continued achievement and significant progress towards achievement of Land Health Standards. This includes adjustments to permitted use, terms and conditions and management practices.

The following recommendations consider the principal purpose of protecting land health objectives on the Black Rock Allotment.

Permit: Mandatory Term and Conditions

Allotment	Livestock Numbers	Kind	Grazing Period Begin End	%PL	Type Use	AUMs
4630	66	Cattle	04/01 10/31	85	Active	395

Basic Schedule: Authorizes Use

Allotment	**Livestock number**	**Kind**	**Grazing Period Begin End**	**%PL**	**Type Use**	**AUMS**
46300	20	Cattle	04/01 10/31	85	ACTIVE	120
46300	46	Cattle	04/01 10/31	85	NONUSE	275

The continuation of partial non-use is suggested to continue making significant progress towards meeting standards until a time when the Upper Forest Pasture is put back into the rotation which will allow growing season rest on the BLM Sandhill pasture every other year.

Authorized Officer Concurrence:

___ I concur with the conclusions and recommendations as written.

___ I do not concur.

___ I concur, but with the following modifications.

_____ _____

Scott C. Cooke Date
Safford Field Office Manager

Appendix A: Key Locations and Data

Site History - Frequency

Site Class: BLM || Gila || Safford || Blackrock (4630) || Blackrock **Site ID:** KA-1

% Plant Frequency **Quadrat Size:** 40x40 cm

Species	7/5/05	3/23/12									
Woody Species											
Acacia confusa		1									
Acacia constricta-cANIPY		3									
Acacia greggii-canopy	7										
Gutierrezia sarothrae	3	2									
Gutierrezia sarothrae-canopy	4	1									
Mimosopsis biuncifera	65	17									
Grasses - Perennial											
Aristida		2									
Annuals											
Annual forb(s)	64	95									
Annual grass(es)	98	73									
Microseris bigelovii-canopy	18	53									
Unclassified											
Prosopis	1	1									
Prosopis-canopy	2	10									
Senna	1										

Site History - Ground Cover

Site Class: BLM || Gila || Safford || Blackrock (4630) || Blackrock **Site ID:** KA-1

% Ground Cover											
Category	**7/5/05**	**3/23/12**									
Ground Cover											
Bare Ground	6	17									
Gravel (1/4" - 3")	12	7									
Litter	79	75									
Live Basal Veg.	2	1									
Rock > 3"	1										

Site History - Frequency

Site Class: BLM || Gila || Safford || Blackrock (4630) || Blackrock **Site ID:** KA-3

% Plant Frequency												Quadrat Size: 40x40 cm
Species	**7/5/05**	**3/23/12**										
Woody Species												
Acacia confusa		1										
Acacia confusa-canop		13										
Acacia greggii-canopy	5											
Ericameria laricifolia-canopy	1	1										
Eriogonum wrightii	1	4										
Eriogonum wrightii-canopy	1	5										
Gutierrezia sarothrae	7	1										
Gutierrezia sarothrae-canopy	12	1										
Mimosopsis biuncifera	3	2										
Mimosopsis biuncifera-canopy	49	33										
Rhynchosia michauxii		1										
Rhynchosia michauxii-canop		1										
Grasses - Perennial												
Aristida	3	24										
Bouteloua chondrosioides		1										
Bouteloua curtipendula	1	7										
Bouteloua eriopoda		13										
Digitaria californica		1										
Elymus elymoides	1	1										
Eragrostis lehmanniana		2										
Leptochloa dubia		1										
Lycurus phleoides-CANOPY		1										
Sporobolus cryptandrus		1										
Forbs - Perennial/Biennial												
Artemisia ludoviciana		1										
Bommeria hispida		1										
Perennial forb(s)-fwm		1										
Annuals												
Annual forb(s)	50	88										
Annual grass(es)	93	63										
Unclassified												
Ferocactus	1											
Hoffmannseggia	1											

Site History - Ground Cover

Site Class: BLM || Gila || Safford || Blackrock (4630) || Blackrock **Site ID:** KA-3

% Ground Cover												
Category	**7/5/05**	**3/23/12**										
Ground Cover												
Bare Ground	11	18										
Gravel (1/4" - 3")	7	4										
Litter	75	62										
Rock > 3"	5	12										
Live Basal Veg.	2	5										

Site History - Frequency

Site Class: BLM || Gila || Safford || Blackrock (4630) || Blackrock **Site ID:** KA-4

% Plant Frequency												Quadrat Size: 40x40 cm
Species	**7/22/05**	**3/23/12**										
Woody Species												
Acacia greggii	1	2										
Acacia greggii-canopy	10	5										
Agave-canopy		1										
Ceanothus greggii-canioo		1										
Dasylirion wheeleri-canopy		1										
Ericameria laricifolia	5	6										
Ericameria laricifolia-canopy	19	13										
Eriogonum wrightii	3	2										
Eriogonum wrightii-canopy	1	2										
Gutierrezia sarothrae	2	10										
Gutierrezia sarothrae-canopy	16	8										
Mimosa biuncifera	1	4										
Mimosa biuncifera-canopy	17	18										
Opuntia-cholla	1											
Grasses - Perennial												
Aristida	6	11										
Bothriochloa barbinodis		8										
Bouteloua chondrosioides		1										
Bouteloua curtipendula	9	24										
Bouteloua eriopoda	15	19										
Bouteloua filiformis	33											
Digitaria californica		2										
Muhlenbergia emersleyi		1										
Muhlenbergia porteri	5	9										
Sporobolus cryptandrus		4										
Forbs - Perennial/Biennial												
Bommeria hispida		2										
Sphaeralcea	1											
Annuals												
Annual forb(s)	82	84										
Annual grass(es)	50	35										
Unclassified												
Asclepias	1											

Site History - Ground Cover

Site Class: BLM || Gila || Safford || Blackrock (4630) || Blackrock

Site ID: KA-4

% Ground Cover

Category	7/22/05	3/23/12								
Ground Cover										
Bare Ground	10	10								
Gravel (1/4" - 3")	27	9								
Litter	48	61								
Rock > 3"	12	13								
Live Basal Veg.	3	9								

Literature Cited

Carpenter, N. L. Dodd. 2006. Habitat guidelines for mule deer, southwest deserts ecoregion. Mule Deer Working Group. Western Association of Fish and Wildlife Agencies.

Day, G. I. 1985. Javelina. Arizona Game and Fish Department, Phoenix, AZ.

Heffelfinger, J.R, C. Brewer, C. H. Alcala-Galvan, B. Hale, D. L. Weybright, B. Wakeling, L.H.

Holechek, J. L., and D. Gault. 2000. Grazing intensity guidelines. Rangelands 22:11-14.

NRCS. (n.d.). Retrieved April 12, 2013, from Ecological Site Description (ESD) System: http://esis.sc.egov.usda.gov/

U.S Department of Agriculture Soil Conservation Service and U.S Department of the Interior Bureau of Land Management.1981.*Soil Survey of Gila-Duncan Area, Arizona, Parts of Graham and Greenlee Counties*. Soil Conservation Service.

U.S. Department of the Interior, Bureau of Land Management (BLM). 1978. *Upper Gila- San Simon Grazing ES.* Bureau of Land Management, Safford Field Office.

U.S. Department of the Interior, Bureau of Land Management (BLM). 1991. *Safford Resource Management Plan*. Bureau of Land Management, Safford Field Office.

U.S. Department of the Interior, Bureau of Land Management (BLM). 1996. *Sampling Vegetation Attributes, Technical Reference* 1734-4. Written by: Coulloudon, B., K. Eselman, J. Gianola, N. Habich, L. Hughes, C. Johnson, M. Pellant, P. Podborny, A.Rasmussen, B. Robles, P. Shaver, J. Spehar, and J. Willoughby. Denver, CO. BLM/RS/ST-96/002+1730.

U.S. Department of the Interior, Bureau of Land Management (BLM). 2001. *Ecological Site Inventory*, Technical Reference 1734-7. Written by: Habich, E.F. Denver, CO. BLM/ST/ST-01/003+1734.

U.S. Department of the Interior, Bureau of Land Management (BLM). 2005. *Interpreting Indicators of Rangeland Health*, Version 4, Technical Reference 1734-6. Written by: Pellant, M., P. Shaver, D. A. Pyke, and J. E. Herrick. Denver, CO. BLM/ST/ST-01/003+1734.

Valdez, R., and P.R. Krausman. 1999. Mountain Sheep of North America. The University of Arizona Press. Tucson.