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Safford Field Office
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Environmental Assessment
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Tom Springs and Bryce Allotments Grazing Permit Renewals



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1.0 Introduction

This Environmental Assessment (EA) has been prepared to disclose and analyze the environmental consequences of the proposed grazing permit renewals for the Tom Springs (#46020) and Bryce (#46080) allotments (Figure 1). The action culminates two evaluations conducted on the allotments under the Arizona Bureau of Land Management (BLM) Standards for Rangeland Health and Guidelines for Grazing Management (S&Gs). 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 Tom Springs and Bryce Allotments are meeting the applicable Standards for Rangeland Health. This EA is intended to be used with the Tom Springs and Bryce Allotment Evaluation & Rangeland Health Analysis’ (Appendices 1 & 2).

1.1 Background

The Tom Springs (#46020) and Bryce (#46080) allotments have not been previously evaluated through the Standards and Guideline process. On 03/01/2013, both the Tom Springs and Bryce permits were 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.”

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), from which 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 were 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 Tom Springs and Bryce 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 Tom Springs and Bryce Allotment that are 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 Tom Springs and Bryce allotments 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-EIS) (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 RMP Decision Number and Narrative

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. UG-EIS 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.

WF09: Manage priority wildlife species habitat (vegetation communities) or special features of that habitat (water, riparian vegetation, cliffs, etc.) to maintain or enhance population levels.

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.

WF17: Continue to maintain and improve wildlife habitat, emphasizing priority habitat.

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 Tom Springs and Bryce permit renewal proposal to interested individuals, organizations, and agencies on October 31, 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

- What are the potential impacts of the no grazing alternative on wildlife water?
- What are the potential impacts of the no grazing alternative on livestock operations?

2.0 Proposed Action and Alternatives

2.1.1 Design Features Common to Proposed Action and No Action Alternative

Annual Meetings: When large changes are identified in monitoring data, an annual meeting between BLM and the grazing permittee would be conducted to discuss previous years monitoring and the coming year's grazing schedule. 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: When drought is declared by the authorized officer, permittees are contacted and educated on consequences of drought on forage production. The permittee 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

2.2 Proposed Action

The proposed action is to renew the grazing permit for the Tom Springs and Bryce allotments for a period of 10 years as authorized by the grazing regulations at §4130.2(d) with the following Terms and Conditions (Table 1).

Table 1: Mandatory terms and conditions:

Allotment	Livestock Number	Kind	Grazing Period		Type %PL	Use	AU MS
			Begin	End			
46020	97	Cattle	03/01	02/28	100	Active	1164
46080	421	Cattle/Horses	03/01	02/28	31	Active	1678

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

- Submit a report of your actual use made on the allotment for the previous grazing period March 1 to February 28. Failure to submit such a report by March 15 of the year may result in suspension or cancellation of your grazing permit or lease.
- This permit is subject to future modification as necessary to achieve compliance with the standards and guidelines (43 CFR 4180).
- Permittees are required to maintain all range projects for which they have maintenance responsibilities.
- This permit is subject to all terms and conditions found on the back side of the permit.
- With the exceptions of salt and or mineral blocks, supplemental feeding is not authorized on public lands unless prior approval is requested and given by the authorized officer.
- Salt and/or mineral blocks shall not be placed within one quarter (1/4) mile of water sources, springs, streams, and riparian habitats.

- All troughs would be outfitted with wildlife escape structures to provide a means of escape for animals that fall in while attempting to drink or bathe.

Grazing Plan

Tom Springs would incorporate the principles of rest –rotation grazing, using a four pasture system. This system would best meet the resource needs within the allotment.

All pastures would receive spring and summer rest every other year. Cattle would be moved March 1st and again on October 1st of each year. Pastures would be rested for a seven month period. Day Mine and Porter Wash pastures would be grazed and rested on the same schedule. The Carland Wash and Headquarters pastures would also be rested and grazed concurrently. The grazing of the Headquarters and Porter Wash pastures would be closely monitored. They are not strictly ephemeral, however both pastures lack the perennial vegetation cover found in the upper pastures. The proposed grazing rotation with the included periods of rest should allow for recruitment and retention of warm and cool season grasses.

Bryce would incorporate the principles of a Santa Rita style rest- rotation system designed to rest each pasture every other year. There are currently three major pastures on the allotment. (Table 1).

Table 1. Bryce Grazing System: Grazing Rested

	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
West												
Cove												
Black Hills												
West												
Cove												
Black Hills												
West												
Cove												
Black Hills												
West												
Cove												
Black Hills												

2.3 No Action Alternative

Under the no action alternative, the Authorized Officer would authorize continued livestock grazing under the same mandatory terms and conditions as the current permit. The permit would be renewed for a term of ten years. Should information collected subsequent to any renewal indicate changes in management are needed to ensure that the allotment is meeting or making significant progress towards standards and conforming to guidelines, the permit may be modified at any time during the ten-year period.

2.4 No Grazing Alternative

Under the No Grazing Alternative, livestock grazing would be eliminated as an authorized activity. This alternative would cancel the permit on the Tom Springs and Bryce allotments. Under this alternative, BLM would initiate the process in accordance with the 43 CFR parts 4100 and 1600 to eliminate grazing on the allotment and amend the resource management plan.

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 Tom Springs and Bryce allotments.

3.0 Affected Environment

The Tom Spring Allotment #4602 is located in Graham County, Arizona. The allotment begins approximately 2 miles north of U.S. Highway 70 on Bryce Eden road just north of Geronimo. It is bordered to the west by the Diamond Bar Allotment and bordered on the east by the Day Mine Allotment. While the allotment does not have any wilderness within it, the Fishhook Wilderness area borders it to the north on the Diamond Bar allotment. The allotment is flanked to the south by private land that is adjacent to the Gila River and is predominantly used for agriculture i.e. cotton, alfalfa and various grains. Elevations on the allotment vary from 2800 feet above sea level to 5200 feet ASL. The topography of the northern most part of the Allotment has slopes of 9 to 25% with some extremes of almost 50%. The lower half is comprised of gently sloping alluvial fans intersected by canyons that were created by the various washes found in and bordering the allotment.

The Bryce Allotment #4608 is located in Graham County, Arizona. The Bryce allotment is located eight miles northwest of Safford. It is bordered to the west by the Day Mine Allotment, San Carlos Apache Indian Reservation to the North, Johnny Creek and Talley Wash Allotments to the east and Kimball Allotment/ Gila River Plain to the south. Elevations on the allotment vary from 2860 feet above sea level to 7298 feet ASL. The topography of the northern most part of the allotment has slopes of 10 to 35% with some extremes of almost 50%. The lower half is comprised of gently sloping alluvial fans intersected by canyons that were created by the various washes found in and bordering the allotment. These slopes generally run from 9-14%. All

watershed drainage is to the southwest to the Gila River. The major drainage on the allotment is Markham Creek. Markham Creek flows perennially in stretches on the Day Mine Allotment. The creek goes subsurface as it enters the Bryce Allotment. It remains dry across six miles of state land before ending in a wide alluvial fan on public lands near the Gila River.

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 2, 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 2 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 2. 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	Sources of atmospheric emissions from the proposed project include vehicle traffic and equipment operation, both of which would release particulates and gaseous exhaust emissions to the atmosphere. The very small quantities of pollutants released would have negligible cumulative effect on local air quality for a very short period of time. The proposed action and no action alternatives are expected to maintain status of compliance with State and federal standards.
Areas of Critical Environmental Concern	NP	The project area is not located within or near an Area of Critical Environmental Concern.
BLM Sensitive Plants	NI	One BLM sensitive plant potentially occurs on the Tom Spring and Bryce allotments. Pima Indian mallow is known from one location in the Gila Mountains. The species is found on steep hill side and in association with rocks and rock outcrops. The habitat for the species is typically not grazed to any extent by livestock.
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. 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.

Resource	Determination*	Affected Environment (Rationale for Determination)
Environmental Justice	NI	The project area encompasses uninhabited public lands administered by BLM. The closest community is Ft Thomas and Pima Arizona, three miles to the southeast. No aspect of the proposed action, no action, or no grazing alternatives would have a disproportionately high adverse health or other environmental impact on low income or minority populations as defined by Executive Order 12898.
Farmlands (Prime or Unique)	NP	There are no prime or unique farmlands within the project area. There are farmlands adjacent that are private lands.
Floodplains	NP	The project area is not within a floodplain, as defined by the Executive Order 11988 (1977).
Invasive and Nonnative Species	NI	There is currently one known invasive species on the allotments. Tamarisk is located on the lower portions of Tom Springs and Bryce allotments. Tamarisk is established throughout the Gila River Corridor, and is isolated at spring sources on the allotments. These patches are limited to areas with surface moisture and are not spreading. No change in tamarisk is expected with the implementation of the proposed action, no action or the no grazing alternative.
Livestock Grazing	PI	The Tom Springs Allotment is currently grazed year round with a best pasture system in place. The Bryce is Allotment is being managed by excluding waters from use by livestock. Permit renewal is required to allow continued livestock use on this allotments; this issue is therefore analyzed in detail later in this EA.
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.
Socioeconomic Values	NI	The closest communities to the project area are Ft. Thomas, and Pima Arizona, three miles away. Mining is by far the dominant socioeconomic influence on these communities followed by farming and ranching. The Tom Springs and Bryce Allotments and the associated cattle operations on public land contribute a small amount to the socioeconomics of the local communities. The impact contrast of the No Grazing Alternative (removal of cattle from local economic production) with the Proposed Action and No Action Alternatives (cattle remain part of the local economic production) would affect the individual livestock operators the impact on communities would be indistinguishable.
Soils	NP	Soil loss and erosion are currently not a problem on either allotment.
Special Status Species	NI	Bureau sensitive species documented to occur on or within five miles of the allotments have been considered. The allotments do not provide habitat for yellow billed cuckoo. The one known location for Bylas spring snail, Porter Wash Pond, is fenced from livestock. Livestock grazing under the proposed action and alternatives is not expected to impact individual migratory birds, nest or eggs. There are no impacts to Bureau sensitive species or migratory birds from the proposed action, no action or no grazing alternative that would require further analysis.
Threatened, Endangered, or Candidate plant species	NP	No Threatened, Endangered, or Candidate plant species occur in the project area.

Resource	Determination*	Affected Environment (Rationale for Determination)
Threatened, Endangered Animal Species	NP	<p>The Safford Field Office implements its grazing program consistent with the Biological Opinion (BO) rendered on the Gila District Livestock Grazing Program for the Safford/Tucson Field Offices' (22410-2006-F-0414). This BO was reviewed to insure that all mitigation measures stated in the BO are being followed. The U.S. Fish and Wildlife list of species for Graham County was reviewed and individual determinations were made.</p> <p>It is the Bureaus' determination that the implementation of the proposed action, no action or no grazing alternative would have no effect on listed species. (species-specific determinations are in the Standards and Guides Evaluations for each allotment).</p>
T&E Fish/Fisheries	NP	A population of desert pupfish and Gila topminnow were established at Lower Big Springs in the mid-1980s. The population was subsequently washed out and the habitat rendered unsuitable by heavy flooding. The site remains fenced off from livestock, but has not been occupied by listed species for approximately 30 years. The impacts of livestock grazing on this site were covered in BO #22410-2006-F-0414.
Visual Resources	NI	<p>Safford RMP designated public lands within the Tom Springs and Bryce area as Visual Resource Management (VRM) class III. The visual resource objective for class III is to partially retain the existing character of the landscape. The level of activity may attract attention but should not dominate the view of the casual observer. Changes should repeat the basic elements found in the predominant natural features of the characteristic landscape.</p> <p>Continuing livestock grazing as proposed in the proposed action or its alternatives would not affect visual resources.</p>
Wastes (hazardous or solid)	NP	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	Due to the lack of surface water at this location water quality would not be impacted to a degree that would be measurable from natural background water quality estimates.
Wetlands/Riparian Zones	NI	The surface waters on lower portions of both allotments have been fenced from livestock use. The springs on the upper portions of the allotment are not used heavily by livestock due to terrain and or other serviceable water sources. Impacts with all alternatives would be negligible.
Wild and Scenic Rivers	NP	There are no Wild and Scenic River segments classified as designated, eligible, or suitable within the project area.
Wilderness	NP	The nearest wilderness (Fishhooks) is located approximately 2.2 miles north and west of the project area. Because there are no designated wilderness areas within the action area of the project, no direct, indirect, or cumulative impacts on this critical element would occur from the proposed action the alternatives.
Wilderness Characteristics	NP	This unit does not meet the requirements for wilderness characteristics. This critical element would not be affected by the proposed action or its alternatives.

Resource	Determination*	Affected Environment (Rationale for Determination)
Wildlife	PI	A change in wildlife habitat, with regard to water distribution, would occur dependent on the alternative implemented. Wildlife habitat would remain shrub dominated with only minor changes over time under any of the alternatives. Dependent on the water distribution being maintained, the area would continue to support the habitat and wildlife that currently exist.

3.1 Resources Brought Forward for Analysis

3.1.1 Wildlife

The Tom Springs and Bryce allotments are comprised of diverse geological forms, elevations, slopes, and vegetation types, directly resulting in a diversity of wildlife species from large mammals such as black bear, mountain lion, mule deer, javelin, bighorn sheep, and an abundance of smaller species, including Gambel’s quail, Gila monsters and jack rabbits, to name only a few. As diverse as the habitat is, it could be improved for specific species. Wildlife management emphasis in this area is on BLM sensitive species and large game animals, specifically mule deer, and javelina.

Deer

Habitat degradation from excessive herbivore and drought can alter cover and food needed by mule deer. 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 would 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 would 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).

Overall, the Tom Springs and Bryce allotments provide good habitat for mule deer. The slopes provide year round habitat, with the lower areas important for seasonal forage and for movement. The public land portion of the Bryce allotment are primarily in the lower areas and is not as good for mule deer as the higher state land areas.

Javalina

Like mule deer, javalina inhabit a variety of different habitat types throughout Arizona and are quite adaptable. Javalina 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 javalina and comprise approximately 67% of their range. Javalina 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 javalina as sources of water, food, and cover (Day, 1985).

Tom Springs and Bryce allotments provide good habitat for javalina. Javalina evolved in tropical environments and tend to associated with available waters and dense vegetation. They are primarily found along the larger washes, lower slopes and edges of the allotments next to private land farms.

Bighorn Sheep

A resident population of Bighorn has become established, in the Gila Mountains around Markham Creek. Bighorn occur in the rugged portions of the Bryce allotment along the northern boundary and in a small portion of Markham Creek as it enters the allotment. This population in the Gila Mountains is continuing to expand and will likely reach the upper portions of the Tom springs Allotment within the next ten years. Important features of bighorn habitat are cliffs, rocky outcrops, and talus slopes which are used as escape terrain. Bighorn are closely associated with mixed cacti-mixed scrub on rocky slopes, mountain upland and rock outcrop natural communities (Volcanic hills ecological sites).

Bighorn forage on green and dried, grasses and forbs, as well as on shoots and flowers of prickly pear, cholla cactus (*Opuntia* spp.) and succulents (for example, barrel cactus, agaves). Grasses are important in their range and are favored when available. Browse becomes more important in the fall and winter and in the southern and western part of bighorn's range. Important browse species include acacias (*Acacia* spp.), mesquite (*Prosopis* spp.), fairy duster (*Calliandra eriophylla*), Mormon tea (*Ephedra* spp.), and desert mistletoe (*Phoradendron californicum*).

Some natural water exists in the upper portions of the allotment which would provide for bighorn sheep. A few of the waters in the upper end of the allotments developed for livestock may also benefit bighorns.

3.1.2 Livestock Grazing

The Tom Springs permittee currently runs a 97 head cow calf operation year round on the allotment, and the Bryce permittee currently runs a 421 head cow calf operation year round on the allotment. No new range improvements are being proposed on the allotment. Standards are being met on both allotments.

4.0 Environmental Consequences

4.1 Environmental Consequences of the Proposed Action

4.1.1 Wildlife

Under proposed action, the permittees would retain maintenance responsibilities for the range improvements that provide water for wildlife. There is little evidence that continued yearlong grazing at the current stocking rate would alter the vegetative community or preclude the community from change within the constraint of the ecological site.

4.1.2 Livestock Grazing

Under the proposed action, continuous yearlong grazing would continue. Proper stocking rates to include rest rotation, drought observation and mitigation would continue to ensure land health standards are being met.

4.2 Environmental Consequences of the No Action Alternative

4.2.1 Wildlife

Under the no action alternative, the permittee would retain maintenance responsibilities for the range improvements that provide water for wildlife. There is little evidence that continued yearlong grazing at the current stocking rate would alter the vegetative community or preclude the community from change within the constraint of the ecological site.

4.2.2 Livestock Grazing

Under the no action alternative, continuous yearlong grazing would continue. Proper stocking rates to include rest rotation, drought observation and mitigation would continue to ensure land health standards are being met.

4.3 Environmental Consequences of No Grazing Alternative

4.3.1 Wildlife

Under the Taylor Grazing Act, the Bureau would have to purchase the permittees vested interest in the allotments range improvement projects. The Bureau would then wholly own the projects and would have to determine which ones would be kept to provide water for wildlife, and assume all maintenance for the projects kept. Those not determined to be valuable would go into disrepair or be removed from public lands, reducing extra sources of water for wildlife. On the Tom Springs allotment, many of the livestock waters have ground level wildlife drinkers plumbed into them. The Bureau would have to accept full maintenance to keep these waters available. On the Bryce allotment, the primary source of livestock and wildlife water on public land is distributed from a source on state land. Under the no grazing alternative, this source of water would only be available to the Bureau through agreement with the state land department. Permanent removal of livestock would not have an immediate and probably no discernible long term impact on forage and cover. Removal of livestock grazing alone would only have minor impacts on the vegetative components of habitat.

4.3.2 Livestock Grazing

If the no grazing alternative is selected, the permittees would be notified of the decision and a three year process of cancelling the allotment would be initiated. Under the Taylor Grazing Act, the permittees' financial interest in the range improvements on public land would be compensated or purchase would be negotiated. The selection of the no grazing alternative would likely not influence continued grazing on private or state land. Approximately 40 miles of fence would need to be constructed around private property and state land to prevent continuous unauthorized livestock use from the result of no grazing alternative on the public land.

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, Wastes, Invasive and Nonnative Species, Cultural Resources, Native American Religious Concerns, Prime Farmland, VRM, Water

Quality, Wetlands and Riparian Zones, Wild and Scenic Rivers, Wilderness Characteristics, Wilderness, Environmental Justice, Socioeconomics, Visual Resources and T&E Species would have no cumulative impacts from the proposed action or alternatives as they are not found within or adjacent either the Tom Springs or Bryce allotments or the impacts were small enough to be considered indistinguishable.

4.5 Past, Present and Reasonably Foreseeable Future Activities

Livestock grazing in the region has evolved and changed considerably since it began in the late 1870's, and is one factor that has created the current environment.

A review of past grazing use illustrates how overstocking occurred until passage of the Taylor Grazing Act in 1934. There was very little if any regulation of grazing. There was often torrid competition for grazing resources.

In 1936, the first adjudication attempts were made and because of continued overstocking the Soil Conservation Service conducted a Range Survey of public lands.

In 1935 and 1936, the Soil Conservation Service conducted a range survey of the public lands and presented its finding to the Safford District Advisory Board in 1937. The Advisory Board recommended carrying capacities to be set somewhat higher than range survey indicated. Vast majorities of the allotments were over stocked until the implementation of the Upper Gila-San Simon Grazing Environmental Statement. With the implementation of grazing systems and allotment management, a variety of range improvements were constructed throughout the area. A number of range projects have been completed over time on allotments, allotment boundary fences, corrals, wells, and dirt tanks. When added together these range improvements have a minimal effect on the area. There are no additional improvements proposed and there are none expected in the foreseeable future.

Foreseeable actions would include mine expansion on private lands that border federal lands.

Recreation: There are no developed recreation facilities on the allotments; however, dispersed recreation does occur. Dispersed recreation primarily involves small game hunting, target shooting and off-highway vehicle (OHV) operation. Most roads are in stable condition. Over-all, there is very little sign of recreation use or subsequent impacts. There are no recreation related concerns that would contribute to cumulative impacts. However, recreational use is expected to increase in the future with population growth.

Structures: Both allotments have range improvements that are associated with federal ground. The Bryce Allotment has an open pit mine that is located on private lands.

4.6 Cumulative Impacts of the Proposed Action and Alternatives

4.7 Proposed Action

With implementation of the proposed action, livestock grazing would continue as it has resulting in only minor change to wildlife habitat or the wildlife dependent on the habitat. Minor vegetation changes are expected over the long term. With regular rest, heavier areas of livestock use (i.e. Areas within a quarter mile of livestock water) would show some increase in vegetative cover.

Livestock grazing would also remain as is with no new impacts additive to cumulative impacts.

4.8 No Action Alternative

With implementation of the no action alternative, livestock grazing would continue as it has resulting in no change to wildlife habitat or the wildlife dependent on the habitat.

Livestock grazing would also remain as is with no new impacts or additive to cumulative impacts.

4.9 No Grazing Alternative

Implementation of the no grazing alternative would result in some long term changes. Without livestock waters, larger water-dependent species would be limited to the few natural waters on the allotments. This would result in altered habitat uses, change in distribution, and possibly changes in population numbers. To avoid long term impacts to habitat from the loss of livestock waters, the Bureau would have to determine which of the livestock water would be maintained for wildlife. This would also, in the long term, reduce the number and lessen the impacts of human structures on the allotment. Alternately the implementation of the no action alternative would lead to the construction of up to 40 miles of new fence would be additive to the existing fencing in and around the allotments. The new fencing would have a minor impact on movement patterns and present a hazard to larger species of wildlife.

Minor changes in vegetation are expected over the long term. Removal of livestock, in itself, would not noticeably change the vegetative community. It would remain shrub dominated. Herbaceous vegetation cover and diversity would change to a small extent over the long term.

Increased standing vegetative matter would result in increased cover for some species. Long term minor changes in vegetative composition may create a more varied forage source. Removal of livestock grazing alone would not alter the dominant vegetative community. Changes to the vegetative components of wildlife habitat would be minor, occur slowly and be long term.

5.0 Consultation and Coordination

5.1 Persons/Agencies Consulted:

Safford Field Office:

Archaeologist, Dan McGrew

Wildlife Biologist, Tim Goodman

Recreation Planner, Deb Morris

Fisheries Biologist, Heidi Blasius

Geologist, Larry Thrasher

Realty Specialist, Roberta Lopez

Hydrologist, William Wells

Rangeland Management Specialist, Gwen Dominguez

Assistant Field Manager and NEPA Specialist, Joe David

Standard and Guidelines Interdisciplinary Team

Tom Springs Permittee

Bryce Permittee

Interested Parties

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Tom Springs Allotment #46020 Standards and Guidelines Evaluation

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 grazing livestock. Other contributing factors may include, but are not limited to, past land uses, land use restrictions, recreation, wildlife, rights-of-way, wild horses and burros, mining, fire, weather, and insects and disease (Arizona Standards for Rangeland Health and Guidelines for Grazing Administration, 1997).

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

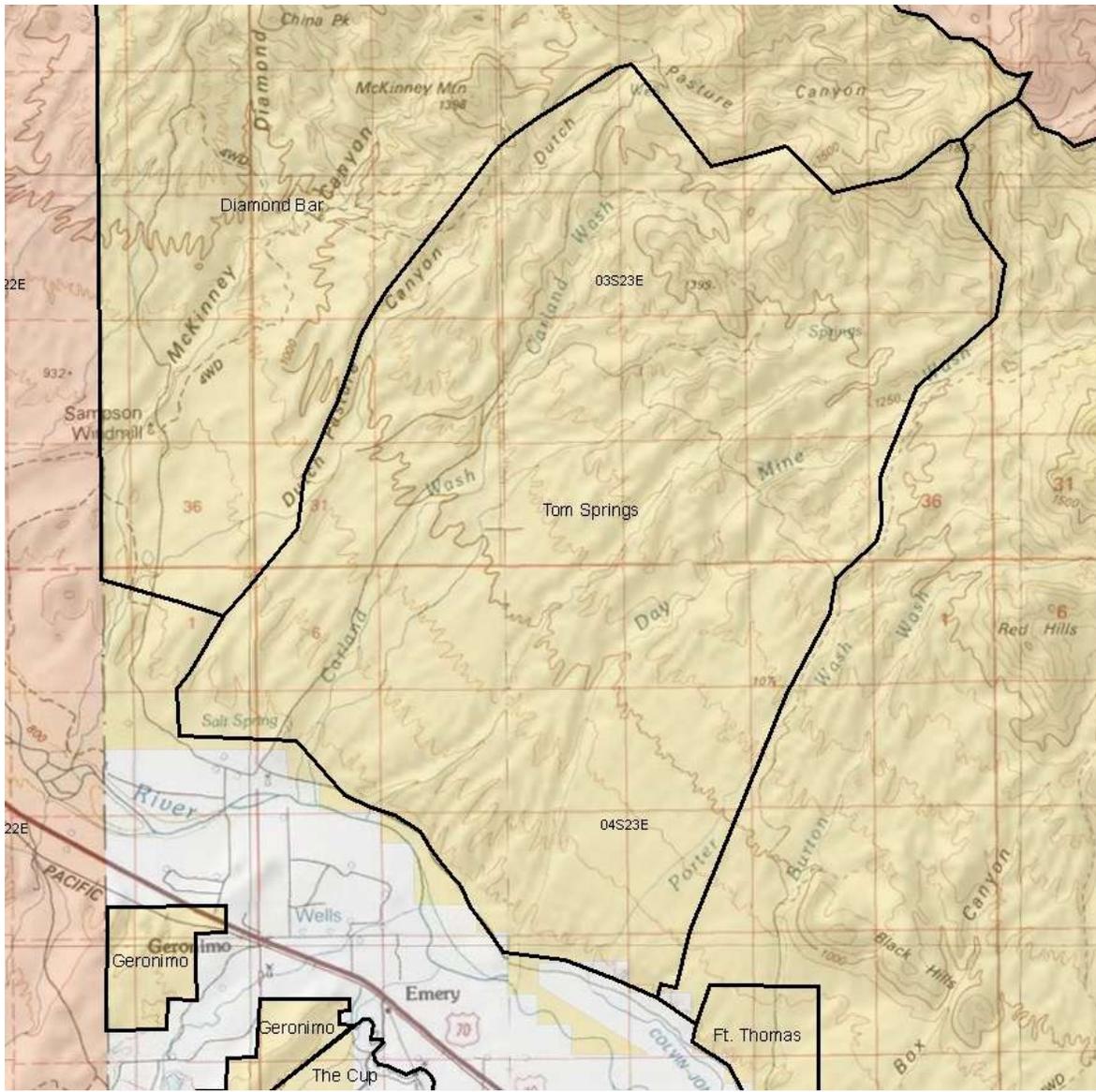
2.0 General Description of Evaluation Area

The Tom Spring Allotment #4602 is located in Graham County, Arizona. The allotment begins approximately 2 miles north of U.S. Highway 70 on Black Rock road just north of Geronimo. It is bordered to the west by the Diamond Bar Allotment and bordered on the east by the Day Mine Allotment. While the allotment does not have any wilderness within it, the Fishhook Wilderness area borders it to the north on the Diamond Bar allotment. The allotment is flanked to the south

by private land that is adjacent to the Gila River and is predominantly used for agriculture i.e. cotton, alfalfa and various grains.

Elevations on the allotment vary from 2800 feet above sea level to 5200 feet ASL. The topography of the northern most part of the Allotment has slopes of 9 to 25% with some extremes of almost 50%. The lower half is comprised of gently sloping alluvial fans intersected by canyons that were created by the various washes found in and bordering the allotment. These slopes generally run from 9-14%. Map 1 depicts the general location and land status of the Tom Springs Allotment.

Map 1. General Location of Tom Spring Allotment



Tom Springs Allotment



3.0 Grazing Use

Grazing use on the Tom Springs allotment is in accordance with the terms and conditions of the permit.

A summary of type and level of grazing management is provided in the table below.

Table 1. Grazing Use on the Tom Springs Allotment #46020.

Active Grazing Use	97 cattle
Season of Use	Yearlong
Kind and Class of Livestock	Cattle
Percent Public Land	100%

Mandatory terms and conditions:

Allotment Number	Livestock		Grazing Period		% Public Land	Type Use	AUMS
	Number	Kind	Begin	End			
46020	97	Cattle	03/01	02/28	100%	Active	1164

Other terms and conditions:

The permittee is required to submit a report of the actual grazing use made on this allotment for the previous grazing period, March 1 to February 28. Failure to submit such a report by March 15 of this year may result in suspension or cancellation of the grazing permit.

Grazing use is authorized in accordance with the Allotment Management Plan. Specifically there are four pastures on the allotment. The Carland Wash and Day Mine pastures alternated grazing years with one being rested every other year. The Headquarters and Porter wash pastures alternate years as well, the exception being that grazing only occurs from October through February and rest occurring March through September on both pastures.

4.0 Evaluation Area Profile

4.1 Land Status

The Tom Springs allotment is identified as an Improve or I category allotment. By definition, I category allotments have one or more of the following: resource conflicts, threatened/endangered species, or resource potential where response to management would yield economic returns. Allotments 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. The Tom Springs Allotment was identified in the Upper Gila/ San Simon Grazing ES - Appendix B Grazing Unit Summary on page A-21 line # 152 for “G” type management that required an Allotment Management Plan revision. It also determined that approximately one third of the allotment’s Range Condition Class was in “poor” condition. Refer to Table 2 for land acreage in the Tom Springs allotment.

Table 2. Land status and acreage of the Tom Springs allotment.

Type of Acreage	Acres	Sections
Public Land	16,875	26.36
Private Land	80	.125
Total	16,955	26.4

4.2 Soils and Ecological Sites

The Natural Resource Conservation Service 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 Tom Springs Allotment is mainly comprised of two MLRAs, 41 and 38. It is then characterized by two Ecological Sites, Volcanic Hills 38-1 (12-16 inches/per year) and Limy Slopes 41-2 (8-12 inches/per year). For a complete description of the soils on the Tom Springs 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.

4.3 Wildlife Resources/Special Status Species

The Tom Springs Allotment has diverse geological forms, elevations, slopes, and vegetation. Resulting in a diversity of wildlife species from large mammals such as black bear, mule deer, white tailed deer, javelina, bighorn sheep, golden eagles, coyote, bobcats, Kit fox, grey fox, mountain lion, Gamble quail and Scaled quail. Management emphasis in this area is on large game animals specifically mule deer, white tailed deer, javelina and bighorn sheep. There are also various other reptiles, bats and other non-game species.

Deer:

Habitat degradation from excessive herbivory and drought can alter and / or eliminate cover and food needed by deer and other wildlife species. Perennial bunch grasses and low shrubs are required fawning habitat (*i.e.*, cover) for 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. 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 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). In addition, fragmentation of habitat by roads, farms, communities, etc. has reduced the ability of deer to access traditional water sources.

Deer inhabit the upper half of the allotment year round. The mix of vegetative species, vegetative structure and water distribution provides good habitat for deer. Deer use the drainages in the lower half of the allotment as movement corridors and may spend time seasonally in the lower half of the allotment when ephemeral forbs and grasses are available.

Javelina:

Like 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).

There are resident populations of javalina on the Tom Springs Allotment. They are more strongly associated with the diverse vegetation in the upper half of the allotment and the southern boundary of the allotment next to the farm field and the Gila River. The area in between is used seasonally when ephemeral vegetation is available.

Bighorn Sheep:

Bighorn have been documented in the Gila Mountains within five miles of the Tom Springs Allotment this sheep population is doing well and expanding north and east from the Blue River at the New Mexico border and will likely colonizes the upper half of the Tom Springs Allotment in the next 10 years. Important features of desert bighorn habitat are cliffs, rocky outcrops, and talus slopes which are used as escape terrain. Bighorn are closely associated with mixed cacti-mixed scrub on rocky slopes, mountain upland and rock outcrops. Natural communities associated with the Volcanic Hills ecological sites on the Tom Springs Allotment provides suitable habitat. Due to their affinity for steep rocky terrain their habitat use minimally overlaps areas used by cattle.

Bighorn forage on grasses, shrubs and forbs, as well as on shoots and flowers of prickly pear, cholla cactus (*Opuntia spp.*) and other succulents (for example, barrel cactus, agaves). Browse becomes more important in the fall and winter and in the southern and western part of bighorn’s range. Important browse species include acacias (*Acacia spp.*), mesquite (*Prosopis spp.*), fairy duster (*Calliandra eriophylla*), Mormon tea (*Ephedra spp.*), and desert mistletoe (*Phoradendron californicum*).

Some natural water exists in the upper portions of the allotment which would provide for bighorn sheep. A few of the waters in the upper end of the allotment developed for livestock may also benefit bighorns as they expand their range into the allotment. An analysis of the distribution and reliability of waters in the upper most portions of the allotment would be useful in managing and supporting bighorn sheep.

4.3.1 Federally Listed and Candidate Species

The Safford Field Office implements it grazing program consistent with the Biological Opinion on the Gila District Livestock Grazing Program (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 in the table below:

April 11, 2013

<u>Common Name</u>	<u>Scientific Name</u>	<u>Listing Status</u>	<u>Affected</u>
American peregrine falcon	<i>Falco peregrinus anatum</i>	D	Considered BLM Sensitive Species. No eyries are known to occur within five miles of the allotment.

Apache trout	<i>Oncorhynchus apache</i>	T	No affect. There are no known locations or suitable habitat within five miles of the allotment.
Arizona Cliff-rose	<i>Purshia subintegra</i>	E	No affect. There are no known locations or suitable habitat within five miles of the allotment.
Bald Eagle	<i>Haliaeetus leucocephalus</i>	D	Considered BLM Sensitive Species. Wintering bald eagles are known to occur along the Gila River. No portion of the River is within the allotment boundaries.
Chiricahua leopard frog	<i>Rana chiricahuensis</i>	T	No affect. There are no known locations or suitable habitat within five miles of the allotment.
Desert pupfish	<i>Cyprinodon macularius</i>	E	No affect. There are no known locations or suitable habitat within five miles of the allotment.
Desert tortoise, Sonoran population	<i>Gopherus agassizii</i>	C	Considered a BLM Sensitive Species. There are no known locations or suitable habitat within five miles of the allotment.
Gila chub	<i>Gila intermedia</i>	E	No affect. There are no known locations within five miles of the allotment. The Gila River is historic habitat but no longer supports the species.
Gila topminnow	<i>Poeciliopsis occidentalis occidentalis</i>	E	No affect. There are no known locations or suitable habitat within five miles of the allotment.
Headwater chub	<i>Gila nigra</i>	C	Considered a BLM sensitive species. There are no known locations or suitable habitat within five miles of the allotment.
Lesser long-nosed bat	<i>Leptonycteris curasoae yerbabuena</i>	E	No affect. There are no known roost locations within 40 miles of the allotment.
Loach minnow	<i>Tiaroga cobitis</i>	E	No affect. There are no known locations within five miles of the allotment. The Gila River is historic habitat but no long supports the species.
Mexican spotted owl	<i>Strix occidentalis lucida</i>	T	No affect. There are no known locations or suitable habitat within five miles of the allotment.
Mount Graham red squirrel	<i>Tamiasciurus hudsonicus grahamensis</i>	E	No affect. There are no known locations or suitable habitat within five miles of the allotment
Northern Mexican gartersnake	<i>Thamnophis eques megalops</i>	C	Considered a BLM Sensitive Species. There are no known locations within five miles of the allotment. The Gila River is historic habitat, but the species is considered likely expatriated.
Ocelot	<i>Leopardus pardalis</i>	E	No affect. The upper have of the allotment may provide suitable habitat for the species. Of the few recent known locations, the closest to the allotment was near Globe 45 miles away. There is no reasonable expectation that the species occurs on the allotment.
Razorback sucker	<i>Xyrauchen texanus</i>	E	No affect. Razorback suckers may occur in the Gila River at such low population levels they are not detectable. The 100 year flood plain of the Gila River is designated critical habitat for razorbacks. The allotment does not include any portion of the river or the 100 years floodplain and is separated from them by private land.
Round tailed chub	<i>Gila robusta</i>	C	Considered a BLM sensitive species. Historically occurred in the Gila River and may still occur in the River near the allotment at very low population levels. There is no portion of the Gila River aquatic

			habitat within the allotment boundaries.
Southwestern willow flycatcher	<i>Empidonax traillii extimus</i>	E	No affect. The 100 year floodplain of the Gila River is critical habitat for flycatchers and flycatchers are known to occur along the river adjacent to the allotment. Impacts to willow flycatchers from authorized grazing on the Tom Springs Allotment have been consulted on (BO # 22410-2006-F-0414). Further discussion in text.
Spikedace	<i>Meda fulgida</i>	E	No affect. There are no known locations within five miles of the allotment. The Gila River is historic habitat but no longer supports the species.
Wet Canyon talussnail	<i>Sonorella macrophallus</i>	CA	There is no known occurrence on BLM administered public lands.
Yellow-billed Cuckoo	<i>Coccyzus americanus</i>	C	Considered a BLM sensitive species. The yellow-billed Cuckoo is a summer migrant occurring in the riparian forests along the Gila River adjacent to the allotment.

E – Endangered T – Threatened C – Candidate CA - Conservation Agreement D - Delisted

Reference <http://arizonaes.fws.gov/>

Willow Flycatcher

The southern boundary of the Tom Springs Allotment is adjacent to an important willow flycatcher breeding area. The allotment proper does not contain occupied, suitable or critical habitat for the species. The adjacent willow flycatcher habitat is predominately privately owned. The BLM has no practical control of the adjacent flycatcher habitat. However, the BLM is committed to the applicable conservation measures (BO # 22410-2006-F-0414) for willow flycatchers as follows:

1. **Range Improvements:** The BLM will locate range improvement projects outside of flycatcher occupied areas, except for fences, cattle guards, and gates needed to exclude or better manage livestock. Within breeding habitat, implement construction, maintenance, or management activities outside of the flycatcher breeding season. Any range improvement project within two miles of occupied, suitable or critical habitat, including those proposed to improve flycatcher habitat, will be reviewed by the FWS for compliance with the Biological opinion.
2. **Cowbird Control:** To reduce the likelihood of nest abandonment and loss of flycatcher productivity owing to cowbird parasitism associated with BLM-authorized grazing activities in or near occupied habitats, BLM will implement the following:
 - a. Investigate, identify, and assess livestock concentration areas on BLM lands in the action areas that are likely foraging areas for cowbirds. This will be done within a 5-mile radius of occupied or un-surveyed suitable southwestern willow flycatcher habitat. The BLM will evaluate ways to reduce any concentration areas found. The BLM will pay special attention to those facilities within two miles of breeding habitat, since this is the range in which alteration of concentration areas are most effective.

- b. The BLM will ensure that willow flycatcher surveys and nest monitoring take place at least every three years in the areas where the BLM controls significant breeding habitat and public land grazing is a predominate use on adjacent lands. This will be initiated along the Gila River between Winkleman and the Dripping Spring Wash confluence and between Kelvin Bridge and the Buttes. If jointly determined other areas may be added. Monitoring protocols will be updated as necessary and nest monitoring may use surrogate species.
- c. If cowbird parasitism in monitored areas is determined to be ten percent of nests or greater, the BLM and the FWS will meet and discuss reasons for the parasitism and possible management actions.

Through this allotment evaluation the BLM is not proposing any new livestock improvements, modification of improvements or any change in management that would increase the concentration of livestock within two miles of flycatcher habitat. The Bureau does not control a significant portion of the willow flycatcher habitat along this portion of the Gila River. The predominant use of lands immediately adjacent to flycatcher habitat is farming, irrigated pasture, commercial and residential development.

Cowbirds primarily consume seeds and grains and become concentrated in areas that provide this food source. The BLM does not allow supplemental feeding on public land; grains therefore, are not a source of cowbird concentration on public lands within the allotment. Cowbirds also concentrate in areas where livestock feces is concentrated. On grazing allotments including Tom Springs a majority of the feces is disbursed, but some is concentrated around livestock waters, loafing areas and corrals. These areas of livestock and feces concentrations are not used continuously. Corrals are used sporadically as needed to work the livestock, in addition livestock move around the allotment changing watering locations and loafing areas. Approximately 75 percent of the allotment and therefore most of the livestock improvements are within five miles of flycatcher habitat. On public land within two miles of flycatcher habitat there are two water troughs, one ephemeral dirt tank and one set of corrals. In all these livestock improvements represent less than a half-acre of where feces are concentrated. Cowbirds have not been noted to occur at disproportionate concentration levels at these locations.

The most current information available to the Bureau on willow flycatchers and flycatcher habitat on private lands along the Gila River is from the Annual Report for the Roosevelt Habitat Conservation Plan (Salt River Project, 2011), and the Annual Implementation Report for the Horseshoe and Bartlett Reservoirs Habitat Conservation Plan (Salt River Project, 2011). Both of these plans involve conservation lands for willow flycatchers in the Ft. Thomas area. Although cowbird management is part of their commitment neither report indicates that cowbird parasitism is currently an issue of particular concern. There is currently no indication that cowbird parasitism is un-naturally high along this portion of the Gila River. There is currently no indication that livestock concentrations on public land within the allotments are contributing to higher concentrations of cowbirds, resulting in higher flycatcher nest parasitism.

4.3.2 Special Status Species

The Safford Field Office reviewed the Bureau statewide list of Sensitive Species listing for the Tom Springs Allotment provided by the Arizona Game and Fish Department, Heritage Data Management System on May 1, 2009 (AGFD #M09-04213056) showed known occurrence for the following species

Pima Indian Mallow	<i>Abutilon parishii</i>	AGFD Species of Special Concern
Western Yellow-billed Cuckoo	<i>Coccyzus americanus occidentalis</i>	AGFD Species of Special Concern
Bylas Springsnail	<i>Pyrgulopsis sancarlosensis arizonae</i>	AGFD Species of Special Concern

Pima Indian Mallow is known from one location in the Gila Mountains. The species is primarily associated with Sonoran desert shrub communities. Like the saguaro cactus the Gila Mountains are probably the extreme eastern edge of the species distribution. There is some potential for the species to occur on the allotment. The species is found on steep hill side and in association with rocks and rock outcrops. The habitat for the species is typically not grazed to any extent by livestock. There is no expected negative effect to this species from grazing. (Can reference AGFD Document that states there are no real treats to the species in Arizona)

Western yellow-billed cuckoo occurs seasonally and nests in mature riparian vegetation along the Gila River. The Tom Springs Allotment is adjacent to but does not contain any portion of the Gila River. Livestock management on the allotment will not impact the species.

Recent information documents that that the Bylas spring snail a Bureau sensitive species occur at Porter Wash Ponds on the Tom Springs Allotment. The springs at Porter Wash feed four small ponds providing approximately 600 square feet of surface area, which have recently been excluded from livestock use. There are no known impacts to spring snails from livestock use on the allotment.

4.4 Special Management Areas

There are no other special management areas in or adjacent to the Toms Springs Allotment.

4.5 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. Some OHV use does occur off-road, mostly in the larger ephemeral washes and congregation areas. The extent of the impacts this use has on the vegetative community and/or wildlife habitat has been steadily increasing in recent years.

4.6 Visual Resources

The Safford Resource Management Plan (RMP) has designated public lands within the Tom Springs Allotment as Visual Resource Management (VRM) Class III. The objective of this class

is to partially retain the existing character of the landscape. The level of change to the characteristic landscape should be moderate.

4.7 Cultural Resources

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

In compliance with the BLM Cultural Resources Programmatic Agreement, the Arizona BLM-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 (9/86) and the Safford Resource Management Plan (9/78). 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 are no areas of livestock congregation that required an intensive field inventory. 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.

4.8 Noxious Weeds/Invasive Species

There are no known or documented occurrences of state listed noxious weeds on the Tom Springs allotment.

4.9 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. Refer to Appendix 1.

4.10 Allotment Objectives

4.10.1 Arizona Standards for Rangeland Health and Guidelines for Grazing Administration

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

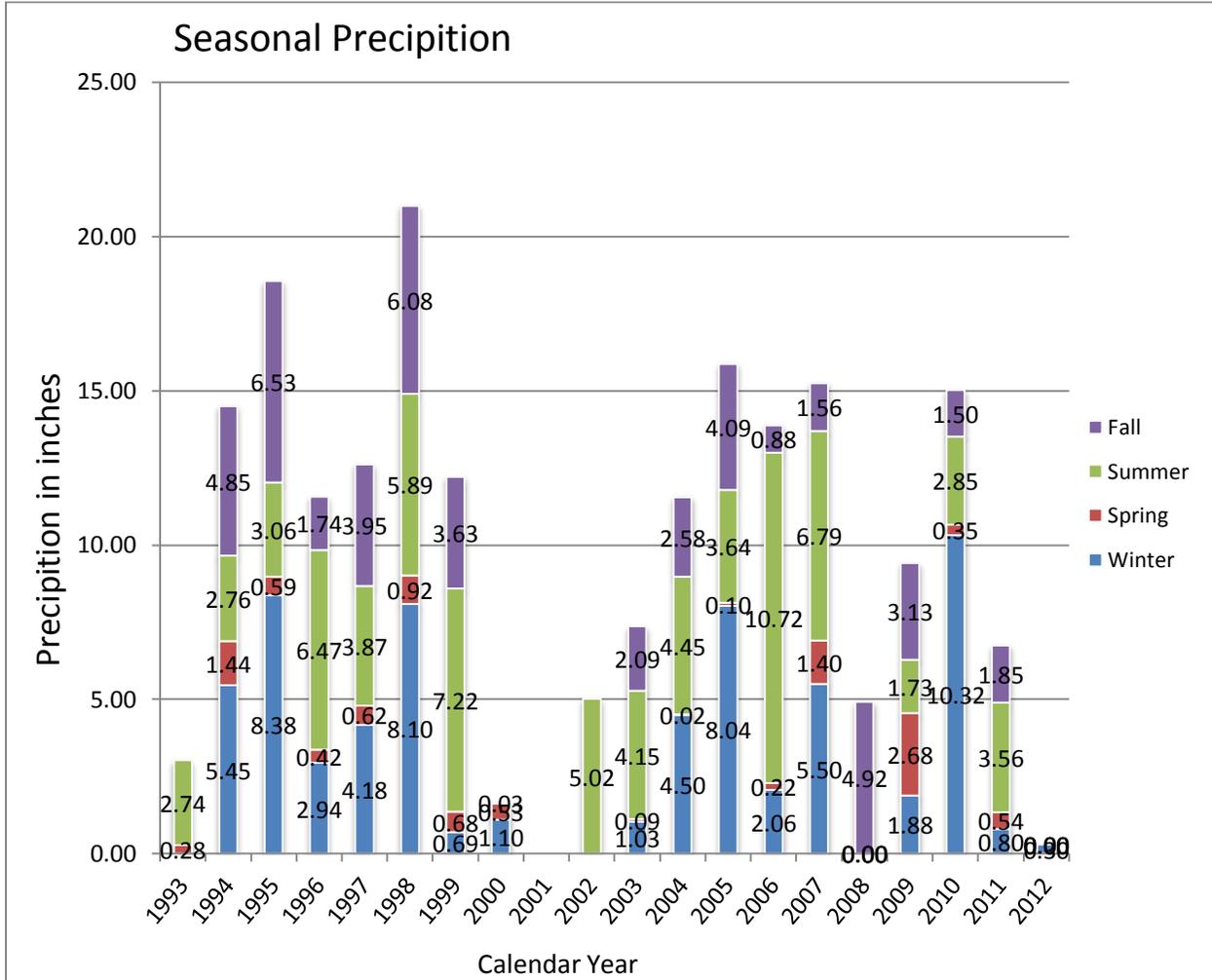
Maintain or improve productive and diverse upland and riparian-wetland plant communities of native species.

5.0 Management Evaluation

5.1 Precipitation Data

Precipitation data was collected from the National Oceanic and Atmospheric Administration (NOAA) from one station: Black Hills. Additional data was compiled from the Hell's Hollow rain gauge administered by the Safford Field Office and the Oliver Knoll rain gauge administered by NDAP. The 20 year average annual precipitation for the Gila Mountain area is approximately 9.86 inches per annum. The 20 year average for the Safford area is 5.87 inches per annum.

Figure 1: Tom Springs Regional Precipitation Chart



5.2 Rangeland Monitoring

5.2.1 Actual Use

Actual use data for livestock was determined through Actual Use Reports, Form 4130-5, or when unavailable, from past billing statements. Refer to Table 4 for actual use from the previous 10-years.

Table 4. Actual use on Tom Springs Allotment.

Tom Spring #4602	2012	2011	2010	2009	2008	2007	2006	2005	2004	2003	2002	2001
Preference												

Tom Spring #4602	2012	2011	2010	2009	2008	2007	2006	2005	2004	2003	2002	2001
AUM's =1164	0*	0*	0*	816	840	840	840	1164	504	1164	576	1164

* Voluntary Non-Use

5.2.2 Upland Health Assessment

Upland health assessments were completed at two key areas on the Tom Springs Allotment on March 14, 2011. These 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 5 for a summary of the assessments on the Tom Springs allotment. Methods for the upland health assessments are described in “Interpreting Indicators of Rangeland Health, Technical Reference 1734-6, 2000”.

Table 5. Summary of upland health assessments at each key area.

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

S- Soil/site stability

H- Hydrologic function

B- Biotic integrity

5.2.3 Ground Cover

Ground cover data was collected at three key areas on the Tom Springs allotment in 2006 and 2011. These data were collected in accordance with procedures for point cover data outlined in “Sampling Vegetation Attributes, Interagency Technical Reference, 1996”. Refer to Appendix 2 for ground cover data. From 2006 to 2011, there was a decrease in bare ground and a corresponding increase in litter.

5.2.4 Frequency/Trend

Pace frequency data was collected in 2006 and 2011 on the Tom Springs Allotment. Pace frequency data was collected in 2006 for the first time and will serve as the baseline data. Data

was collected in accordance with procedures outlined in “Sampling Vegetation Attributes, Interagency Technical Reference, 1996”. Frequency data for grass and forbs were collected as basal hits. Frequency data for shrubs were collected as canopy cover. Refer to Appendix 3 for frequency data. This data showed an increase in percent frequency with perennial grasses as well as annual forbs and annual grasses from that of 2006.

5.2.5 Composition

Species composition data were collected using the Dry Weight Rank (DWR) methodology at each key area starting in 2006. DWR data were collected in accordance with procedures outlined in “Sampling Vegetation Attributes, Interagency Technical Reference, 1996”. Refer to Appendix 3 for composition data.

6.0 Conclusions

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

6.1 TS-1 Limy Slopes 8-12”

Standard 1. Upland Sites: Based on the indicators, Standard 1 is being met.

Standard 1. Upland Sites

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

As indicated by such factors as:

- *Ground Cover*
 - *litter*
 - *live vegetation, amount and type (e.g. grass, shrubs, trees, etc.)*
 - *rock*
- *Signs of erosion*
 - *flow pattern*
 - *gullies*
 - *rills*
 - *plant pedestalling*

6.1.1 Discussion

Standard #1 Upland Sites:

On March 14th, 2011 a Rangeland Health Evaluation was completed on the allotment. The evaluation’s preponderance of evidence indicated that there was a “none to Slight” rating for

departure from the Ecological Site Description and Ecological Reference Areas. The ecological site guide identifies the site as having coarse textured soils with very gravelly surfaces make this site a poor producer of runoff. The Soil/Site Stability was within normal parameters. Hydrologic Function was operating at expected levels. Biotic integrity was stable.

Standard # 2 Riparian-Wetland Sites: While there are no listed riparian areas within the allotment there are four springs associated with the allotment. The spring on the upper half of the allotment is not named and has been developed (dug out) in the past by a previous permittee. There will be no further development of this spring without Bureau approval. In the future, if the permittee proposes to maintain this spring it will be done in accordance with Bureau policy, the Safford RMP and appropriate environmental analysis. The spring will be considered with other springs field office wide and prioritized for improvement or protection. PFC has not been conducted at this site. The remaining springs are in the southern half of the allotment and will be referred to as “Porter Wash Complex”. This complex is being excluded from livestock use as per EA# DOI-BLM-AZ-G0110-2010-0019. This area has been identified for enhancement and restoration for both aquatic and terrestrial species. PFC was conducted on 08/31/2004 and was found to be functional at risk with no apparent trend. PFC process will be conducted every three years. Cattle are excluded from this complex as part of the restoration plan.

Standard 3. Desired Resource Conditions: Overall, based on the indicators, Standard 3 is being met.

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

As indicated by such factors as:

- *Composition*
- *Structure*
- *Distribution*

6.1.2 Discussion

Standard #3

Ground cover data, which was gathered in 2006 and 2011, show a decrease in bare ground at the key area. The reduction in bare ground can be attributed to favorable rainfall and is represented in the monitoring data by the increase in litter and basal hits on vegetation. However, composition data collected in the afore-mentioned span of years cannot be compared. The Dry Weight Rank (DWR) method was adopted in 2006 because it is better suited to the site. A more analytical sample of overall condition and composition is collected on this range site with the DWR method. The 2006 DWR data will serve as the baseline for future analysis. Frequency data was also collected in 2006.

This key area falls within the ecological site 41-2 Limy Slopes with a precipitation range of 8 to 12 inches per year. These soils are well drained, coarse textured, stratified and high in calcium carbonates. On the Limy slopes the Historic Climax Plant Community is dominated by creosote bush. Annual grasses and forbs are an important part of the plant community in wet seasons. Perennial grasses and forbs are minor components in the potential plant community. Cryptogams are common on this site, often colonizing areas with low gravel covers. (Limy Slopes, 41-2 NRCS Ecological Site Description).

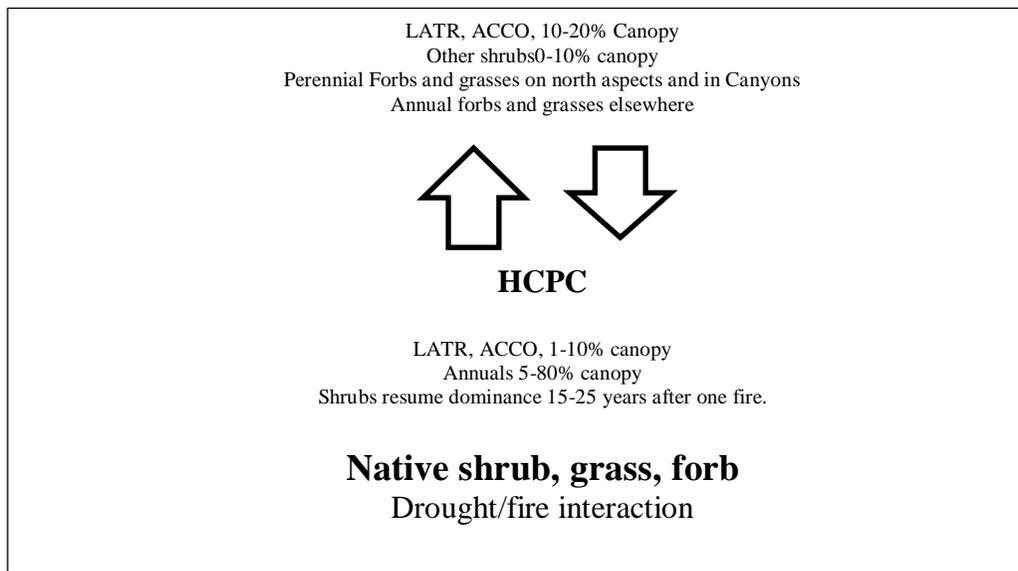
Site specific or desired plant community (DPC) objectives were established based on data collected in 2006 and 2011. Objectives for DPC are to:

Limy Slopes Ecological Site:

- Shrubs 10-20% Composition
 - Key Species
 - *Larrea tridentata*, *Acacia constricta*
 - Various Half Shrubs
- Perennial Grasses
 - Fluctuate with climate
 - Species represented in average-above average rainfall years
 - *Muhlenbergia porteri*, *Aristida spp.*, *Dasyochloa pulchella*
 - Annuals Grasses and Forbs

The Limy slopes ecological site is within the expected Historic Climax Plant Community state and will be managed to stay within these parameters. To stay within HCPC the Headquarters and Porter Wash pastures will continue to be used more as ephemeral range with the majority of use coming in the spring as outlined in the AMP. This is typically the seasonal time when there is annuals occurring from winter/spring rains.

Figure 2. Historic Climax Plant Community



6.2 TS-3 Volcanic Hills 38-1 (12-16 inches/per year)

Standard 1. Upland Sites: Based on the indicators, Standard 1 is being met.

Standard 1. Upland Sites

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

As indicated by such factors as:

- *Ground Cover*
 - *litter*
 - *live vegetation, amount and type (e.g. grass, shrubs, trees, etc.)*
 - *rock*
- *Signs of erosion*
 - *flow pattern*
 - *gullies*
 - *rills*
 - *plant pedestaling*

6.2.1 Discussion

Standard #1 Upland Sites:

On March 14th, 2011 a Rangeland Health Evaluation was completed on the allotment. The evaluation's preponderance of evidence indicated that there was a "None to Slight" rating for departure from the NRCS Ecological Reference Area. The surface texture is clay loam to clay. The erosion hazard is slight due to gravel, cobble and rock covers. Soil/Site Stability was within normal parameters. Hydrologic Function was functioning at expected levels. Biotic integrity was intact.

Standard # 2 Riparian-Wetland Sites: Not Applicable.

Standard 3. Desired Resource Conditions: Overall, based on the indicators, Standard 3 is progressing towards being met.

As indicated by such factors as:

- *Composition*
- *Structure*
- *Distribution*

6.2.2 Discussion

Baseline Frequency and Dry Weight Rank (DWR) inventory was performed in 2006 at this site. Frequency and DRW was monitored again in 2011. Ground cover data which was gathered in 2006 and 2011 show a decrease in bare ground at the key area and increase in litter.

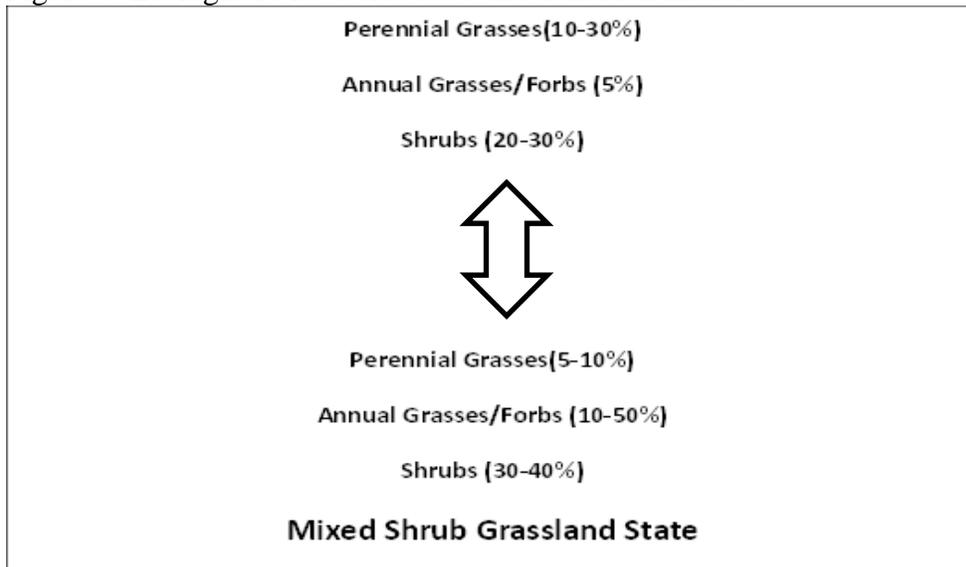
Desired Future Conditions

The historic, native, plant community is a diverse mixture of perennial grasses, suffrutescent forbs, shrubs, succulents and desert trees. A rich flora of native annual forbs and grasses, of both the winter and summer seasons, exist in the plant community. Periodic, naturally occurring, wildfires were important in maintaining the potential plant community.

Northern exposures have a higher percentage of mid-grasses and some cool season grasses that will not occur on south slopes. North slopes will also be more likely to experience tree increases especially juniper species, mesquite and canotia. Southern exposures will have a higher percentage of shrubs and succulents in the plant community. More xeric grasses will dominate southern exposures (tanglehead). At elevations near precipitation zone upper boundaries the northern slopes will look more like the plant community of the 16 to 20 inch precipitation zone in MLRA 38. At lower precipitation zone boundaries southern exposures will look more like the plant community of the site in the 10 to 13 inch zone of MLRA 40 (Upper Sonoran).

When comparing the Ecological Site Guide state and transition models with monitoring data and the Upland Health Assessment at this site it is currently with- in DPC standards.

Figure 3. Ecological Site Guide state and transition model.



The Volcanic Hills ecological site will continue to be managed to stay within DFC and promote diversity in perennial grass and keep shrubs at current levels for wildlife cover.

Site specific or desired plant community (DPC) objectives were established based on data collected in 2006, 2011 and the Upland Health Assessment. Objectives for DPC are to:

- Maintain Perennial Grass Species Composition at 10-30%
- Maintain Native Shrub/Trees Species Composition at 20-30%
- Maintain Annual grasses and forbs at 5-10%

7.0 Recommendations

Issue the 10-year grazing permit with the following terms and conditions.

Mandatory terms and conditions:

Allotment Number	Livestock		Grazing Period		% Public Land	Type Use	AUMS
	Number	Kind	Begin	End			
46020	97	Cattle	03/01	02/28	90%	Active	756

Rationale:

Monitoring data and land health standards indicate that Tom Springs is meeting all standards. Comparison to ecological site descriptions indicated that this area is performing at expected levels and therefore should continue to be managed in the same manor.

8.0 Consultation

Prepared By/Staff Review:

Signature

R.J. Estes, Rangeland Management Specialist
 Tom Schnell , Recreation/Wilderness Specialist
 Tim Goodman, Wildlife Biologist/T&E
 Bill Wells, Hydrologist
 Dan McGrew, Archaeologist

9.0 Selected Management Action

Implement the grazing and other management actions identified in 7.0 Recommendations.

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
Field Manager- Safford Field Office

Date

10.0 APPENDIX A

Key Area Locations

Site	GPS (NAD27 CONUS)
TS-1	12S 0593102(E) 3666968(N)
TS-3	12S 0596114(E) 3666768(N)

11.0 APPENDIX B

Ground Cover Data

TS-1

Ground Cover %	2006	2011
Bare Ground	12.5%	0%
Gravel	34.5%	35%
Rock	26.5%	41%
Litter	25.0%	45%
Vegetative Base	1.5%	0%
Total	100%	101%*

*- Rounding error in program

TS-3

Ground Cover %	2006	2011
Bare Ground	8.5%	6%
Gravel	15.5%	17%
Rock	30%	22%
Litter	41.5%	51%
Vegetative Base	4.5%	5%
Total	100%	101%*

*- Rounding error in program

12.0 APPENDIX C

Composition and Frequency Data

Site: TS-1

Site History - Frequency

Site Class: BLM || Gila || Safford || Tom Springs (4602) || Tom Springs

Site ID: TS-1

% Plant Frequency		Quadrat Size: 40x40 cm									
Species	7/26/96	4/6/11									
Woody Species											
Acacia constricta	1										
Acacia constricta-canopy	8	7									
Acacia greggii-canopy	2	4									
Gutierrezia sarothrae-canopy		1									
Larrea tridentata	2	4									
Larrea tridentata-canopy	10	24									
Lycium pallidum	1										
Lycium pallidum-canopy	3										
Opuntia-canopy	1	1									
Opuntia fulgida-canopy	1	1									
Opuntia fulgida		1									
Ziziphus obtusifolia-canopy	1	4									
Ziziphus obtusifolia		1									
Grasses - Perennial											
Pleuraphis multica	11	12									
Annuals											
Annual forb(s)	18	80									
Annual grass(es)	66	52									
Unclassified											
Centaurium floribundum	1	1									
Centaurium floribundum-canopy	6	4									
Ephedra	1										
Ephedra-canopy	3	3									
Evolvulus	1										
Prosopis-canopy	3	1									
Senna	15										

**Percent composition, TS-1, Tom Springs Allotment,
Safford Field Office, BLM. 2006 and 2011.**

<u>% Composition 2006</u>		% Composition 2011
Perennial grasses		
Tobosa	18.92	23
Perennial forbs		
Evolvulus	1.08	
Desert senna	20.69	80
Trees and shrubs		
Creosote	21.96	41
Whitethorn acacia	10.69	10
Catclaw acacia	1.96	3
Ephedra	3.04	3
Palo verde	12.84	8
Lycium spp.	2.94	3
Greythorn	0.98	8
Mesquite	4.61	2
Prickly pear	0.1	2
Vine-unknown	0.1	1
Cholla	0.1	

TS-3

Site History - Frequency

Site Class: BLM || Gila || Safford || Tom Springs (4602) || Tom Springs

Site ID: TS-3

% Plant Frequency		Quadrat Size: 40x40 cm									
Species	8/22/06	4/8/11									
Woody Species											
Acacia constricta-canopy		3									
Acacia greggii-canopy		1									
Dasyliion wheeleri-canopy	1	1									
Echinocereus	1	2									
Ericameria laricina-canopy	1	1									
Eriogonum wrightii	3	2									
Eriogonum wrightii-canopy	2										
Gutierrezia sarothrae	1	15									
Gutierrezia sarothrae-canopy	2	9									
Juniperus monosperma-canopy		2									
Lycium pallidum-canopy	1										
Nothofagus microcarpa-canopy	1	2									
Nothofagus microcarpa		1									
Opuntia-canopy	2	5									
Opuntia fulgida-canopy		1									
Opuntia versicolor		1									
Parthenium incanum	1										
Parthenium incanum-canopy		1									
Quercus turbinella	1										
Quercus turbinella-canopy		1									
Simmondsia chinensis	3	2									
Simmondsia chinensis-canopy	13	14									
Yucca baccata		1									
Yucca baccata-canopy		1									
Ziziphus obtusifolia		1									
Ziziphus obtusifolia-canopy		4									
Grasses - Perennial											
Aristida	4	9									
Bouteloua curtipendula	19	15									
Bouteloua eriopoda	11	16									
Hilaria belangeri	1	3									
Leptochloa dubia		2									
Muhlenbergia porteri	1										

Site Class: BLM || Gila || Safford || Tom Springs (4602) || Tom Springs

Site ID: TS-3

Pleuraphis mutica	29	17									
Sporobolus cryptandrus		1									
Tridens muticus	4	8									
Forbs - Perennial/Biennial											
Perennial forb(s)-fern	1										
Sphaeralcea	1	6									
Annuals											
Annual forb(s)	9	10									
Annual grass(es)	99	30									
Unclassified											
Aster		1									
Boerhavia		1									
Ephedra-canopy	3	2									
Evolvulus		1									
Krameria-canopy		1									
Prosopis-canopy	2	6									
Prosopis		2									

**Percent composition, TS-3, Tom Springs Allotment,
Safford Field Office, BLM. 2006 & 2011.**

<u>% Composition 2006</u>		% Composition 2011
Perennial grasses		
Sideoats grama	18.09	14
Threeawn	5.47	7
Curly mesquite	1.89	2
Black grama	10.93	10
Slim tridens	4.57	9
Bush muhly	0.3	0
Tobosa	29.42	9
Perennial forbs		
Globemallow	1	4
Unk forb (same as HM-2)	0.1	0
Trees and shrubs		
Jojoba	11.93	12
Mariola	1.39	1
Beargrass	1.79	3
Snakeweed	1.69	13
Mesquite	2.49	2
Shrubby buckwheat	4.08	1
Turpentine bush	1.29	1
Mormon tea	3.18	1
Sotol	0.1	4
Prickly pear	0.3	3

13.0 Literature Cited

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Appendix 2: Arizona Standards and Guides Evaluation – Bryce Allotment

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Bryce Allotment #46080 Standards and Guidelines Evaluation

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 permittee achieve standards. Guidelines are specific to livestock grazing. Guidelines are best management practices such as grazing systems that could be used to achieve rangeland health standards.

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

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

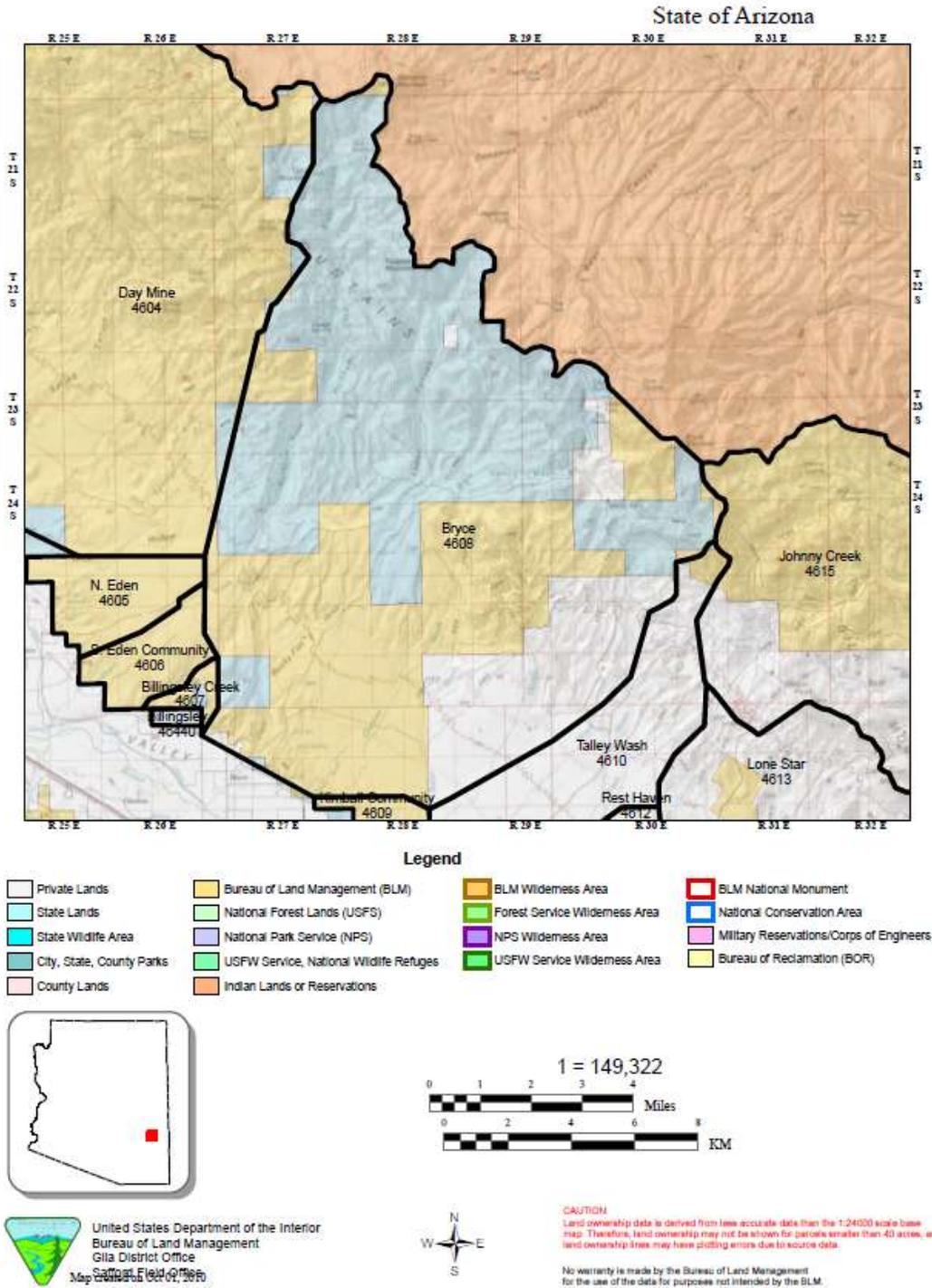
2.0 General Description of Evaluation Area

The Bryce Allotment #4608 is located in Graham County, Arizona. The Bryce allotment is located eight miles northwest of Safford. It is bordered to the west by the Day Mine Allotment, San Carlos Apache Indian Reservation to the North, Johnny Creek and Talley Wash Allotments to the east and Kimball Allotment/ Gila River Flood Plain to the south. The Bryce Allotment currently has an open pit copper mine that is operated on private lands by Freeport McMoran.

Elevations on the allotment vary from 2860 feet above sea level to 7298 feet ASL. The topography of the northern most part of the allotment has slopes of 10 to 35% with some extremes of almost 50%. The lower half is comprised of gently sloping alluvial fans intersected by canyons that were created by the various washes found in and bordering the allotment. These slopes generally run from 9-14%. Map 1 depicts the general location and land status of the Bryce Allotment.

All watershed drainage is to the southwest to the Gila River. There is one stream on the allotment with potential for perennial reaches. This stream is Markham Creek which is currently perennial in upstream sections on the Day Mine Allotment. It is currently dry throughout the Bryce allotment. Management for Markham Creek is predominantly the responsibility of state lands.

Map1: Bryce Allotment and vicinity.



3.0 Grazing Use

Grazing use on the Bryce allotment is in accordance with the terms and conditions of the permit.

A summary of type and level of grazing management is provided in the table below.

Table 1. Grazing Use on the Bryce Allotment #46080.

<u>Bryce Allotment #46080</u>	
Active Grazing Use	421 cattle 30 Horses
Season of Use	Yearlong
Kind and Class of Livestock	Cattle/Horses
Percent Public Land	31%

Mandatory terms and conditions:

Allotment Number	Livestock		Grazing Period		% PL	Type Use	AUMS
	Number	Kind	Begin	End			
46080 Bryce	421	Cattle	3/1	2/28	31%	Active	1566
	30	Horses	3/1	2/28			112

Other terms and conditions:

The permittee is required to submit a report of the actual grazing use made on this allotment for the previous grazing period, March 1 to February 28. Failure to submit such a report by March 15 of this year may result in suspension or cancellation of the grazing permit.

Grazing use is authorized in accordance with the Allotment Management Plan. The current Grazing system allows for the movement of livestock by closing waters to redistribute animals. A Santa Rita System is proposed.

4.0 Evaluation Area Profile

4.1 Land Status

The Bryce allotment is identified as an Improve or I category allotment. By definition, I category allotments have one or more of the following: resource conflicts, threatened/endangered species, or resource potential where response to management would yield economic returns. Allotments 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. The Bryce Allotment was identified in the Upper Gila/ San Simon Grazing ES - Appendix B Grazing Unit Summary on page A-21 line # 158 for “B” type Management that requires intensive management under the Proposed AMP. Refer to Table 2 for land acreage in the Bryce allotment.

Table 2. Land status and acreage of the Bryce allotment.

Type of Acreage	Acres	Sections
Public Land	19,151	29.92
State Land	26,448	41.30
Private Land	7,672	11.98
Total	53,271	83.2

4.2 Soils and Ecological Sites

The Natural Resource Conservation Service 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 Bryce Allotment is mainly comprised of two MLRAs 41-2 Chihuahuan Sonoran Desert Shrubs and 38-1 Lower Interior Chaparral. Within each MLRA there are three Ecological Sites, the Ecological Sites represented are Clayey slopes (12-16 inches/per year), Clay Loamy Upland (8-12 inches/per year) and Clayey slopes (12-16 inches per year). For a complete description of the soils on the Bryce 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.

4.3 Wildlife Resources/Special Status Species

The Bryce Allotment has diverse geological forms, elevations, slopes, and vegetation. Resulting in a diversity of wildlife species from large mammals such as black bear, mule deer, white tailed deer, javelina, bighorn sheep, golden eagles, coyote, bobcat, Kit fox, grey fox, mountain lion, Gambel quail and Scaled quail. Management emphasis in this area is on large game animals specifically mule deer, white tailed deer, javelina and bighorn sheep. There are also various other reptiles, bats and other non-game species.

Deer:

Habitat degradation from excessive herbivory and drought can alter and / or eliminate cover and food needed by 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. 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 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 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 deer and other wildlife species (Heffelfinger, *et al.*, 2006).

The upper half of Bryce Allotment provides good habitat for mule deer with a small amount of habitat for white-tailed deer at the highest elevation. Vegetation diversity in the upper portion of the allotment allows deer to occupy this area year round. The lower portion of the allotment provides excellent forage when summer or winter annuals are abundant. At other times the lower portion is used intermittently as individuals move through.

Javelina:

Like 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).

There are resident populations of javalina on the Tom Springs Allotment. They are more strongly associated with the diverse vegetation in the upper half of the allotment and the southern boundary of the allotment next to the farm field and the Gila River. The area in between is used seasonally when ephemeral vegetation is available.

Bighorn Sheep:

A resident population of Bighorn has become established, in the Gila Mountains around Markham Creek. Important features of bighorn habitat are cliffs, rocky outcrops, and talus slopes which are used as escape terrain. Bighorn are closely associated with mixed cacti-mixed scrub on rocky slopes, mountain upland and rock outcrop natural communities (Volcanic hills ecological sites).

Bighorn forage on green and dried, grasses and forbs, as well as on shoots and flowers of prickly pear, cholla cactus (*Opuntia* spp.) and succulents (for example, barrel cactus, agaves). Grasses are important in their range and are favored when available. Browse becomes more important in the fall and winter and in the southern and western part of bighorn’s range. Important browse species include acacias (*Acacia* spp.), mesquite (*Prosopis* spp.), fairy duster (*Calliandra eriophylla*), Mormon tea (*Ephedra* spp.), and desert mistletoe (*Phoradendron californicum*). Additions of year round water would prove beneficial.

Some natural water exists in the upper portions of the allotment which would provide for bighorn sheep. A few of the waters in the upper end of the allotment developed for livestock may also benefit bighorns.

4.3.1 Federally Listed

The Safford Field Office implements it grazing program consistent with the Biological Opinion on the Gila District Livestock Grazing Program (22410-2006-F-0414) .This BO was reviewed to insure that all mitigation measures stated in the BO are being followed. In addition, a current review of the U.S. Fish and Wildlife Graham County list of species is provided in the table below:

April 16, 2013

<u>Common Name</u>	<u>Scientific Name</u>	<u>Listing Status</u>	<u>Affected</u>
American peregrine falcon	<i>Falco peregrinus anatum</i>	D	Considered BLM Sensitive Species. No eyries are known to occur within five miles of the allotment.
Apache trout	<i>Oncorhynchus apache</i>	T	No affect. There are no known locations or suitable habitat within five miles of the allotment.
Arizona Cliff-rose	<i>Purshia subintegra</i>	E	No affect. There are no known locations or suitable habitat within five miles of the allotment.
Bald Eagle	<i>Haliaeetus leucocephalus</i>	D	Considered BLM Sensitive Species. Wintering bald eagles are known to occur along the Gila River. No portion of the River is within the allotment boundaries.
Chiricahua leopard frog	<i>Rana chiricahuensis</i>	T	No affect. There are no known locations or suitable habitat within five miles of the allotment.
Desert pupfish	<i>Cyprinodon macularius</i>	E	No affect. A topminnow population was established at Lower Big Spring. The spring and pool were washed over

			and filled in with sediment by a flood event over twenty years ago. No individuals or suitable habitat has existed since that event.
Desert tortoise, Sonoran population	<i>Gopherus agassizii</i>	C	Considered a BLM Sensitive Species. There are no known locations or suitable habitat within five miles of the allotment.
Gila chub	<i>Gila intermedia</i>	E	No affect. There are no known locations within five miles of the allotment. The Gila River is historic habitat but no longer supports the species.
Gila topminnow	<i>Poeciliopsis occidentalis occidentalis</i>	E	No affect. A topminnow population was established at Lower Big Spring. The spring and pool were washed over and filled in with sediment by a flood event over twenty years ago. No individuals or suitable habitat has existed since that event.
Headwater chub	<i>Gila nigra</i>	C	Considered a BLM sensitive species. There are no known locations or suitable habitat within five miles of the allotment.
Lesser long-nosed bat	<i>Leptonycteris curasoae yerbabuena</i>	E	No affect. There are no known roost locations within 40 miles of the allotment.
Loach minnow	<i>Tiaroga cobitis</i>	E	No affect. There are no known locations within five miles of the allotment. The Gila River is historic habitat but no long supports the species.
Mexican spotted owl	<i>Strix occidentalis lucida</i>	T	No affect. There are no known locations or suitable habitat within five miles of the allotment.
Mount Graham red squirrel	<i>Tamiasciurus hudsonicus grahamensis</i>	E	No affect. There are no known locations or suitable habitat within five miles of the allotment
Northern Mexican gartersnake	<i>Thamnophis eques megalops</i>	C	Considered a BLM Sensitive Species. There are no known locations within five miles of the allotment. The Gila River is historic habitat, but the species is considered likely expatriated.
Ocelot	<i>Leopardus pardalis</i>	E	No affect. The upper have of the allotment may provide suitable habitat for the species. Of the few recent known locations, the closest to the allotment was near Globe 45 miles away. There is no reasonable expectation that the species occurs on the allotment.
Razorback sucker	<i>Xyrauchen texanus</i>	E	No affect. Razorback suckers may occur in the Gila River at such low population levels they are not detectable. The 100 year flood plain of the Gila River is designated critical habitat for razorbacks. The allotment does not include any portion of the river or the 100 years floodplain and is separated from them by private land.
Round tailed chub	<i>Gila robusta</i>	C	Considered a BLM sensitive species. Historically occurred in the Gila River and may still occur in the River near the allotment at very low population levels. There is no portion

			of the Gila River aquatic habitat within the allotment boundaries.
Southwestern willow flycatcher	<i>Empidonax traillii extimus</i>	E	No affect. The 100 year floodplain of the Gila River is critical habitat for flycatchers and flycatchers are known to occur along the river adjacent to the allotment. Impacts to willow flycatchers from authorized grazing have been consulted on (BO # 22410-2006-F-0414). Further discussion in text.
Spikedace	<i>Meda fulgida</i>	E	No affect. There are no known locations within five miles of the allotment. The Gila River is historic habitat but no longer supports the species.
Wet Canyon talussnail	<i>Sonorella macrophallus</i>	CA	There is no known occurrence on BLM administered public lands.
Yellow-billed Cuckoo	<i>Coccyzus americanus</i>	C	Considered a BLM sensitive species. The yellow-billed Cuckoo is a summer migrant occurring in the riparian forests along the Gila River adjacent to the allotment.

E – Endangered T – Threatened C – Candidate CA - Conservation Agreement D - Delisted

Reference <http://arizonaes.fws.gov/>

Willow Flycatcher

The southern boundary of the Bryce Allotment is no closer than one mile from suitable habitat. The allotment proper does not contain occupied, suitable or critical habitat for the species. The willow flycatcher habitat near the allotment boundary is privately owned. The BLM has no control of the nearby flycatcher habitat. However, the BLM is committed to the applicable conservation measures (BO # 22410-2006-F-0414) for willow flycatchers as follows:

1. Range Improvements: The BLM will locate range improvement projects outside of flycatcher occupied areas, except for fences, cattle guards, and gates needed to exclude or better manage livestock. Within breeding habitat, implement construction, maintenance, or management activities outside of the flycatcher breeding season. Any range improvement project within two miles of occupied, suitable or critical habitat, including those proposed to improve flycatcher habitat, will be reviewed by the FWS for compliance with the Biological opinion.
2. Cowbird Control: To reduce the likelihood of nest abandonment and loss of flycatcher productivity owing to cowbird parasitism associated with BLM-authorized grazing activities in or near occupied habitats, BLM will implement the following:
 - a. Investigate, identify, and assess livestock concentration areas on BLM lands in the action areas that are likely foraging areas for cowbirds. This will be done within a 5-mile radius of occupied or un-surveyed suitable southwestern willow flycatcher habitat. The BLM will evaluate ways to reduce any concentration areas found. The BLM will pay special attention to those facilities within two miles of breeding habitat, since this is the range in which alteration of concentration areas are most effective.

- b. The BLM will ensure that willow flycatcher surveys and nest monitoring take place at least every three years in the areas where the BLM controls significant breeding habitat and public land grazing is a predominate use on adjacent lands. This will be initiated along the Gila River between Winkleman and the Dripping Spring Wash confluence and between Kelvin Bridge and the Buttes. If jointly determined other areas may be added. Monitoring protocols will be updated as necessary and nest monitoring may use surrogate species.
- d. If cowbird parasitism in monitored areas is determined to be ten percent of nests or greater, the BLM and the FWS will meet and discuss reasons for the parasitism and possible management actions.

Through this allotment evaluation the BLM is not proposing any new livestock improvements, modification of improvements or any change in management that would increase the concentration of livestock within two miles of flycatcher habitat.

Cowbirds primarily consume seeds and grains and become concentrated in areas that provide this food source. The BLM does not allow supplemental feeding on public land, grains therefore, are not a source of cowbird concentration on public lands within the allotment. Cowbirds also concentrate in areas where livestock feces is concentrated. On grazing allotments including Bryce a majority of the feces is disbursed, but some is concentrated around livestock waters, loafing areas and corrals. These areas of livestock and feces concentrations are not used continuously. Corrals are used sporadically as needed to work the livestock, in addition livestock move around the allotment changing watering locations and loafing areas.

Approximately 75 percent of the allotment and therefore most of the livestock improvements are greater than five miles from flycatcher habitat. On public land within two miles of flycatcher habitat there is one working corral. Cowbirds have not been noted to occur at disproportionate concentration levels at this location.

The Bureau is unaware of any willow flycatcher monitoring taking place on the private lands near the allotment boundary. There is currently no information that cowbird parasitism is unnaturally high or exceeds ten percent. There is no indication that livestock concentrations on public land within the Bryce Allotment is contributing to higher concentrations of cowbirds, resulting in higher flycatcher nest parasitism. The one corral is only sporadically used and feces is not noticeably concentrated in or around it. This area would represent less than one tenth of an acre.

4.3.2 Special Status Species

The Safford Field Office reviewed a list of known Special Status Species occurrences in or within five miles of the Bryce Allotment provided by the Arizona Game and Fish Department,

Heritage Data Management System on May 1, 2009 (AGFD #M09-04213056) showed known occurrence for the following species.

Pima Indian Mallow	<i>Abutilon parishii</i>	AGFD Species of Special Concern
Western Yellow-billed Cuckoo	<i>Coccyzus americanus occidentalis</i>	AGFD Species of Special Concern

Pima Indian Mallow is known from one location in the Gila Mountains. The species is primarily associated with Sonoran desert shrub communities. Like the saguaro cactus the Gila Mountains are probably the extreme eastern edge of the species distribution. There is some potential for the species to occur on the allotment. The species is found on steep hill side and in association with rocks and rock outcrops. The habitat for the species is typically not grazed to any extent by livestock. There is no expected negative effect to this species from grazing. (Can reference AGFD Document that states there are no real treats to the species in Arizona)

Western yellow-billed cuckoo occurs seasonally and nests in mature riparian vegetation along the Gila River. The Bryce Allotment is next to but does not contain any portion of the Gila River. Livestock management on the allotment will not impact the species.

For this allotment evaluation there are no known negative effects from grazing on these special status species.

4.4 Special Management Areas

There are no special management areas in or adjacent to the Bryce Allotment.

4.5 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. Some OHV use does occur off-road, mostly in the larger ephemeral washes and congregation areas. The extent of the impacts this use has on the vegetative community and/or wildlife habitat has been steadily increasing in recent years.

4.6 Visual Resources

The Safford Resource Management Plan (RMP) has designated public lands within the Bryce Allotment as Visual Resource Management (VRM) Class III. The objective of this class is to partially retain the existing character of the landscape. The level of change to the characteristic landscape should be moderate.

VRM objectives are being met.

4.7 Cultural Resources

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

In compliance with the BLM Cultural Resources Programmatic Agreement, the Arizona BLM-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 (9/86) and the Safford Resource Management Plan (9/78). 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 are no areas of livestock congregation that required an intensive field inventory. 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.

4.8 Noxious Weeds/Invasive Species

There are no known or documented occurrences of state listed noxious weeds on the Bryce allotment.

4.9 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. Refer to Appendix 1.

4.10 Allotment Objectives

4.9.1 Arizona Standards for Rangeland Health and Guidelines for Grazing Administration

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

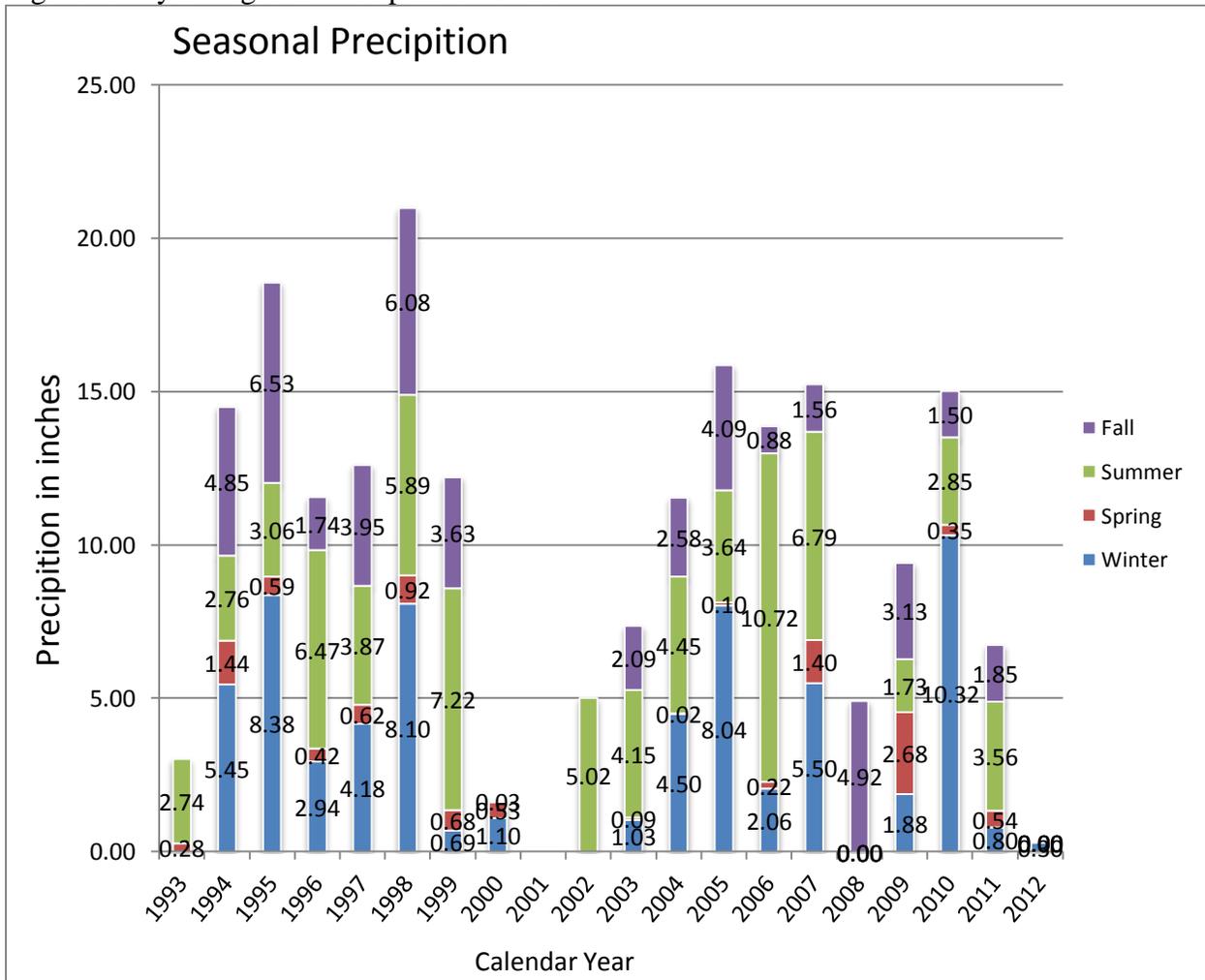
Maintain or improve productive and diverse upland and riparian-wetland plant communities of native species.

5.0 Management Evaluation

5.1 Precipitation Data

Precipitation data was collected from the National Oceanic and Atmospheric Administration (NOAA) from one station: Black Hills. Additional data was compiled from the Hell's Hollow rain gauge administered by the Safford Field Office and the Oliver Knoll rain gauge administered by National Atmospheric Deposition Project (NADP). The 20 year average annual precipitation for the Gila Mountain area is approximately 9.86 inches per annum. The 20 year average for the Safford area is 9.86 inches per annum.

Figure 1: Bryce Regional Precipitation Chart



5.2 Rangeland Monitoring

5.2.1 Actual Use

Actual use data for livestock was determined through Actual Use Reports, Form 4130-5, or when unavailable, from past billing statements. Refer to Table 4 for actual use from the previous 10-years.

Table 4 Actual use on Bryce Allotment.

Bryce #46080	2012	2011	2010	2009	2008	2007	2006	2005	2004	2003	2002	2001
Preference AUM's =1678	1138	1138	1138	1138	409	180	0*	786	1407	786	1569	1569

* Voluntary Non-Use

5.2.2 Upland Health Assessment

Upland health assessments were completed at four key areas on the Bryce Allotment on March 16, 2011. These 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 5 for a summary of the assessments on the Bryce allotment. Methods for the upland health assessments are described in “Interpreting Indicators of Rangeland Health, Technical Reference 1734-6, 2000”.

Table 5. Summary of upland health assessments at each key area.

Key Area	Departure for Ecological Site Description				
	Extreme	Moderate to Extreme	Moderate	Slight to Moderate	None to Slight
B-3					S,H,B
B-5					S,H,B
B-7					S,H,B
B-9					S,H,B

S- Soil/site stability

H- Hydrologic function

B- Biotic integrity

5.2.3 Ground Cover

Ground cover data was collected at four key areas on the Bryce allotment in 1979, 1982, 1983, 1985, 1988 and 2008. These data were collected in accordance with procedures for point cover data outlined in “Sampling Vegetation Attributes, Interagency Technical Reference, 1996”. Site B-3 was established in 2008. This will serve as baseline data for that site. The other three key areas have been read in the past and present quantifiable data. Refer to Appendix 2 for ground cover data. From 1979 to 2008, there was a decrease in bare ground and a corresponding increase in litter in sites B-5, B-7 and B-9 respectively.

5.2.4 Frequency/Trend

Pace frequency data was collected in 1984, 1985, 1988, 2008 and 2011 on the Bryce Allotment. Pace frequency data was collected in 2008 for the first time on key area B-3 and then again 2011 with negligible differences. The remaining data is from B-7 and B-9 with no data recorded from B-5. Data was collected in accordance with procedures outlined in “Sampling Vegetation Attributes, Interagency Technical Reference, 1996”. Frequency data for grass and forbs were

collected as basal hits. Frequency data for shrubs were collected as canopy cover. Refer to Appendix 3 for frequency data.

5.2.5 Composition

Species composition data were collected using the Dry Weight Rank (DWR) methodology at the B-3 key area starting in 2008. The remaining data for the other key areas were collected in 1984, 1985, 1988, and 2008. DWR data were collected in accordance with procedures outlined in “Sampling Vegetation Attributes, Interagency Technical Reference, 1996”. Refer to Appendix 3 for composition data.

6.0 Conclusions

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

6.1 B-3 (41-2 Clayey Slopes 8-12”)

Standard 1. Upland Sites: Based on the indicators, Standard 1 is being met.

Standard 1. Upland Sites

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

As indicated by such factors as:

- *Ground Cover*
 - *litter*
 - *live vegetation, amount and type (e.g. grass, shrubs, trees, etc.)*
 - *rock*
- *Signs of erosion*
 - *flow pattern*
 - *gullies*
 - *rills*
 - *plant pedestalling*

Discussion

Standard #1 Upland Sites:

On March 16th, 2011 a Rangeland Health Evaluation was completed on the allotment. The evaluation’s preponderance of evidence indicated that there was a “none to Slight” rating for departure from the Ecological Site Description and Ecological Reference Areas. The ecological

site guide identifies the site soils are deep, clayey textured and are heavy textured and good producers of runoff. The Soil/Site Stability was within normal parameters. Hydrologic Function was operating at expected levels. Biotic integrity was stable.

Standard # 2 Riparian-Wetland Sites: The allotment does have Mud Spring and Big Spring on the lower half of the allotment that have been fenced and excluded from cattle. These springs are on BLM, while there are other springs on the allotment that reside on state or private lands. Markham Creek is also on the allotment and has potential for perennial reaches but is also state land.

Standard 3. Desired Resource Conditions: Overall, based on the indicators, Standard 3 is being met.

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

As indicated by such factors as:

- *Composition*
- *Structure*
- *Distribution*

Discussion

Standard #3

Ground cover data, which was gathered from 1979, 2008 and 2013 show a decrease in bare ground at the key area. The reduction in bare ground can be attributed to favorable rainfall and is represented in the monitoring data by the increase in litter and basal hits on vegetation. However, composition data collected in the afore-mentioned span of years cannot be compared. The 2008 DWR data will serve as the baseline for future analysis. Frequency data was also collected in 2008.

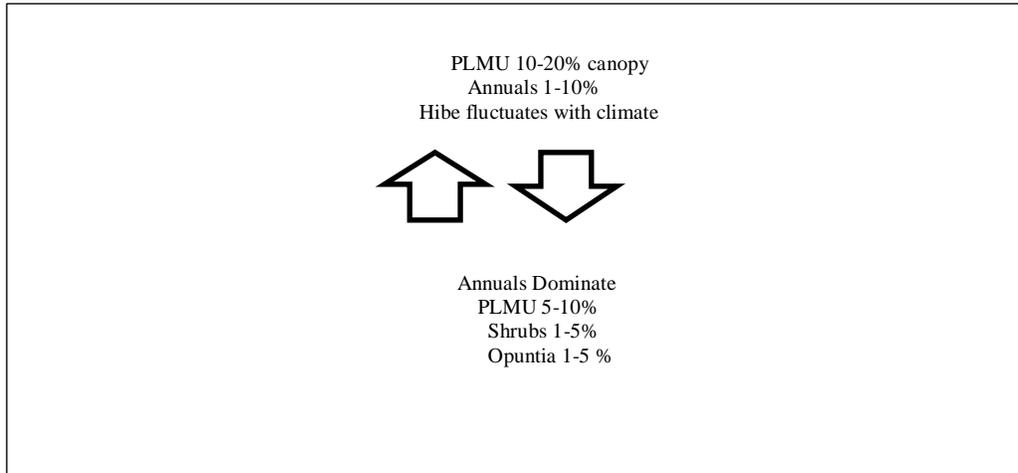
This key area falls within the ecological site 41-2 Clayey Slopes with a precipitation range of 8 to 12 inches per year. These soils are deep, clayey textured and are heavy textured and good producers of runoff. The native potential plant community on this site is grassland with a scattering of desert shrubs and cacti. Annual forbs and grasses, of both winter and summer seasons, are very important in the plant community in their respective (wet) seasons. Tobosa is the dominant perennial grass with lesser amounts of vine mesquite. (Clayey Swale, 41-2 NRCS Ecological Site Description).

Site specific or desired plant community (DPC) objectives were established based on data collected from 1979 to 2011. Objectives for DPC are to:

Clayey Slopes Ecological Site:

- Tobosa (PLMU) 10-20%
Curly Mesquite 1-5%

The Clayey slopes ecological site is within the expected Historic Climax Plant Community state and will be managed to stay within these parameters.



6.2 B-5 (Clayey Slopes 12-16")

Standard 1. Upland Sites: Based on the indicators, Standard 1 is being met.

Standard 1. Upland Sites

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

As indicated by such factors as:

- *Ground Cover*
 - *litter*
 - *live vegetation, amount and type (e.g. grass, shrubs, trees, etc.)*
 - *rock*
- *Signs of erosion*
 - *flow pattern*
 - *gullies*
 - *rills*
 - *plant pedestaling*

Discussion

On March 16th, 2011 a Rangeland Health Evaluation was completed on the allotment. The evaluation's preponderance of evidence indicated that there was a "None to Slight" rating for departure from the NRCS Ecological Reference Area. These are moderately deep to deep soils formed on old lakebed sediments or dissected alluvium of mixed origin. The erosion hazard is slight due to gravel, cobble and rock covers. Soil/Site Stability was within normal parameters. Hydrologic Function was functioning at expected levels. Biotic integrity was intact.

Standard # 2 Riparian-Wetland Sites: Not Applicable.

Standard 3. Desired Resource Conditions: Overall, based on the indicators, Standard 3 is being met.

As indicated by such factors as:

- *Composition*
- *Structure*
- *Distribution*

Discussion

Baseline Frequency and Dry Weight Rank (DWR) inventory was performed in 2008 at this site. Frequency and DWR was monitored again in 2013. Ground cover data which was gathered in 2008 and 2013 show a decrease in bare ground at the key area and small reduction in litter.

Desired Future Condition

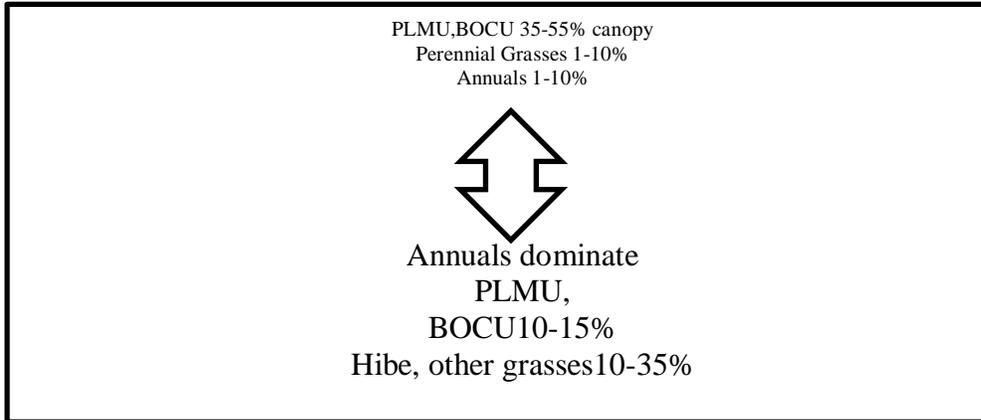
The historic native state includes the native plant communities that occur on the site, including the historic climax plant community. This state includes other plant communities that naturally occupy the site following fire, drought, flooding, herbivores, and other natural disturbances. The historic climax plant community represents the natural climax community that eventually reoccupies the site with proper management.

The potential plant community on this site is dominated by warm season perennial grasses. Shrubs and perennial forbs are well represented on the site. The major perennial grasses, except tobosa and vine mesquite, are well dispersed throughout the plant community. These two species occur in patches of various sizes that may not be well dispersed over larger areas of the site. The aspect is shrub-dotted grassland.

With continuous heavy grazing, the more palatable species are taken out of the plant community. Tobosa is left. Species like broom snakeweed, mesquite, and prickly pear and annual forbs and grasses will increase to dominate the plant community. Curly mesquite can increase under moderate yearlong use and form sod areas of considerable extent. Due to heavy surface textures

and steep slopes, this site can become an inefficient user of intense summer rainfall when the perennial grass cover has been greatly reduced. Natural fire may have been important in the development of the potential plant community. When comparing the Ecological Site Guide state and transition models with monitoring data and the Upland Health Assessment at this site it is currently with-in HCPC standards.

The Clayey Slopes 12-16” ecological site will continue to be managed to stay within HCPC and promote diversity in perennial grass and keep shrubs at current levels for wildlife cover.



Site specific or desired plant community (DPC) objectives were established based on data collected in 2008, 2013 and the Upland Health Assessment. Objectives for DPC are to:

- Maintain Perennial Grass Species Composition at 15-30%
- Maintain Native Shrub/Trees Species Composition at 10-30%
- Maintain Annual grasses and forbs at 5-40%

6.3 B-7 (41-2 Clay loam 8-12”)

Standard 1. Upland Sites: Based on the indicators, Standard 1 is being met.

Standard 1. Upland Sites

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

As indicated by such factors as:

- *Ground Cover*
 - *litter*
 - *live vegetation, amount and type (e.g. grass, shrubs, trees, etc.)*
 - *rock*

- *Signs of erosion*
 - *flow pattern*
 - *gullies*
 - *rills*
 - *plant pedestalling*

Discussion

Standard #1 Upland Sites:

On March 16th, 2011 a Rangeland Health Evaluation was completed on the allotment. The evaluation's preponderance of evidence indicated that there was a "none to Slight" rating for departure from the Ecological Site Description and Ecological Reference Areas. These are deep soils that have formed in clayey alluvium of mixed origin. Surface textures range from gravelly sandy-loam (less than one inch thick over an argillic horizon) to clay loam. Sub-soils are clayey, with mixed mineralogy, and lack vertic properties (soil cracking and churning). The Soil/Site Stability was within normal parameters. Hydrologic Function was operating at expected levels. Biotic integrity was stable.

Standard # 2 Riparian-Wetland Sites:

The allotment does have Mud Spring and Big Spring on the lower half of the allotment that have been fenced and excluded from cattle. These springs are on BLM, while there are other springs on the allotment that reside on state or private lands. Markham Creek is also on the allotment and has potential for perennial reaches but is also state land.

Standard # 3.

Desired Resource Conditions: Overall, based on the indicators, Standard 3 is being met.

As indicated by such factors as:

- *Composition*
- *Structure*
- *Distribution*

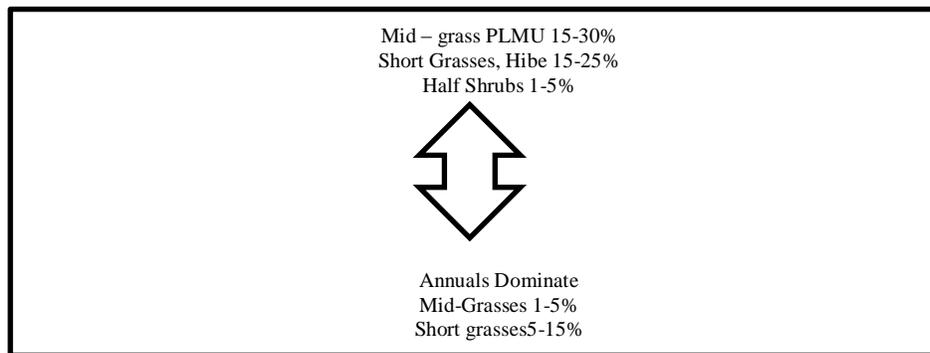
Discussion

Standard #3

Ground cover data, which was gathered from 1979 and 2008 show a decrease in bare ground at the key area with a slight increase in 2013. The reduction in bare ground can be attributed to favorable rainfall and is represented in the monitoring data by the increase in litter and basal hits on vegetation. However, composition data collected in the afore-mentioned span of years cannot

be compared. The 2008 DWR data will serve as the baseline for future analysis. Frequency data was also collected in 2008.

This key area falls within the ecological site 41-2 Clay loam upland with a precipitation range of 8 to 12 inches per year. These soils are deep, clayey textured and are heavy textured and good producers of runoff. The plant communities found on an ecological site are naturally variable. Composition and production will vary with yearly conditions, location, aspect, and the natural variability of the soils. The Historical Climax Plant Community represents the natural potential plant communities found on relict or relatively undisturbed sites.



Site specific or desired plant community (DPC) objectives were established based on data collected from 1979 to 2011. Objectives for DPC are:

Clay Loam Upland Ecological Site:

- Tobosa (PLMU) 10-46%
Short grasses, Hibe 10-25%
Half Shrubs 1-10%

The Clay Loamy Upland ecological site is within the expected Historic Climax Plant Community state and will be managed to stay within these parameters.

6.4 B-9 (same ESD as B-7)

Standard 1. Upland Sites: Based on the indicators, Standard 1 is being met.

Standard 1. Upland Sites

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

As indicated by such factors as:

- *Ground Cover*
 - *litter*
 - *live vegetation, amount and type (e.g. grass, shrubs, trees, etc.)*
 - *rock*
- *Signs of erosion*
 - *flow pattern*
 - *gullies*
 - *rills*
 - *plant pedestalling*

Discussion

Standard #1 Upland Sites

On March 16th, 2011 a Rangeland Health Evaluation was completed on the allotment. The evaluation's preponderance of evidence indicated that there was a "none to Slight" rating for departure from the Ecological Site Description and Ecological Reference Areas. These are deep soils that have formed in clayey alluvium of mixed origin. Surface textures range from gravelly sandy-loam (less than one inch thick over an argillic horizon) to clay loam. Sub-soils are clayey, with mixed minerology, and lack vertic properties (soil cracking and churning). The Soil/Site Stability was within normal parameters. Hydrologic Function was operating at expected levels. Biotic integrity was stable.

Standard # 2 Riparian-Wetland Sites

The allotment does have Mud Spring and Big Spring on the lower half of the allotment that have been fenced and excluded from cattle. These springs are on BLM, while there are other springs on the allotment that reside on state or private lands. Markham Creek is also on the allotment and has potential for perennial reaches but is also state land.

Standard 3. Desired Resource Conditions: Overall, based on the indicators, Standard 3 is being met.

As indicated by such factors as:

- *Composition*
- *Structure*
- *Distribution*

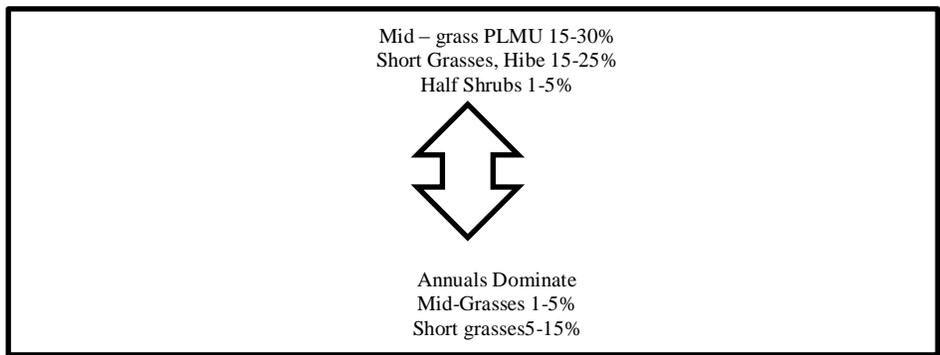
Discussion

Standard #3

Ground cover data, which was gathered from 1979, 2008 and 2013 show a decrease in bare ground at the key area. The reduction in bare ground can be attributed to favorable rainfall and is

represented in the monitoring data by the increase in litter and basal hits on vegetation. However, composition data collected in the afore-mentioned span of years cannot be compared. The Dry Weight Rank (DWR) method was adopted in 2006 because it is better suited to the site. A more analytical sample of overall condition and composition is collected on this range site with the DWR method. The 2008 DWR data will serve as the baseline for future analysis. Frequency data was also collected in 2008.

This key area falls within the ecological site 41-2 Clay loam upland with a precipitation range of 8 to 12 inches per year. These soils are deep, clayey textured and are heavy textured and good producers of runoff. The plant communities found on an ecological site are naturally variable. Composition and production will vary with yearly conditions, location, aspect, and the natural variability of the soils. The Historical Climax Plant Community represents the natural potential plant communities found on relict or relatively undisturbed sites.



Site specific or desired plant community (DPC) objectives were established based on data collected from 1979 to 2011. Objectives for DPC are to:

Clay Loam Upland Ecological Site:

- Tobosa (PLMU) 10-46%
Short grasses, Hibe 10-25%
Half Shrubs 1-10%

The Clay Loamy Upland ecological site is within the expected Historic Climax Plant Community state and will be managed to stay within these parameters.

7.0 Recommendations

Issue 10-year grazing permit with the following terms and conditions:

Mandatory terms and conditions:

Allotment Number	Livestock		Grazing Period		% PL	Type Use	AUMS
	Number	Kind	Begin	End			
46080 Bryce	421	Cattle	3/1	2/28	31%	Active	1566
	30	Horses	3/1	2/28			112

Other terms and conditions:

Permittee is required to submit a report of the actual grazing use made on this allotment for the previous grazing period, March 1 to February 28. Failure to submit such a report by March 15 of this year may result in suspension or cancellation of the grazing permit.

Salt and mineral blocks will be placed a minimum of ¼ mile from all water sources, unless otherwise approved by the authorized officer, in writing, for specific management concerns.

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.

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.

Rationale:

Monitoring data and land health standards indicate that Bryce is meeting all standards. Comparison to ecological site descriptions indicated that this area is performing at expected levels and therefore should continue to be managed in the same manor.

8.0 Consultation

Prepared By/Staff Review:

Signature

R.J. Estes, Rangeland Management Specialist	_____
Scott Ford, Recreation/Wilderness Specialist	_____
Tim Goodman, Wildlife Biologist/T&E	_____
Bill Wells, Hydrologist	_____
Dan McGrew, Archaeologist	_____
Amy Humphrey, Lead Rangeland Management Specialist	_____

9.0 Selected Management Action

Implement the grazing and other management actions identified in 7.0 Recommendations.

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
Field Manager- Safford Field Office

Date

10.0 APPENDIX A

Key Area Locations

GPS (NAD 27 CONUS) UTM's

B-3	12 S 0621042 3654823
B-5	12 S 0616141 3656179
B-7	12S 0614442 3656328
B-9	12S 0616329 3650597

11.0 APPENDIX B

Ground Cover Data

B-3

Ground Cover %	2008	2013
Bare Ground	8	8
Gravel	15	33
Rock	18	14
Litter	51	42
Vegetative Base	8	2
Total	100	100

B-5

Ground Cover %	1979	1982	1985	1988	2008	2013
Bare Ground	27	15	19	17	10	8.6
Gravel	8	15.5	13	20	11	19.3
Rock	21.5	30.5	36	37.5	19	35.3
Litter	34	38.5	25.5	23.5	52	34.3
Vegetative Base	9.5	.5	2.5	0.0	8	2.3
Total	100	100	100	100	100	100

B-7

Ground Cover %	1983	1985	1988	2008	2013
Bare Ground	23	24.5	19	15	18.6
Gravel	11	3	5	17	14.0
Rock	41	36	38	31	34
Litter	22	35	35	25	31.6
Vegetative Base	3	1.5	3	12	1.6
Total	100	100	100	100	100

B-9

Ground Cover %	1988	2008	2013
Bare Ground	61.5	59	41.3
Gravel	7.5	6	20.5
Rock	22	33	27.3
Litter	8.5	31	10.5
Vegetative Base	.5	1	.3
Total	100	100	100

12.0 APPENDIX C

Frequency and Composition Data

Site: B-3

% Frequency		Quadrat Size: 40x40 cm	
Species	Transect		
	7/29/2008	6/12/2013	
Woody Species			
Acacia greggii-canopy	2	2	
Baccharis pteronioides-canopy	1		
Eriogonum wrightii	1	1	
Gutierrezia sarothrae	8	3	
Gutierrezia sarothrae-canopy	6	1	
Lycium-canopy	2	2	
Opuntia	8	1	
Opuntia-canopy	20	13	
Opuntia-cholla canopy	3		
Opuntia-cholla		1	
Grasses - Perennial			
Bouteloua curtipendula	4		
Eragrostis lehmanniana	1		
Hilaria belangeri	3		
Leptochloa dubia	2		
Pleuraphis mutica	50	56	
Forbs - Perennial/Biennial			
Solanum elaeagnifolium	19	4	
Sphaeralcea	4		
Annuals			
Annual forb(s)	58	90	
Annual grass(es)	11	30	
Unclassified			
Prosopis	1		
Prosopis-canopy	11	9	
Viguiera	1		

Site: B-5

% Frequency		Quadrat Size: 40x40 cm	
Species	Transect		
	7/29/2008	5/2/2013	
Woody Species			
Acacia greggii	2		
Acacia greggii-canopy	5		5
Dasyllirion wheeleri	1		2
Dasyllirion wheeleri-canopy	1		6
Eriogonum wrightii	1		3
Eriogonum wrightii-canopy	1		
Gutierrezia sarothrae	49		29
Gutierrezia sarothrae-canopy	21		13
Opuntia	4		1
Opuntia-canopy	9		8
Opuntia-cholla	1		
Opuntia-cholla canopy	2		
Yucca	1		
Grasses - Perennial			
Bouteloua curtipendula	20		3
Eragrostis lehmanniana	1		
Pleuraphis mutica	47		44
Forbs - Perennial/Biennial			
Solanum elaeagnifolium	1		
Sphaeralcea	15		4
Verbena	1		4
Annuals			
Annual forb-annual goldeneye	1		
Annual forb(s)	20		87
Annual grass(es)	51		18
Unclassified			
Prosopis	1		

Prosopis-canopy	4	5
Senna	1	

Site: B-7

% Frequency		Quadrat Size: 40x40 cm	
Species	Transect		
	8/14/2008	5/2/2013	
Woody Species			
Cercidium floridum-canopy	2	4	
Opuntia	7	7	
Opuntia-canopy	6	18	
Grasses - Perennial			
Pleuraphis mutica	53	66	
Forbs - Perennial/Biennial			
Sphaeralcea	9	1	
Annuals			
Annual forb(s)	42	40	
Annual grass(es)	82	62	
Unclassified			
Ferocactus	3		
Haplopappus	1		
Haplopappus-canopy	1		
Hoffmannseggia	1		
Senna	2		
Zinnia	1		

Site: B-9

% Frequency		Quadrat Size: 40x40 cm				
Species	Transect					
	8/14/2008	5/3/2013				
Woody Species						
Acacia greggii-canopy	1					
Cercidium floridum-canopy	1					
Larrea tridentata-canopy	1	1				
Lycium	1					
Lycium-canopy	1	1				
Opuntia stanlyi		1				
Grasses - Perennial						
Bouteloua eriopoda	2					
Pleuraphis mutica	21	22				
Forbs - Perennial/Biennial						
Sphaeralcea	1					
Annuals						
Annual forb(s)	43	24				
Annual grass(es)	83	50				
Unclassified						
Boerhavia	10					
Hoffmannseggia	22	2				
Prosopis	1	1				
Prosopis-canopy	3	1				
Sida	1					
B5 DWR Wt. Composition						
Species						% Comp .*
Woody Species					200	2013

					8	
Acacia greggii-canopy			ACGR			
Acacia greggii			ACGR		2	3
Dasyliirion wheeleri			DAW H2		1	5
Dasyliirion wheeleri-canopy			DAW H2			
Eriogonum wrightii			ERWR		1	3
Gutierrezia sarothrae			GUSA 2		37	34
Gutierrezia sarothrae-canopy			GUSA 2			
Opuntia			OPUN T		7	4
Opuntia-canopy			OPUN T			
Grasses - Perennial						
Bouteloua curtipendula			BOCU		11	2
Pleuraphis mutica			PLMU 3		34	41
Forbs - Perennial/Biennial						
Sphaeralcea			SPHA E		5	3
Verbena			VERB E			1
Annuals					1	
Annual forb(s)			AAFF			
Annual grass(es)			AAGG			
Unclassified						
Prosopis-canopy			PROS O			
Prosopis			PROS O		2	4

B-7 DWR Wt. Composition						
Species					% Comp .*	
Woody Species					2008	2013
Cercidium floridum-canopy			CEFL6			
Cercidium floridum			CEFL6	2	4	
Opuntia			OPUNT	14	28	
Opuntia-canopy			OPUNT			
Grasses - Perennial						
Pleuraphis mutica			PLMU3	72	67	
Forbs - Perennial/Biennial					6	
Sphaeralcea			SPHA E	6	1	
Annuals						
Annual forb(s)			A AFF			
Annual grass(es)			A AGG			

B-9 DWR Composition for 2008 and 2013					
Species				% Comp.*	
Woody Species				2008	2013
Larrea tridentata-canopy	LATR2			1	
Larrea tridentata	LATR2			9	4
Lycium-canopy	LYCIU			1	
Lycium	LYCIU			1	3
Opuntia stanlyi	OPST			1	1
Grasses - Perennial					

Pleuraphis mutica	PLMU3	44	80
Annuals			
Annual forb(s)	AAFF	5	
Annual grass(es)	AAGG	2	
Unclassified			
Hoffmannseggia	HOFFM	29	7
Prosopis	PROSO	4	6

B-3 DWR Composition for 2008 and 2013			% Comp
Woody Species			2008
Acacia greggii-canopy	ACGR		
Acacia greggii	ACGR		1
Baccharis pteronioides-canopy	BAPT		
Baccharis pteronioides	BAPT		1
Eriogonum wrightii	ERWR		1
Gutierrezia sarothrae	GUSA2		6
Gutierrezia sarothrae-canopy	GUSA2		
Lycium-canopy	LYCIU		
Lycium	LYCIU		1
Opuntia	OPUNT		16
Opuntia-canopy	OPUNT		
Opuntia-cholla canopy	OPUNT		
Opuntia-cholla	OPUNT		2
Grasses - Perennial			
Bouteloua curtipendula	BOCU		2
Eragrostis lehmanniana	ERLE		1
Hilaria belangeri	HIBE		2
Leptochloa dubia	LEDU		1
Pleuraphis mutica	PLMU3		45
Forbs - Perennial/Biennial			

Sphaeralcea				SPHAE			1
Annuals							
Annual forb(s)				AAFF			
Annual grass(es)				AAGG			
Unclassified							
Prosopis				PROSO			9
Prosopis-canopy				PROSO			
Solanum elaeagnifolium				SOEL			10
Viguiera				VIGUI			1

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