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Environmental Assessment
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Vanar Permit Renewal



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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 renewal for the Vanar allotment #51380 (Figure 1). The action culminates an evaluation conducted on the allotment under the Arizona Bureau of Land Management (BLM) Standards for Rangeland Health and Guidelines for Grazing Management (S&Gs). 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 Vanar Allotment are either meeting Standards or making significant progress toward meeting the applicable Standards for Rangeland Health. This EA is intended to be used with the Vanar Allotment Evaluation & Rangeland Health Analysis (Appendix 1).

1.1 Background

The Vanar Allotment #5138 has not been previously evaluated through the Standards and Guideline process. On 12/02/2004, the Vanar permit was issued under the Appropriations Act with the following language: “In accordance with Sec. 325, Title III, H.R. 2691, Department of the Interior and related agencies Appropriations Act, 2004 (P.L. 108-108), which was enacted on November 10, 2003, this grazing permit is renewed under Section 402 of the Federal Land Policy and Management Act of 1976, as amended (43 U.S.C. 1752), Title III of the Bankhead-Jones Farm Tenant Act (7 U.S.C. 1010 ET SEQ.), or, if applicable, Section 510 of the California Desert Protection Act (16 U.S.C. 410AAA-50). In accordance with Public Law 108-108,” the terms and conditions contained in the expired or transferred permit shall continue in effect under the renewed permit until such time as the Secretary of the Interior completes processing of this permit in compliance with all applicable laws and regulations, at which time this permit or lease may be cancelled, suspended, modified, in whole or part, to meet the requirements of such applicable laws and regulations.”

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

1.2 Purpose and Need

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

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

- BLM Arizona adopted the Arizona Standards for Rangeland Health (Land Health Standards) and Guidelines for Livestock Grazing Management in all Land Use Plans (Arizona S&Gs) in 1997 (Appendix A). Land Health Standards and Guidelines for Grazing Administration was also amended into the Safford RMP. Land Health Standards for Rangelands should be achieving or making significant progress towards achieving the standards and to provide for proper nutrient cycling, hydrologic cycling, and energy flow. Guidelines direct the selection of grazing management practices and, where appropriate, livestock facilities to promote significant progress toward, or the attainment and maintenance of, the standards. This EA is intended to be used with the Final Vanar 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 Vanar Allotment, as available for domestic livestock grazing. Where consistent with the goals and objectives of the RMP and Land Health Standards, allocation of forage for livestock use and the issuance of grazing permits to qualified applicants are provided for by the Taylor Grazing Act (TGA) and the Federal Land Policy and Management Act (FLPMA).

1.3 Decision to be Made

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

1.4 Conformance with Land Use Plan

The proposed action is in conformance with the Safford Resource Management Plan (RMP) (1991) and the Statewide Land Use Plan Amendment for Implementation of Arizona Standards

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

Implementation level decisions from the Upper Gila-San Simon Grazing Environmental Impact Statement (UG-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.

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

1/ RMP - Safford District Resource Management Plan

2/ UG-EIS - Upper Gila - San Simon Grazing Environmental Statement

1.5 Relationship to Other Plans, Statutes, and Regulations

Grazing permit renewals are provided for in 43 CFR 4100 where the objectives of the regulations are "...to promote healthy, sustainable rangeland ecosystems; to accelerate restoration and

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

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

- Taylor Grazing Act (TGA) of 1934
- Federal Land Policy and Management Act (FLPMA) of 1976 (43 U.S.C. 1701 et seq.)
- Public Rangelands Improvement Act (PRIA) of 1978
- Endangered Species Act (ESA) of 1973, as amended
- 43 CFR 4100 Grazing Administration - Exclusive of Alaska
- Arizona Water Quality Standards, Revised Statute Title 49, Chapter II
- Section 106 of the National Historic Preservation Act of 1966, as amended
- Native American Graves Protection and Repatriation Act of 1990 (25 U.S.C. 3001-3013; 104 Stat. 3048-3058)

- National Environmental Policy Act (NEPA) of 1969
- Executive Order 13186 – Responsibilities of Federal Agencies to Protect Migratory Birds

1.6 Scoping

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

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

1.6.1 Issues Identified

- What are the potential impacts of livestock grazing?
- What are the potential impacts to terrestrial wildlife species?
- Is there a shift in functional/structural groups?
- What are the impacts from grazing on soils?

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 3.) if necessary, livestock can be spread throughout the allotment in order to avoid over utilization of forage species. All decisions should be made after monitoring studies are performed.

2.2 Proposed Action (No Action)

The proposed action is to renew the grazing permit for the Vanar allotment for a period of 10 years as authorized by the grazing regulations at §4130.2(d) with the following Terms and Conditions:

Allotment	Livestock Number	Kind	Grazing Period		%PL	Type Use	AUMS
			Begin	End			
51380	40	Cattle	03/01	2/28	90	Active	432

1. 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.
2. The BLM is in the process of implementing the standards for rangeland health and guidelines for grazing management. This permit is subject to future modification as necessary to achieve compliance with the standards and guidelines (43 CFR 4180).
3. Permittees are required to maintain all range projects for which they have maintenance responsibilities.
4. 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.
5. Salt and/or mineral blocks shall not be placed within one quarter (1/4) mile of water sources, springs, streams, and riparian habitats.
6. All troughs will be outfitted with wildlife escape structures to provide a means of escape for animals that fall in while attempting to drink or bathe.
7. This permit is subject to all terms and conditions found on the back side of the permit.
8. 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.

Currently, the proposed action area is meeting all standards on the Limy Upland evaluation site and is progress towards meeting standard one and three on the Sandy Loam Upland evaluation site. Current cattle graze is not considered a causal factor.

2.3 Alternative 1

Under this alternative, a permit would be issued under the Special Ephemeral Rule in accordance with 43 CFR 4115.2-1 regarding special rules for grazing districts. The permit would not include a base stocking rate for the allotment, but would allow the permittee to apply for grazing use when annual forage production is abundant in years of more than average spring/winter precipitation.

Because of the unique characteristics of ephemeral range, the following special rules would apply:

- Applicable allotments or uses would be formally designated by the field manager as ephemeral range.
- An annual application by qualified licensees or permittees would not be required unless grazing use is desired. On a year-to-year basis, whenever forage exists or climatic conditions indicate the probability of an ephemeral forage crop, livestock grazing may be authorized upon application pursuant to any management requirements for the allotment.
- Use of base property (water base) during non-forage years is not feasible or economical and no use of base properties is required except during these periods when ephemeral forage is available and livestock grazing occurs.

2.4 No Grazing Alternative

This alternative would eliminate livestock grazing on federal lands on the Vanar Allotment. The permit would be canceled for the Vanar allotment. Livestock grazing would not be authorized. BLM would initiate the process in accordance with 43 CFR parts 4100 and amend the RMP.

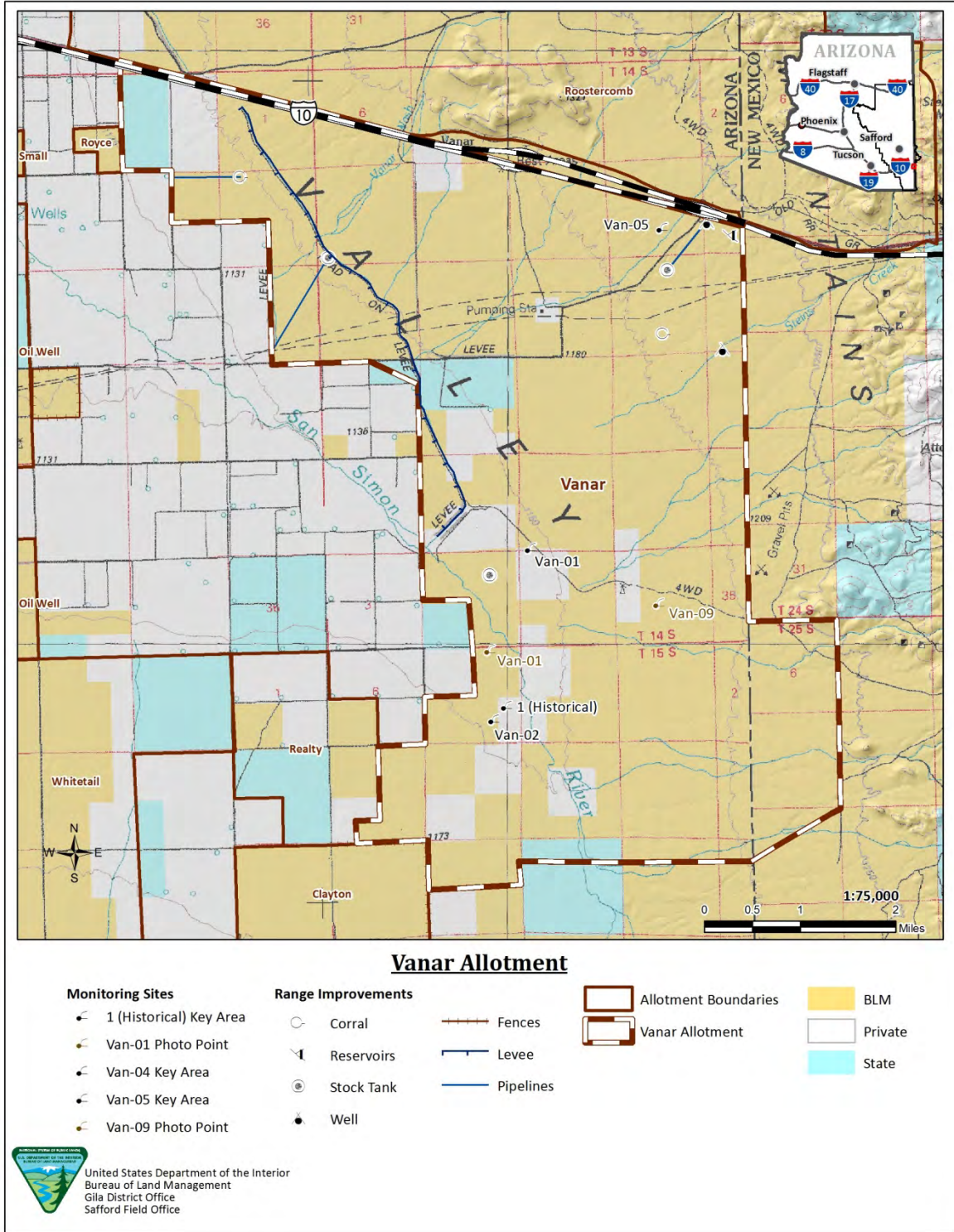
2.5 Alternatives Considered but Eliminated From Detailed Analysis

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

3.0 Affected Environment

The Vanar allotment is located in Cochise County about six miles southeast of San Simon, Arizona. It borders I-10 on the north, the state of New Mexico on the east and the farms in the San Simon Valley on the west. Elevation on the east boundary of the allotment is approximately 4,040 feet. The allotment slopes gently to the west and the lowest point is approximately 3,720 feet. It is dissected by the numerous small washes. The San Simon River is located along the west side of the allotment. See Figure 1 for location, land ownership, and existing infrastructure.

Figure 1: Vanar Allotment



The BLM is required to consider many authorities when evaluating a Federal action. Those elements of the human environment that are subject to the requirements specified in statutes, regulations, or executive orders, and must be considered in all EAs, have been considered by BLM resource specialists to determine whether they would be potentially affected by the proposed action. These elements are identified in Table 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	The proposed action and the alternative would not measurably impact Air Quality standards. Moving livestock and traveling on unimproved roads during allotment activities could produce small amounts of fugitive dust in the short term, but this would cause negligible and localized impacts on air quality.
Areas of Critical Environmental Concern	NP	The project area is not located within or near an Area of Critical Environmental Concern.
Cultural Resources	NP	The records indicate that there are nine areas of livestock congregation that required an intensive field inventory, which was completed on 4-30-2009. 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.
Environmental Justice	NP	The project area encompasses uninhabited land within Cochise County, Arizona five miles southeast of the community of San Simon. The operation of the allotment is provided primarily by the permittees. One to two individuals may be hired for short term employment (one man month) during the year. There would be no perceivable differences in impacts to environmental justice from any of the alternatives. No aspect of the proposed action or Alternative 1 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 or near the project area.
Floodplains	NP	The proposed action area is not within a floodplain as defined by the Executive Order 11988 (1977).

Resource	Determination*	Affected Environment (Rationale for Determination)
Invasive and Nonnative Species	NI	There are currently no known invasive species or noxious weeds located on the Vanar allotment. Since there are no known invasive or nonnative species that have been established on the allotment to date from livestock grazing the risk of establishment is thought to be low with the proposed action or other alternatives.
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.
Threatened, Endangered, or Candidate plant species	NP	No Threatened, Endangered, or Candidate plant species occur in the project area.
Threatened, Endangered Animal Species	PI	Endangered species and foraging habitat potentially exist within proposed action area. The BLM considered the FWS county list and determined the effect of the proposed project on each of the species. The BLM determined the action would have no effect on federally-listed species or foraging habitat.
Wastes (hazardous or solid)	NP	No known hazardous or solid waste issues occur in the project areas.
Water Quality and Quantity (drinking/ground)	NP	Due to the lack of surface water within the San Simon River 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	NP	A portion of the San Simon River runs through the west side of the Vanar allotment. The San Simon River flows for two to three days following intense rain events. These events happen on average three to four time per year. A field survey was performed on April 26, 2012 no areas of running water/saturated soils or obligate species were found within the channel within the Vanar allotment boundaries. The BLM defines a riparian area as a form of wetland transition between permanently saturated wetlands and upland areas. These areas exhibit vegetation or physical characteristics reflective of permanent surface or subsurface water influence. Lands along, adjacent to, or contiguous with perennially and intermittently flowing rivers and streams, glacial potholes, and the shores of lakes and reservoirs with stable water levels are typical riparian areas. Excluded are such sites as ephemeral streams or washes that do not exhibit the presence of vegetation dependent upon free water in the soil (Technical Reference 1737-9).
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 project area is not located within designated wilderness.
Range	PI	The Vanar Allotment is currently grazed year round with no rotation system in place. Permit renewal is required to allow continued livestock use on this allotments; this issue is therefore analyzed in detail later in this EA.
BLM Sensitive Plants	NP	No BLM Sensitive Plants resources are known to occur in the project area.

Resource	Determination*	Affected Environment (Rationale for Determination)
Wildlife (including sensitive species and migratory birds)	PI	A change in wildlife habitat, with regard to water distribution, would occur dependent on the alternative implemented. Wildlife habitat would remain shrub dominated with only minor changes over time under any of the alternatives. The area would continue to support the habitat and wildlife that currently exist. Potential impacts to Bureau sensitive species and migratory birds were considered and determined not to be impacted by implementation of any of the alternatives.
Soils	PI	Soil loss and erosion are a major problem and concern the San Simon Valley and the effects of livestock grazing should be reviewed.
T&E Fish/Fisheries	NP	Neither the proposed action or the alternatives would adversely affect threatened, endangered, or sensitive fish species (TES) or their proposed or designated critical habitat due to no TES fish species or their habitat occurring within or adjacent to the allotment.
Visual Resources	NI	<p>Safford RMP designated public lands within the Vanar area as Visual Resource Management (VRM) class III, which included only the area next to I-10 and IV, is the rest of the allotment. 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>The objective of Class IV is to provide for management activities that require major modification of the existing character of the landscape. The level of change to the characteristic landscape can be high. These management activities may dominate the view and be the major focus of viewer attention. Every attempt should be made, however, to minimize the impact of these activities through careful location, minimal disturbance and repeating the basic elements.</p> <p>Continuing livestock grazing as proposed in the proposed action or its alternatives would not affect visual resources.</p>
Socioeconomic Values	PI	The proposed action would allow the permittee to continue running their current grazing operation. The alternatives could impact their current operation and the amount of profits they may gain from livestock, and as a result have a minor impact on local communities.
Wilderness Characteristics	NP	Part of the proposed action area lies within wilderness characteristics unit 4-67. This unit was dropped from further review per the "Arizona Initial Inventory of Public Lands Administered by Bureau of Land Management Decision Report September 1979." This unit still does not meet the size requirements for wilderness characteristics. This critical element would not be affected by the proposed action or its alternatives.

3.1 Resources Brought Forward for Analysis

3.1.1 Threatened and Endangered Species

Under all alternatives, the Safford Field Office would implement grazing practices consistent with the Biological Opinion on the Gila District Livestock Grazing Program (22410-2006-F-0414). The current U.S. Fish and Wildlife Service county list for Cochise County was reviewed (Table 3). The BO was also reviewed to insure that administration of the allotment under any alternative is within the scope of the consultation, and all mitigation measures stated in the BO are being followed.

Table 3., Cochise County, Arizona (April 17, 2013).

Common Name	Scientific Name	Listing Status	Comment
American peregrine falcon	<i>Falco peregrinus anatum</i>	D	Considered a Bureau sensitive species. There are no known eryies on, or within five miles of the allotment.
Arizona treefrog	<i>Hyla wrightorum</i>	C	Considered a Bureau sensitive species. Known locations and suitable habitat are greater than five miles away.
Beautiful shiner	<i>Cyprinella formosa</i>	T	No effect. Known locations and suitable habitat are greater than five miles away.
Canelo Hills ladies'-tresses	<i>Spiranthes delitescens</i>	E	No effect. Known locations and suitable habitat are greater than five miles away.
Chiricahua leopard frog	<i>Rana chiricahuensis</i>	T	No effect. Known locations and suitable habitat are greater than five miles away.
Cochise pincushion cactus	<i>Coryphantha robbinsorum</i>	T	No effect. Known locations and suitable habitat are greater than five miles away.
Desert tortoise, Sonoran Population	<i>Gopherus agassizi</i>	C	Considered a Bureau sensitive species. Known locations and suitable habitat are greater than five miles away.
Desert pupfish	<i>Cyprinodon macularius</i>	E	No effect. Known locations and suitable habitat are greater than five miles away.
Gila chub	<i>Gila intermedia</i>	E	No effect. Known locations and suitable habitat are greater than five miles away.
Gila topminnow (incl. Yaqui)	<i>Poeciliopsis occidentalis</i>	E	No effect. Known locations and suitable habitat are greater than five miles away.
Huachuca springsnail	<i>Pyrgulopsis thompsoni</i>	C	Considered a Bureau Sensitive Species. Known locations and suitable habitat are greater than five miles away.
Huachuca water-umbel	<i>Lilaeopsis schaffneriana var. recurva</i>	E	No effect. Known locations and suitable habitat are greater than five miles away.

Jaguar	<i>Panthera onca</i>	E	No effect. Considered with Ocelot due to similar habitat needs and potential dispersal in Arizona. Further discussion in the text.
Lesser long-nosed bat	<i>Leptonycteris curasoae yerbabuena</i>	E	No effect. There are no known roosts on the allotment. The allotment is within forty miles of known roosts and is considered within the foraging range of the bat. Further discussion in text.
Loach minnow	<i>Tiaroga cobitis</i>	E	No effect. Known locations and suitable habitat are greater than five miles away.
Mexican spotted owl	<i>Strix occidentalis lucida</i>	T	No effect. Known locations and suitable habitat are greater than five miles away.
New Mexican ridge-nosed rattlesnake	<i>Crotalus willardi obscurus</i>	T	No effect. Known locations and suitable habitat are greater than five miles away.
Northern aplomado falcon	<i>Falco femoralis septentrionalis</i>	E	No effect. The species is not currently considered to occur in Arizona.
Northern Mexican gartersnake	<i>Thamnophis eques megalops</i>	C	Considered a Bureau sensitive species. Known locations and suitable habitat are greater than five miles away.
Ocelot	<i>Leopardus (=Felis) pardalis</i>	E	No effect. Considered with jaguars due to similar habitat needs and potential dispersal in Arizona. Further discussion in the text.
San Bernardino springsnail	<i>Pyrgulopsis bernardina</i>	C	No effect. Known locations and suitable habitat are greater than five miles away.
Sonora tiger Salamander	<i>Ambystoma tigrinum stebbinsi</i>	E	No effect. Known locations and suitable habitat are greater than five miles away.
Southwestern willow flycatcher	<i>Empidonax traillii extimus</i>	E	No effect. Known locations and suitable habitat are greater than five miles away.
Spikedace	<i>Meda fulgida</i>	E	No effect. Known locations and suitable habitat are greater than five miles away.
Sprague's pipit	<i>Anthus spragueii</i>	C	Considered a Bureau sensitive species. Known locations and suitable habitat are greater than five miles away.
Yaqui catfish	<i>Ictalurus pricei</i>	T	No effect. Known locations and suitable habitat are greater than five miles away.
Yaqui chub	<i>Gila purpurea</i>	E	No effect. Known locations and suitable habitat are greater than five miles away.
Yaqui topminnow	<i>Poeciliopsis occidentalis sonoriensis</i>	E	No effect. Known locations and suitable habitat are greater than five miles away.
Yellow-billed cuckoo	<i>Coccyzus americanus</i>	C	Considered a Bureau sensitive species. Known locations and suitable habitat are greater than five miles away.

E – Endangered, T – Threatened, C – Candidate, D – Delisted Reference <http://arizonaes.fws.gov/>

3.1.1.1 Jaguar and Ocelot

Jaguars and ocelots could potentially occur on the allotment due to its proximity to the border with Mexico. The allotment has increased shrub cover, but it is not dense or diverse enough to provide the preferred cover for the species. There are no large ridge lines on the allotment that could be used as movement corridors. The San Simon River is not currently known to be a movement corridor for ocelots or jaguars, there is little dense vegetation along its length, and what there is, it is inconsistent. The section of the San Simon that flows through the allotment is incised and dry with sparse upland vegetation along it. Ephemeral water flows are restricted and constrained through the allotment by upstream retention dams outside of the allotment. Jaguar and ocelot movement is also limited on the allotment by its proximity to surrounding human activity including highways, roads, farming, commercial and residential development. Current livestock grazing on this allotment is not considered a factor in limiting habitat for jaguar and ocelot or a factor in restricting movement along the San Simon River channel. It is extremely unlikely that a jaguar or ocelot would occur on this allotment. The closest known occurrences for the species are approximately 30 miles away for jaguar and 75 miles away for ocelot.

3.1.1.2 Lesser Long-Nosed Bat

For lesser long-nosed bats, there are no known roosts on the allotment. The allotment is within the 40 mile foraging radius from known roosts. This evaluation does not propose any new range improvement projects. Scattered agaves probably exist on the allotment but there are no known concentrations. Nectar feeding bats have not been noted to need or use free water sources such as livestock waters. The impacts of authorized grazing have been considered in the Gila District Grazing BO.

3.1.2 Wildlife

The Vanar Allotment is in the broad San Simon River Valley. It is not diverse in elevation or geology, but has deep well drained soils that can support a diversity of vegetation. In turn, the wildlife on the allotment is relatively diverse. Common large animals include mule deer and javalina in low densities. Small birds, mammals and reptiles are abundant. The San Simon Valley is also known as an important raptor wintering area. Within the San Simon Valley, the management of habitat for quail has been emphasized. There is abundant evidence of past soil erosion on the allotment part of which is a long levee on the allotment. Vegetation has shifted over time to a more shrub dominated community, mesquite, whitethorn, creosote and tar bush are more abundant than in historic times. Consequently wildlife species have shifted to match the habitat. In general, wildlife habitat and species diversity would benefit from vegetation conversion that brings more abundance of herbaceous grasses and forbs into the vegetative community. This would be particularly true if the conversion was done in a manner that increased patchiness and edge effect.

3.1.3 Range

The permittee currently runs a 40 head cow calf operation year round on the allotment. There are no internal pasture fences on the allotment and cattle have access to the dry San Simon river bed. No new range improvements are being proposed on the allotment. Standards throughout the allotment are meeting or progressing towards meeting, current livestock use was not concluded to be a causal factor. Historic factors that may have altered the area include historical heavy continuous grazing, drought, compaction, sheet, rill and gully erosion, erosion control structures, home steading, agriculture development, roads and railroads.

3.1.4 Socioeconomic Values

The small community of San Simon, Arizona is just outside the allotment boundaries the region and identifies largely with the ranching and farming community. With the limited number of businesses in the area, most are involved with some aspect of agriculture.

3.1.5 Soils

The 1980 Soil and Conservation, San Simon Soil Survey identifies two soil mapping units for this allotment. These include the Hondale-Bluepoint-Gothard and Eba-Tres Hermanos- Dona Ana. Field validation of the soil sites indicated that the majority of the soils are Bucklebar Sandy Loam Upland and Tres Hermanos Limy Fan.

Throughout the San Simon Valley, soil loss and erosion are a major problem. On this particular allotment, there is a levee structure and dirt dikes that total approximately seven miles that was intended to divert overland flow.

4.0 Environmental Consequences

4.1 Environmental Consequences of the Proposed Action

4.1.1 Socioeconomics

Under the proposed action, the permittees would continue running a livestock operation on the allotment. The permittee would continue to contribute in a small way to the economy of the local community. In addition, the county would continue to receive the allotment proportion of in lieu taxes.

4.1.2 Threatened and Endangered

Because of the allotments proximity to the border with Mexico jaguar and ocelot were considered. There is no known occurrence of these species on the allotment. The habitat on the

allotment in not conducive to these species, and there are no suitable movement corridors on the allotment. The proposed action will have no effect on jaguar and ocelot.

The allotment is within the foraging range of lesser long nosed bats, although they have not been documented on the allotment they may forage across the allotment. The allotment does not provide an abundant food source for the species. Livestock management under the proposed action will have no effect on agaves and therefore no effect on the bat.

4.1.3 Wildlife

Under proposed action, the permittee would retain maintenance responsibilities for the range improvements that provide water for wildlife. There is little evidence that continued yearlong grazing at light stocking rate (1.4 head per section) would alter the vegetative community or preclude the community from change within the constraint of the ecological site. Continued grazing in its self would not reduce shrub dominance and benefit wildlife in the creation of patchiness and edge effect.

The Safford Field Office reviewed a list of known Special Status Species occurrences in or within five miles of the Vanar Allotment provided by the Arizona Game and Fish Department, Heritage Data Management System on May 1, 2009 (AGFD #M09-04213056) and rechecked in May 2013. Table 4 contains the species considered special status by the Bureau (IM # AZ-2011-005) that were on that list.

Table 4. BLM Special Status Species in or within Five Miles of the Vanar Allotment.

Common Name	Scientific Name	Status
Western burrowing owl	<i>Athene cunicularia hypugaea</i>	Bureau Special Status Species
Sonoran Desert tortoise	<i>Gopherus agassizii</i>	AGFD Species of Special Concern

Western burrowing owls are a rare occurrence in the San Simon Valley. Burrowing owls are adaptable to human activities and are often associated with farming. It is most likely that this observation was on the surrounding agriculture lands.

The one reported occurrence of desert tortoise is disjunct from all other known locations and habitat in Arizona. This occurrence is likely the result of a captive release since the allotment is not considered within the range of the Sonoran Desert tortoise.

Therefore, livestock management under any of the alternatives would not impact Bureau sensitive species.

4.1.4 Range

Under the proposed action, continuous yearlong grazing would continue at a light stocking rate (1.4 head per section).

Multiple historic impacts have caused this area to be a shrub dominated community. In order to substantially alter this community to achieve another plant community, it is referenced in the ecological site guide, that potentially seeding or planting of native grasses, proper grazing or no grazing, and rill and gully erosion control would benefit range operations. Shrub treatments and seeding have had little to no success in areas throughout the valley. Success is limited in this area because of the low amount of average rainfall which is eight inches on average. The ability of a site to increase in native species would depend on the species characteristics (native and/or non-native) that are present, and the ecological site.

4.1.5 Soils

The levee that exists on this allotment is perpendicular to water flow it does slow flow and allow sediment to be deposited. Sediment aggraded behind these types of structures and slowly over time provided areas for perennial grasses and other herbaceous vegetation to become established. Away from the structure on loamy upland sites there is evidence of old rills and gullies healing; indicated by signs including rounded edges and grass establishment on banks and grass establishment. The existing structure would continue hold sediment and there is reason to believe that the rills and gullies would continue to heal.

Stability structures and considerable amount of time areas should continue to improve under all alternatives. The proposed action or the alternatives are not likely to significantly alter the vegetative community or soil stability to any extent.

4.2 Environmental Consequences of Alternative 1 (Ephemeral Use)

4.2.1 Socioeconomics

The current permittees would have difficulty maintaining an economically feasible livestock operation on an allotment under ephemeral management. Livestock turnout would likely occur two to three years out of every five. Stocker operations consistent with ephemeral grazing require large money reserves to purchase calves on short notice to take advantage of green ups. A small operator would not be able to operate in this manner, and would likely have to sale to a large operator based outside of the community. The small positive impact the current operation has on the local economy would be shifted to other parts of the state or out of state. Range improvements maintenance is not required during periods of nonuse but when use is authorized, permittees often have to replace and repair many range improvements which can become quite costly.

The county would continue to receive the allotment proportion of in lieu taxes, but only in those years livestock are permitted.

4.2.2 Threatened and Endangered Species

With ephemeral grazing livestock will use the allotment irregularly but that use will be somewhat more intensive. This difference in use will not alter the anticipated impacts to T and E species described in the proposed action. There would be no effect on listed species with the implementation of Alternative 1.

4.2.3 Wildlife

Under an ephemeral grazing determination, there would be less impetus for the permittee to keep water development up and functioning. This would be particularly true if the allotment were sold to a company specializing in stocker operations. Wildlife would likely be without livestock waters for extended periods of time two to three years on average. To maintain water for wildlife at the level they have now, the Bureau may have to assume maintenance of some of the livestock improvements, or construct alternative water sources. There is little evidence that a shift from yearlong grazing to ephemeral grazing would result in a change in the vegetative community. It would not result in a reduction of shrubby species and like would not result in any discernible increase in herbaceous vegetation.

4.2.4 Range

Under ephemeral management, livestock grazing would be licensed for unpredictable amounts of time only during periods of favorable climate. Purchasing cattle on short notice and selling them after a short time is generally not feasible. The permittee would have to have a livestock operation elsewhere to keep cattle most years, or specialize in stocker operations.

Ephemeral range is defined as an area that does not consistently produce enough forage to sustain a year round livestock operation but may briefly produce unusual volumes of forage to accommodate livestock grazing. In years of abundant moisture and other favorable climatic conditions a large amount of annual forage may be produced.

Allotments may be classified as Ephemeral through Rangeland Health Assessments in accordance with the Special Ephemeral Rule, published December 7, 1968. BLM has established criteria based upon the Special Rule through which allotments can be classified as ephemeral. These criteria include:

1. Rangelands are within the hot desert biome.
2. Average annual precipitation is less than 8 inches.
3. Rangelands produce less than 25 pounds per acre of desirable forage grasses.

4. The vegetative community is composed of less than 5% desirable forage species.
5. The rangelands are generally below 3,500 feet in elevation.
6. Annual production is highly unpredictable and forage availability is of a short duration.
7. Usable forage production depends on abundant moisture and other favorable climatic conditions.
8. Rangelands lack potential to improve existing ecological status and produce a dependable supply of forage through intensive rangeland management practices.

Typical of all Limy fans ecological sites, they have little perennial grass components and have the most ephemeral rangeland characteristics. Limy Fan sites are meeting standard through the Upland Health Evaluation. These areas also have little evidence of use. These areas are naturally being used in years with abundance annual forage without the whole allotment being classified as ephemeral use only. A minor percentage of the total plant composition on this allotment is made up of perennial grass species there is a vast supply of desirable perennial forage plants that include many highly palatable shrub species throughout.

The proposed action area has intermixed ownership of land that includes private, BLM and State. If the private land owner and the state land department do not agree with and manage consistent with the ephemeral determination then approximately 22 miles of fence would need to be constructed around private property, and 4 miles to exclude state lands. In most cases, for cattle to access non-federal parcels of land they would have to be trailed across BLM land.

4.2.5 Soils

If non-federal areas were fenced off so they could be ran independently of federal lands, the effects of high concentrations of cattle in small fence parcels of private/state land could cause increase erosion and eventually head cutting from the loss of vegetation on these. Without the permitted yearly use of federal grazing allotments, parcels of land are often sold off for farming or house development. This could also cause soil compaction, increase runoff and soil loss.

4.3 Environmental Consequences of No Grazing Alternative:

4.3.1 Socioeconomics

Under the no grazing alternative, there would be a small loss to the local economy. In addition, the loss of grazing fees would mean small losses in general treasury funds, in lieu taxes to the county and a small loss to the BLM in range improvement funds. The permittee would lose all values of the permit except for their vested interest in range improvement projects, which would be purchased by the Bureau of Land Management.

4.3.1 Threatened and Endangered Species

If Alternative 2 is implemented no livestock would be permitted on the public land portions of the allotment. The impacts to listed species under this alternative would not be different from that described in the proposed action. There would be no effect on listed species under Alternative 2.

4.3.2 Wildlife

Under the Taylor Grazing Act, the Bureau would have to purchase the permittees vested interest in the 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 to wildlife. Permanent removal of livestock would not, on its own, shift the vegetative community from shrub dominated, create edge effect or diversify habitat.

4.3.3 Range

If the no grazing alternative is selected, the permittee 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 26 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.

4.3.4 Soils

Under the no livestock grazing alternative soil processes would be improved. Areas where annual plant species dominate, are expected to remain static. Healthy, vigorous perennial under story plants would increase in the long term, but annual species would increase in the short term, until vigorous root systems of the perennial plants increase, reducing annual species establishment. Where present soil biological crusts would increase from the lack of livestock trampling.

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 and T&E Fish/Fisheries would have no cumulative impacts from the proposed action or alternatives as they are not found within or adjacent to the Vanar allotment. Visual Resources would not be altered by the proposed action or alternatives and therefore would not add to cumulative impacts.

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. Some of the first settlers were cattle ranchers that developed ground water for domestic and stock purposes from shallow wells. This water was adequate at the time for ranching and the newly arrived railroads. In 1889 18,000 acres of the San Simon Valley were being irrigated for farms. By 1895, over 50,000 cattle grazed unreserved public domain in uncontrolled open range the area was rapidly depleted the forage. The range was stocked beyond its capacity, causing changes in plant, soil, and water relationships. In 1910 the first artesian well was discovered by the railroad in the valley. By 1915 there were 127 flowing wells in and around San Simon. Continuous flows from these wells were average to be 11,000 acre-feet per year. With the decline of agriculture during World War I many farms were abandoned and uncapped wells flowed without use, eventually finding the San Simon River providing it with intermittent round flow. Erosion was exacerbated by two periods of severe drought (1903 through 1905 and 1914 through 1915) followed by heavy rains. Severe head cutting led to the formation of gullies that quickly moved up the valley with each major flood. By 1950 many artesian wells were being pumped with the decline of artesian head (free flowing water). Today there are less than ten artesian wells in the sub-basin of the San Simon. In response to these problems, livestock grazing reform began in 1934 with the passage of the Taylor Grazing Act. Subsequent laws, regulations, and policy changes have resulted in adjustments in livestock numbers, season-of-use changes, and other management changes.

In 1936 the first attempts were made to process application and claims for livestock use on public lands. First consideration was given to livestock operators who could show control or prior use of water necessary to support livestock grazing on public lands. In most areas, the application for livestock grazing exceeded the land's actual carrying capacity.

In 1935 and 1936 the Soil Conservation Service conducted a range survey of the public lands and presented its findings 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 improvement were constructed throughout the area. A number of range projects have been completed over time on the Vanar allotment, 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.

Protective vegetative cover was reduced, and more runoff brought erosion, rills, and gullies. Some speculate that the changes are permanent and irreversible, turning plant communities from grass and herbaceous species to brush and trees.

Although the amount of farming has decreased in recent years, there have been observations of many areas that were once historically farmed are now being farmed using deeper ground water wells and being replanted with drip irrigation and sprinkler systems for pecans and pistachios.

Recreation: There are no developed recreation facilities in the allotment; 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. Overall, there is very little sign of recreation use or subsequent impacts. There are no recreation related concerns that would contribute to cumulative impacts.

Structures: A long levee with a connected drop structure exists on the allotment, throughout the valley extensive system of earthen dikes, wing dams, and rock-walled barriers. As well as power lines, and underground structures, include: fiber optic cable, petroleum pipeline, natural gas pipeline with an above ground pumping station. There is potential for additional structures in the I-10 corridor on the north side of the allotment. A proposal for a large power line (Sun Zia) there is a reasonable likelihood that it would be constructed in the foreseeable future.

4.6 Cumulative Impacts of the Proposed Action and Alternatives

4.7 Proposed Action

Historic impacts in this area have changed resources to their current state of shrub increase in certain areas. These impacts cumulative have had serious and irreversible effects to resources. Under the proposed action, there would be the continuation of healing in soil stability throughout the area. Gradual improvement in ecological condition over an extended period of time in areas of concern should be seen with increase of perennial grass cover in the interspaces on certain ecological sites. The slow incremental change in vegetation under the proposed action would continue. When considered with cumulative impacts from past, present, and reasonably foreseeable future actions, these changes would be minor and would not adversely affect resources under the proposed action.

4.8 Alternative 1

Under ephemeral grazing, cumulative impacts would be similar to that of the proposed action. Grazing would occur in two to three years out of five on average. There would be a higher concentration of livestock during those years when cattle are turned out, resulting in more short term impacts such as trails and more intense use of vegetation. This would be offset by those years when cattle are not turned out. Over the long term the cumulative impacts are not likely to be different from the proposed action.

4.9 No Grazing Alternative

Cumulative impacts under the no grazing alternative could potentially include gradual increases in perennial plant diversity, plant cover, and production over the long term this change might be a slightly faster but indistinguishable from the other two alternatives in areas of higher potential, but no decrease in shrub species would be expect by only excluding grazing. There would be no discernible change in cumulative impacts under the no grazing alternative.

5.0 Consultation and Coordination

5.1 Compliance and Monitoring

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

5.2 Persons/Agencies Consulted:

Safford Field Office:

Archaeologist, Dan McGrew

Wildlife Biologist, Tim Goodman

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

Vanar Permittee

Interested Parties

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Arizona Standards and Guidelines Evaluation Vanar Allotment #5138

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).

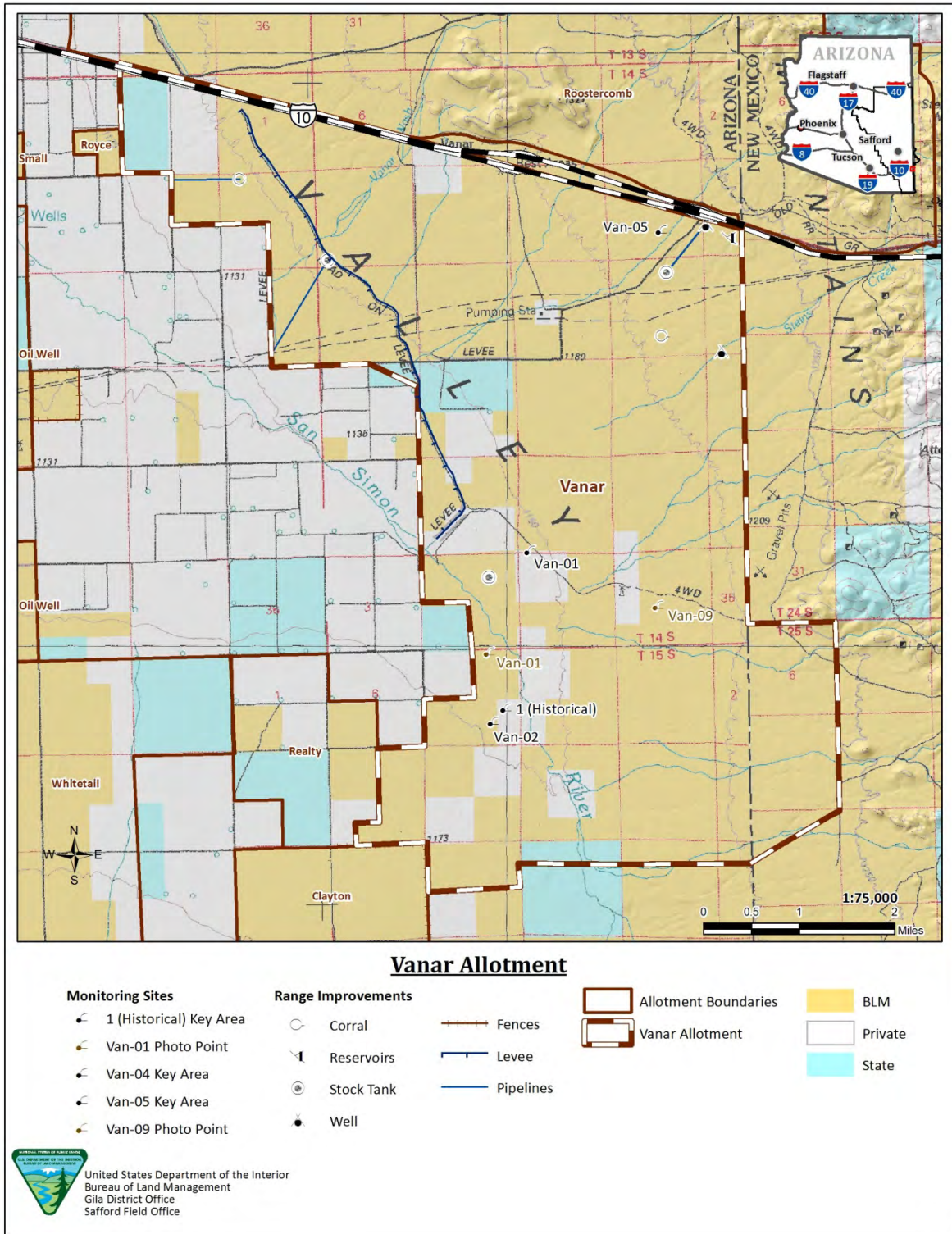
2.0 General Description of Evaluation Area

The Vanar allotment is located in Cochise County about six miles southeast of San Simon, Arizona (Figure 1). It borders I-10 on the north, the state of New Mexico on the east, and the farms in the San Simon Valley on the west.

Elevation on the east boundary of the allotment is approximately 4,040 feet. The allotment slopes gently to the west and the lowest point is approximately 3,720 feet. It is dissected by numerous small washes. The San Simon River is located on the west side of the allotment.

In the 1940's, the San Simon watershed was recognized as one of the most degraded watersheds in the United States. The cutting and deepening of the stream channel and its major tributaries resulted in the lowering of the water table which caused perennial vegetation to die off. This led to the eventual loss of soil cover. Sheet erosion occurred throughout the area and the watershed was invaded by many undesirable plant species (ADEQ,2004).

Figure 1. Map of the Vanar Allotment.



3.0 Grazing Use

3.1 Grazing History

From the time grazing was authorized on the allotment to 1972 use on the allotment has averaged 50 Cattle Year Long (CYL's). In August 29, 1980 a decision was issued to reduce the authorized use to 40 CYL's at 73% public land that decision became final March 1st, 1981. On June 19, 1988 the Arizona Department of State land exchanged a portion of their holdings with in the allotment to the BLM which changed the permit for the final time to 40 CYL at 90% public land and 432 AUM's.

3.2 Current Management

The current management on the allotment is yearlong grazing on the entire allotment.

3.3 Actual Use

Actual use data for livestock was determined through Actual Use Reports, Form 4130-5, when actual use reports were not available numbers were taken from past billing statements. Permittee has reported running full permitted number for the past ten years.

3.4 Terms and Conditions of the Permit

Table 1

Allotment	Livestock number	Kind	Grazing Period		%PL	TypeUse	AUMS
			Begin	End			
51380	40	Cattle	03/01	2/28	90	Active	432

4.0 Evaluation Area Profile

4.1 Land Status

The Vanar allotment is identified as an M (Maintain) category allotment. Category M allotments are where land health standards are met or where livestock grazing on public land is not a significant causal factor for not meeting the standards and current livestock management is in conformance with guidelines developed by the State Directors in consultation with Resource Advisory Councils.

Table 2. Land/Ownership Status and Acreage of the Vanar Allotment.

Type of Acreage	Acres
Public Land	17,600
Private Land	1,600
State Land	500
Total Controlled Lands	19,700

4.2 Soils and Ecological Sites

Soils:

The 1980 Soil Survey for the San Simon Area identifies two soil mapping units, Hondale-Bluepoint-Gothard and Eba-Tres Hermanos- Dona Ana, for this allotment. Field validations of the soil on upland health sites are Bucklebar and Tres Hermanos and represent the majority of the allotment.

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

The Tres Hermanos gravelly sandy clay loam series consists of deep, well drained soils on fan terraces and hillsides. These soils formed in mixed alluvium and colluvium. Slope is 5 to 45 percent. The solum ranges from 17 to 30 inches in thickness. The profile is 15 to 35 percent coarse fragments. It is mildly alkaline to strongly alkaline. The A1 horizon is light brown, pinkish gray, pale brown, or brown. It is very gravelly sandy loam or gravelly sandy clay loam.

The B2t horizon is brown, light brown, light reddish brown, or reddish brown. It is clay loam, heavy loam, or sandy clay loam. It ranges from 10 to 40 percent coarse fragments but averages 15 to 35 percent. The C horizon is pinkish gray, white, reddish, brown, light brown, brown, or very pale brown. It is sandy loam, gravelly or very gravelly sandy loam, gravelly or very gravelly loamy sand, gravelly loam, or gravelly clay loam. Limy fans are associated with this soil type.

The Bucklebar series consists of deep, well drained soils on fan terraces. These soils formed in mixed alluvium derived from granitic rock. Slope is 2 to 10 percent. Typical pedon of a Bucklebar sandy loam in an area of Sonoita-Bucklebar complex, 2 to 10 percent slopes, about 8 miles southwest of Pima; 1,500 feet east and 1,100 feet north of the southwest corner of sec. 18, T. 7S., R. 24 E., Graham County. Thickness of the solum ranges from 24 to 30 inches. The control section averages less than 15 percent coarse fragments. Content of carbonates increases

with depth. The A horizon is light brown or brown. The buried 82t and IIC horizons are not present in all pedons. This soil type is associated with Sandy loam upland ecological site.

Major Land Resources:

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

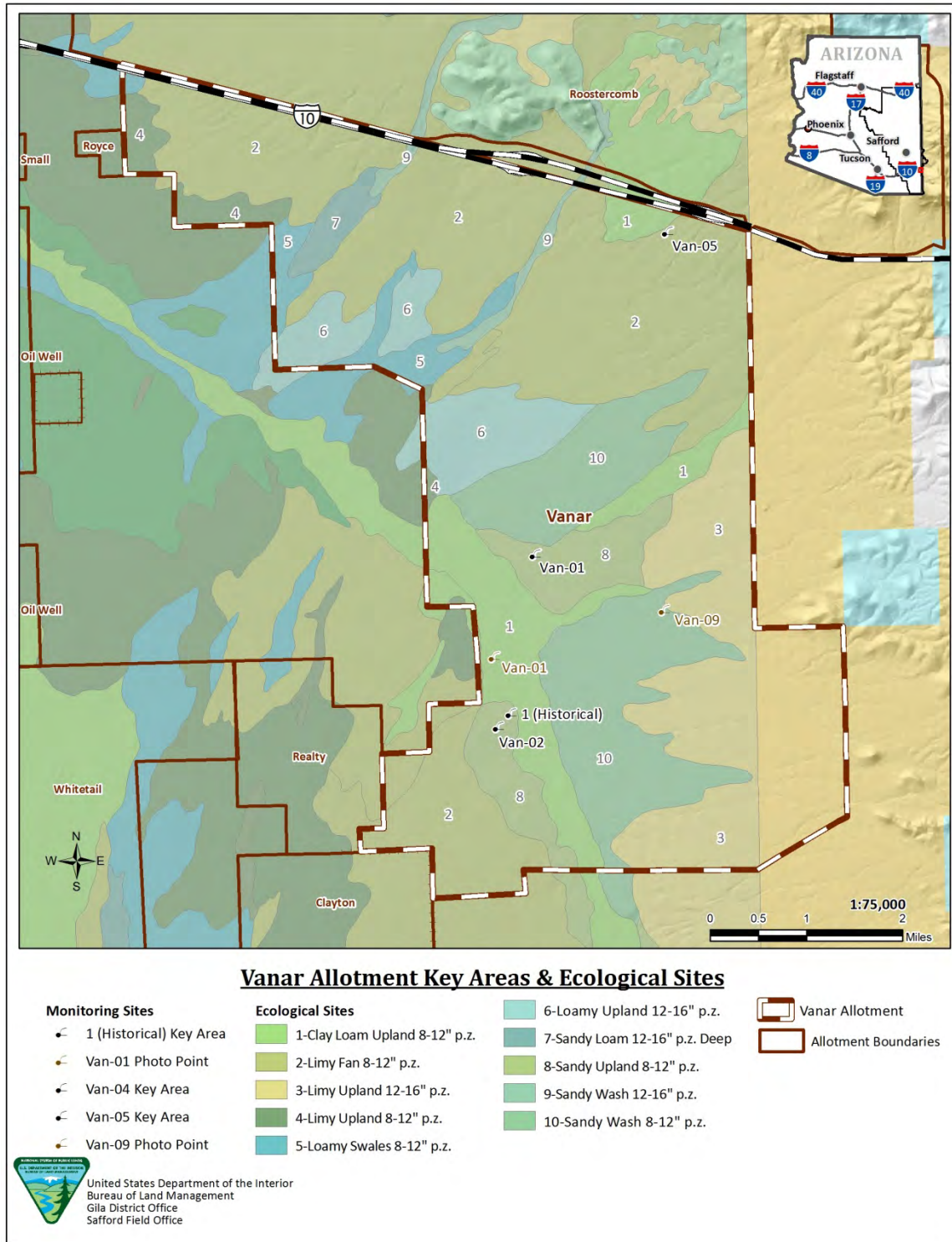
The Natural Resource Conservation Service characterizes land resource regions by particular patterns of soils, climate, water resources and land uses. These large regions are then grouped into Major Land Resource Areas (MLRAs). The Vanar allotment is classified in MLRA 41-2 (8-12 inches of precipitation/ per year). MLRA's are then broken down further into ecological sites, which are associated units of soil and vegetation with quantifiable characteristics (Figure 2). The ecological sites occurring on the Vanar Allotment include: limy fan, sandy wash, loamy swales, loamy upland, clay loam upland, sandy upland, and limy upland. Ecological sites were field validated the major ecological sites are Limy Fan and Sandy Loam Upland.

Vegetation:

Limy Fan potential plant community is a shrub-land dominated by creosote bush (*Larrea tridentata*). Annual forbs and grasses are very important to this plant community and will only occur in years of normal to above normal winter or spring rain.

Sandy loam upland native potential plant community on this site is a mixture of perennial grasses, desert shrubs, and cacti. Annual forbs and grasses, of winter and summer seasons, are both very important in the plant community in their respective (wet) seasons. Black grama (*Bouteloua eriopoda*) and bush muhly (*Muhlenbergia porteri*) are the dominant perennial grasses, with lesser amounts of three-awns. The cover of shallow rooted grass species, like Rothrock grama (*Bouteloua rothrockii*) fluctuate widely from wet to dry years.

Figure 2. Vanar Allotment Key Areas and Ecological Sites



4.3 Climate

Climate data was collected from the PRISM Climate Mapping Program. PRISM (Parameter-elevation Regressions on Independent Slopes Model) is an analytical tool that uses point data, a digital elevation model, and other spatial data sets to generate fine scale (4-km, 2.5 arc-minutes) grid-based estimates based estimates of monthly precipitation and temperature from 1895-present. The location from where the 4-kilometer grid was set from is close to the center of the allotment (32.19 N 109.08 W).

Precipitation:

Precipitation ranges from 8-12 inches annually. More than half falls during July-Sep in brief, but often heavy, thunderstorms. The rest of the moisture comes as light rain or snow that falls slowly for a day or more, but rarely lasts more than a day. April thru June is normally the driest months. Humidity is generally very low. The PRISM data point listed the average precipitation amount from January 1895 to March 2013 as 9.84 inches. Approximately 8.8 miles to the north, the BLM has been monitoring precipitation since 1998 at its McKensie gauge. Average rainfall between 1999 and 2011 was 9.76 inches and the median rainfall was 8.31 inches.

Temperature:

Temperatures are mild throughout most of the year. Freezing temperatures are common at night Dec-Feb; brief 0 F may be observed some nights. During June, July & August some days may exceed 100 F. The data collected from the PRISM program provides monthly temperature averages, which was then averaged by seasons Winter 45°F, Spring 60°F, Summer 79°F and Fall as 63°F.

4.4 Wildlife Resources/Special Status Species

Wildlife:

The Vanar Allotment is located in the broad San Simon River Valley. It is not diverse in elevation or geology, but has deep well drained soils that can support a diversity of vegetation. In turn the wildlife on the allotment is relatively diverse. Common large animals include mule deer and javelina. Small birds, mammals and reptiles are abundant. The San Simon Valley is known as an important raptor wintering area. Within the San Simon Valley the management of quail habitat has been emphasized. Vegetation has shifted over time on the sandy loan upland site to a more shrub dominated community with mesquite (*Prosopis velutina*), whitethorn acacia (*Acacia constricta*), creosote (*Larrea tridentata*), and tarbush (*Flourensia cernua*) being more abundant than in historic times. In general, wildlife habitat would benefit from vegetation

conversion that brings more abundance of herbaceous grasses and forbs into the vegetative community. This would be particularly true if the conversion was done in a manner that increased patchiness in vegetative patterns and increased edge effect.

Quail and rabbits provide for small game hunting opportunities on the allotment as well as a portion of the prey base for wintering raptors. Habitat for these species and numerous non-game species is good. Small vegetation treatments or large treatments done in a manner that creates small interlaced patches of the increased shrub component may enhance the habitat for small and non-game species occurring on the allotment.

Threatened and Endangered:

The Safford Field Office implements its 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 administration of the allotment is within the scope of the consultation, and all conservation measures stated in the BO are being followed.

In addition to reviewing the grazing BO the Bureau reviewed the Cochise County listed and candidate species listed in Table 3.

Table 3. , Cochise County, Arizona (April 17, 2013).

Common Name	Scientific Name	Listing Status	Comment
American peregrine falcon	<i>Falco peregrinus anatum</i>	D	Considered a Bureau sensitive species. There are no known eryies on, or within five miles of the allotment.
Arizona treefrog	<i>Hyla wrightorum</i>	C	Considered a Bureau sensitive species. Known locations and suitable habitat are greater than five miles away.
Beautiful shiner	<i>Cyprinella formosa</i>	T	No effect. Known locations and suitable habitat are greater than five miles away.
Canelo Hills ladies'-tresses	<i>Spiranthes delitescens</i>	E	No effect. Known locations and suitable habitat are greater than five miles away.
Chiricahua leopard frog	<i>Rana chiricahuensis</i>	T	No effect. Known locations and suitable habitat are greater than five miles away.
Cochise pincushion cactus	<i>Coryphantha robbinsorum</i>	T	No effect. Known locations and suitable habitat are greater than five miles away.
Desert tortoise, Sonoran Population	<i>Gopherus agassizi</i>	C	Considered a Bureau sensitive species. Known locations and suitable habitat are greater than five miles away.
Desert pupfish	<i>Cyprinodon macularius</i>	E	No effect. Known locations and suitable habitat are greater than five miles away.
Gila chub	<i>Gila intermedia</i>	E	No effect. Known locations and suitable habitat are greater than five miles away.
Gila topminnow (incl. Yaqui)	<i>Poeciliopsis occidentalis</i>	E	No effect. Known locations and suitable habitat are greater than five miles away.
Huachuca springsnail	<i>Pyrgulopsis thompsoni</i>	C	Considered a Bureau Sensitive Species. Known locations and suitable habitat are greater than five miles away.
Huachuca water-	<i>Lilaeopsis</i>	E	No effect. Known locations and suitable habitat are greater

umbel	<i>schaffneriana</i> var. <i>recurva</i>		than five miles away.
Jaguar	<i>Panthera onca</i>	E	No effect. Considered with Ocelot due to similar habitat needs and potential dispersal in Arizona. Further discussion in the text.
Lesser long-nosed bat	<i>Leptonycteris curasoae yerbabuena</i>	E	No effect. There are no known roosts on the allotment. The allotment is within forty miles of known roosts and is considered within the foraging range of the bat. Further discussion in text.
Loach minnow	<i>Tiaroga cobitis</i>	E	No effect. Known locations and suitable habitat are greater than five miles away.
Mexican spotted owl	<i>Strix occidentalis lucida</i>	T	No effect. Known locations and suitable habitat are greater than five miles away.
New Mexican ridge-nosed rattlesnake	<i>Crotalus willardi obscurus</i>	T	No effect. Known locations and suitable habitat are greater than five miles away.
Northern aplomado falcon	<i>Falco femoralis septentrionalis</i>	E	No effect. The species is not currently considered to occur in Arizona.
Northern Mexican gartersnake	<i>Thamnophis eques megalops</i>	C	Considered a Bureau sensitive species. Known locations and suitable habitat are greater than five miles away.
Ocelot	<i>Leopardus (=Felis) pardalis</i>	E	No effect. Considered with jaguars due to similar habitat needs and potential dispersal in Arizona. Further discussion in the text.
San Bernardino springsnail	<i>Pyrgulopsis bernardina</i>	C	No effect. Known locations and suitable habitat are greater than five miles away.
Sonora tiger Salamander	<i>Ambystoma tigrinum stebbinsi</i>	E	No effect. Known locations and suitable habitat are greater than five miles away.
Southwestern willow flycatcher	<i>Empidonax traillii extimus</i>	E	No effect. Known locations and suitable habitat are greater than five miles away.
Spikedace	<i>Meda fulgida</i>	E	No effect. Known locations and suitable habitat are greater than five miles away.
Sprague's pipit	<i>Anthus spragueii</i>	C	Considered a Bureau sensitive species. Known locations and suitable habitat are greater than five miles away.
Yaqui catfish	<i>Ictalurus pricei</i>	T	No effect. Known locations and suitable habitat are greater than five miles away.
Yaqui chub	<i>Gila purpurea</i>	E	No effect. Known locations and suitable habitat are greater than five miles away.
Yaqui topminnow	<i>Poeciliopsis occidentalis sonoriensis</i>	E	No effect. Known locations and suitable habitat are greater than five miles away.
Yellow-billed cuckoo	<i>Coccyzus americanus</i>	C	Considered a Bureau sensitive species. Known locations and suitable habitat are greater than five miles away.

E – Endangered, T – Threatened, C – Candidate, D - Delisted

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

Jaguar and Ocelot:

The Bureau is committed to the following conservation measures from the Biological Opinion on the Gila District Livestock Grazing Program (22410-2006-F-0414) for jaguar and ocelot.

1. The BLM will work with Wildlife Services, the AGFD, and the FWS as necessary with regard to minimizing the potential for effects to jaguars and ocelots related to predator control on BLM lands.
2. The BLM will inform any entity associated with the livestock grazing program to not subject jaguars or ocelots to any predator control activities.
3. The BLM will continue, at least annually, to inform permittees with allotments within the range of the jaguar or ocelot, as appropriate, of the potential occurrence of jaguars or ocelots in their allotments, the status of the jaguar and ocelot, and that take of jaguar or ocelot, including harm and harassment, is prohibited under the Act and could result in prosecution.
4. The BLM will maintain dense, low vegetation (mesquite, cottonwood, willow, etc.) in major riparian or xero-riparian corridors on BLM-administered lands within the jaguar and ocelot ranges to the extent possible under the BLM's grazing program.
5. The BLM will continue to implement grazing actions that improve conditions of riparian areas.
6. The BLM will appropriately report any observations of jaguars or ocelots. The BLM, FWS, and AGFD will share information concerning general jaguar and ocelot locations and movement so that appropriate grazing related notifications and actions can be taken to protect against adverse effects.

Jaguars and ocelots have similar habitat needs and appear to be dispersing into Arizona in a similar manner. As considered in the opinion, jaguars and ocelots could potentially occur on the allotment due to its proximity to the border with Mexico. Although, the allotment has increased shrub cover it is not dense enough to provide preferred cover for the species. There are no large ridge lines on the allotment that could be used as movement corridors. The San Simon River is not currently known to be a movement corridor for ocelots or jaguars there is little dense vegetation along its length and what there is, is inconsistent. At the downstream side where the river exits the allotment a five mile long levee protecting private farm lands connects with the river channel. This along with added surface moisture from the farm fields on both sides of the river and the effect of the interstate highway culverts backing up and spreading out water flow results in some increased vegetation along the San Simon outside and downstream of the allotment. From the intersection of the diversion dike, through the allotment, too two miles upstream, south of the allotment boundary the river is very dry with little to no potential for vegetation change. Two miles south of the allotment, retention dikes across the main channel backs up flows, increasing soil moisture resulting in more vegetation in the channel. Since water release is limited from the dams upstream of the allotment water does not spread out in the

channel as it crosses the allotment greatly narrowing the flow and potential for vegetation development along the channel. Jaguar and ocelot movement is also limited on the allotment by its proximity to human activity including highways, roads, farming, commercial and residential development. Current livestock grazing is not considered a factor in limiting jaguar and ocelot movement along the river channel. The closest known occurrences for the species are approximately 30 miles away for jaguar and 75 miles away for ocelot. It is extremely unlikely that a jaguar or ocelot would occur on this allotment. The grazing permittees will be notified annually that take of jaguar or ocelot could result in prosecution.

Lesser Long-Nosed Bat

The Bureau is committed to the following conservation measures from the Biological Opinion on the Gila District Livestock Grazing Program (22410-2006-F-0414) for lesser long-nosed bat.

1. The BLM will ensure that grazing related actions do not directly or indirectly affect day roost sites on BLM land as they are identified. The BLM will ensure that grazing program actions such as road construction and maintenance do not facilitate public access to known lesser long-nosed bat roosts.
2. The BLM will support surveys for lesser long-nosed bats to facilitate better management of lesser long-nosed bats and their habitat. Within the foraging range of lesser long-nosed bats, the BLM will consider the bat's forage base in any allotment evaluation, and, if necessary, modify grazing actions appropriately to reduce adverse effects.
3. The BLM will conduct, prior to construction of range improvement projects, pre-construction surveys for paniculate agaves and saguaros that may be directly affected by construction activities, or in the case of new water sources, may occur within 0.5 mi of the proposed water source. If agaves or saguaros are found during pre-construction surveys, the following measures shall be implemented:
 - a. Locate fences, pipelines, waters, and other range improvement projects to reduce as much as possible injury and mortality of agaves and saguaros.
 - b. Limit disturbance to the smallest area practicable and locate projects in previously-disturbed areas whenever possible.
 - c. Limit vehicle use to existing routes and areas of disturbance except as necessary to access or define boundaries for new areas of construction or operation.
 - d. Limit all workers' activities and vehicles to designated areas.
4. The BLM will not seed/plant non-native plants on any allotments in which paniculate agaves or saguaros occur.

For lesser long-nosed bats there are no known roosts on the allotment. The allotment is within the 40 mile foraging radius from known roosts. This evaluation does not propose any new range

improvement projects. Scattered agaves probably exist on the allotment but there are no known concentrations. There are no known impacts from livestock grazing on agaves on the allotment.

Special Status Species:

The Safford Field Office reviewed a list of known Special Status Species occurrences in or within five miles of the Vanar Allotment provided by the Arizona Game and Fish Department, Heritage Data Management System on May 1, 2009 (AGFD #M09-04213056) and rechecked July 2012. Table 4 contains the species considered special status by the Bureau (IM # AZ-2011-005) that were on that list.

Table 4. BLM Special Status Species in or within Five Miles of the Vanar Allotment.

Common Name	Scientific Name	Status
Western burrowing owl	<i>Athene cunicularia hypugaea</i>	Bureau Special Status Species
Sonoran Desert tortoise	<i>Gopherus agassizii</i>	AGFD Species of Special Concern

Western burrowing owls are a rare occurrence in the San Simon Valley. Burrowing owls are adaptable to human activities and are often associated with farming. It is unlikely that livestock management on this allotment negatively affects this species.

The one reported occurrence of desert tortoise is disjunct from all other known locations and habitat in Arizona. This occurrence is likely the result of a captive release since the allotment is not considered within the range of the Sonoran Desert tortoise.

4.5 Special Management Areas

There are no special management areas within the Vanar Allotment.

4.6 Recreation Resources

There are no developed recreation facilities in the allotment; 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 at this time.

4.7 Visual Resources

The Safford Resource Management Plan (RMP) designated public lands within the Vanar area as Visual Resource Management (VRM) class III, which includes the area next to I-10. The rest of

the allotment is classified as a Class IV designation. 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. The objective of Class IV is to provide for management activities that require major modification of the existing character of the landscape. The level of change to the characteristic landscape can be high. These management activities may dominate the view and be the major focus of viewer attention. Every attempt should be made, however, to minimize the impact of these activities through careful location, minimal disturbance, and repeating the basic elements.

4.8 Cultural Resources

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

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

The State Historic Preservation Officer (SHPO), the Advisory Council on Historic Preservation, and Indian tribes having historical ties to Arizona public lands were consulted during the preparations of the Upper Gila/San Simon Grazing Environmental Impact Statement (9/78) and the Safford Resource Management Plan (8/91). Indian tribes were consulted at the beginning of the permit renewal process. There were no areas of Native American concern, Traditional Cultural Properties (TCP), or Sacred Sites identified during consultations.

Allotment case files, AMP files, range project files, Water Source Inventory files, and Cultural Resource files were reviewed to determine areas of livestock congregation and whether these areas have been previously inventoried for cultural resources. The records indicate that there are nine areas of livestock congregation that required an intensive field inventory, which was completed on 4-30-2009. Because no historic properties were identified in areas of livestock congregation, no mitigation is recommended as a BLM responsibility or as a term or condition of the permit, to protect cultural values identified above.

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

If in connection with allotment operations under this authorization, any human remains, funerary objects, sacred objects or objects of cultural patrimony as defined in the Native American Graves Protection and Repatriation Act (P.L. 101-601; 104 Stat. 3048; 25 U.S.C. 3001) are discovered, the permittee shall stop operations in the immediate area of the discovery, protect the remains and objects, and immediately notify the Authorized Officer of the discovery. The permittee shall continue to protect the immediate area of the discovery until notified by the Authorized Officer that operations may resume.

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

4.9 Noxious Weeds/Invasive Species

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

4.10 Inventory and Monitoring Data and Methodology

All data was collected in accordance with "Sampling Vegetation Attributes, Interagency Technical Reference, 1996." Monitoring on this allotment will occur at approximately five year intervals.

Dry Weight Rank (DWR):

Dry weight rank estimates plant composition on a dry weight production basis. This data collection was made using a 40cm x 40cm plot frame and 100 placements. The three perennial species within a vertical projection of quadrats placed repeatedly (100 times) comprising the most annual biomass production on a dry weight basis are ranked (1st, 2nd, and 3rd most biomass). Multiple ranks are given when less than 3 species are present.

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

Species composition data was collected on the Vanar allotment using the Dry Weight Rank (DWR) methodology at each key area in 2006. Data has been collected again in 2011. Further monitoring is necessary to analyze changes over time. DWR data for 2011 is in Appendix 1.

Ground Cover:

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

Base line ground cover data was collected on the Vanar allotment in 2002 at site Van-05 and 2006 at all other monitoring points. Data has been collected again in 2011. Cover data is located in Appendix 1.

Over the 4-5 year span that monitoring data that is currently available over the 4-5 year time span on the site appears to be stable. Continued monitoring will be conducted in order to analyze differences over time.

Frequency/Trend:

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

Base line pace frequency data was collected on the Vanar allotment in 2006. Data has been collected again in 2011. Frequency data for the 4-5 year span indicates that the plant community was stable and the trend was static. Frequency data is located in Appendix 1.

4.11 Key Areas/Key Species

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

The Vanar allotment has 3 key areas: V-1, Van-04 and Van-05. Van-01 and Van-09 are used as photo points.

Key Species:

Transect V-1: Perennial grass species: Black grama (*Muhlenbergia porteri*), Tobosa (*Pleuraphis mutica*) and Sacaton (*Sporobolus airoides*). Shrub species: Four-wing salt bush (*Atriplex canescens*) and Mesquite (*Prosopis*).

This monitoring location is along the interface of two ecological site intrusions, saline upland and clay loam upland. Together these two ecological site intrusions represent less than 1000 acres of the allotment.

Transect Van-04: Shrub species: Honey Mesquite (*Prosopis torreyana*), and Four-wing saltbush (*Atriplex canescens*). Perennial grass species: Tobosa (*Plueraphis mutica*), Sacaton (*Sporobolus airoides*) and Plains bristlegrass (*Setaria vulpiseta*).

Key Area Van-4 is considered representative of sandy loam upland which occurs on about one third of the allotment. A current assessment the sandy loam portion of the allotment indicates large shrub and tree canopy cover to be around 20% with at least half of the cover from mesquite. As such it is considered to be in the mesquite/annual steady state (NRCS). This ecological site provides a large portion of the available forage. Diet studies in similar areas has shown that 70-80 percent of cattle diet is mesquite and salt bush.

Transect Van-05: Tobosa (*Pleuraphis mutica*), Bush muhly (*Muhlenhergia porteri*) and Three-awn (*Aristida spp.*).

Key Area Van-5 is representative of the limey fan ecological site which occurs on a little over half the allotment.

4.12 Land Health Objectives

Standard 1: Upland Sites

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

Standard 2: Riparian- Wetland Sites

Maintain or improve riparian/wetland areas to facilitate proper functioning condition.

Standard 3: Desired Resource Condition

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

5.0 Management Evaluation

5.1 Upland Health Assessment

Upland health assessments were completed at two key areas on the Vanar Allotment on June 4, 2010. The two key areas were used for the Upland Health Assessment as it represents 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 variance from reference conditions on the site (*i.e.*, None to Slight, Slight to Moderate, Moderate, Moderate to Extreme, and Extreme). These attributes include items such as: litter amount, annual production, compaction layer, plant pedestals, flow patterns, soil and litter movement by wind or water, and 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 Vanar 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
Site 1 – Limy Fan					S, H,B
Site 2- Sandy Loam Upland				B	S,H

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

6.0 Conclusions

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

Site 1 Limy Fan 12 S 0678879 UTM 3654773

- Standard 1. Upland sites do achieve the standard

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

Rationale:

On June 4, 2010, a Rangeland Health Evaluation was completed on the allotment. At the conclusion of the evaluation the site was given a “None to Slight” rating for departure from the Ecological Site Description and Ecological Reference Areas. The site had no evidence of rills, gullies or soil loss, therefore Soil/Site Stability was within normal parameters. Hydrologic Function was at expected levels and was giving a “None-Slight” rating due to the soils moderate water holding capacity and the sites ability to process rain events. Biotic integrity was intact; although litter amounts were somewhat low. When all indicators are factored in the site received a “None-Slight” rating.

- Standard 3 is being achieved for the Limy Fan Ecological Site

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

Site Objectives:

- Perennial Grass 15-25% Composition
 - Key Species
 - Tobosa (*Plueraphis mutica*)
 - Other Species (lesser amounts)
 - Bush muhly (*Muhlenhergia porteri*) and Three-awn (*Aristida spp.*)
- Shrubs 55-75% Composition
 - Key Species
 - Creosote (*Larrea tridentata*)
 - Other Species (lesser amounts)
 - Whitethorn acacia (*Acacia constricta*) and Honey mesquite (*Prosopis glandulosa*) Torr. var. *torreyana*,
 - Half Shrubs
 - Tarbush (*Flourensia cernua*) and Desert zinnia (*Zinnia acerosa*).

Discussion:

The Desired Plant Community (DPC) objectives are specific to each ecological site. This data was analyzed along with information from the NRCS Ecological Site Descriptions and reference sheets (when available) to estimate the potential or capability of the site to produce different kinds and amounts of vegetation so that the DPC objectives are realistic in terms of

what is possible to achieve. The DPC objectives identify the vegetation attributes, such as composition, structure, and cover that are desired for multiple use values within the allotment. These include establishing vegetative characteristics necessary for soil protection, providing forage and habitat for livestock, wildlife and threatened and endangered species.

Key species on this site are not only palatable species used for forage but also species that can be used for wildlife cover, soil protection and plant species that would normally be found within the ecological site. Areas where grass species are present along drainages show little use throughout the ecological site. Cattle use or presence throughout the limy fan upper portion of the allotment is not evident; there is no year round water available in this portion of the allotment.

Since monitoring on this site has only been conducted twice within a four year period it is difficult to interpret the long term trend on this allotment with the limited data. Ground cover data, which was gathered in 2002, 2006, and 2011 show little change in bare ground, litter or basal hits. Future monitoring can assist in further evaluation of this site.

The area evaluated was found to be within the Historic Climax Plant Community described in the ecological site guide for Limy Fan Ecological Site. The DPC was set to maintain this community in its current state.

Site 2. Sandy Loam Upland 12 S 0679246 UTM 3562955

- Standard 1. Upland sites is progressing towards meeting standard

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

Rationale:

On June 4, 2010, a Rangeland Health Evaluation was completed on the allotment. Soil and site stability based on the indicators was given a “None-Slight” rating overall due to the presence of some rills and gullies. It was noted that the edges of old rills and gullies were rounding off and herbaceous vegetation was becoming established in and along them. None were actively eroding even though soil on this site is susceptible to erosion. Hydrologic Function was functioning at expected levels, although there has been a decrease in infiltration rates and an increase in runoff due a reduction in grasses and an increase in shrubby species. Biotic integrity was rated at “Slight to Moderate” due to a shift in the functional/structural groups from perennial grasses to a shrub-dominated community.

- Standard 2 Riparian-Wetland Sites is not applicable as there are no riparian areas on the Vanar allotment

Objective: Maintain or improve riparian/wetland areas to facilitate proper functioning condition.

Rationale:

A portion of the San Simon River runs through the west side of the Vanar allotment. This area of the river only runs during times of high flows associated with rain events. A field survey was performed on April 26, 2012, and no areas of running water, saturated soils, or obligate riparian species were found within the channel. The BLM defines a riparian area as a form of wetland transition between permanently saturated wetlands and upland areas. These areas exhibit vegetation or physical characteristics reflective of permanent surface or subsurface water influence. Lands along, adjacent to, or contiguous with perennially and intermittently flowing rivers and streams, glacial potholes, and the shores of lakes and reservoirs with stable water levels are typical riparian areas. Excluded are such sites as ephemeral streams or washes that do not exhibit the presence of vegetation dependent upon free water in the soil (Technical Reference 1737-9). There is no riparian habitat within the Vanar allotment based on these criteria.

- Standard 3 is progressing toward meeting standard

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

Site Objective:

- Shrubs 10-18% Canopy
 - Key Species
 - Honey Mesquite (*Prosopis torreyana*), Four-wing saltbush (*Atriplex canescens*)
 - Other Species (lesser amounts)
 - Creosote (*Larrea tridentate*), Tarbush (*Flourensia cernua*), Wolfberry (*Lycium spp.*), and Littleleaf ratany (*Krameria erecta*)
- Perennial Grass Species 2-5% Composition
 - Key Species
 - Tobosa (*Plueraphis mutica*), Sacaton (*Sporobolus airoides*), and Plains bristlegrass (*Setaria vulpiseta*)

Discussion:

The functional/structural groups showed a slight to moderate departure from the NRCS ecological site guide on this site. Using the Ecological site guide 41-2 Sandy Loam

Upland there has been a reduction of perennial grass species on this site. Shrub canopy DPC was set by calculating shrub numbers from Google Earth on a one acre plot.

When comparing the Upland Health indicators with the ecological site guide state and transition model, the mesquite and annual community is the current state that exists at this site. This state occurs where mesquite and other shrubs dominate the plant community and native and non-native annuals dominate the herbaceous layer of the plant community. Native perennial grasses and forbs have been removed from the plant community.

To increase perennial grass species, repeated fires can be used to reduce the dominance of shrubs allowing more expression of perennial grasses. This would mimic natural events that limited shrubs historically. Due to a number of factors, including the proximity to human structures and limited amount of fine fuels necessary to care a fire is not an appropriate tool on the Vanar Allotment. Other methods are labor intensive and cost prohibitive which include seeding, herbicide treatment, and possibly ripping (Ecological Site Guide). Some of these methods to control shrubs and increase perennial grasses were tested by BLM in the 1960s and 1970s. These methods were initially promising, but failed to result in any lasting benefit. Drought conditions in the 1970s resulted in mortality of much of the seeded grasses and the areas have been re-invaded by shrubs. Through this evaluation the Bureau knows of no effective or practical method that can be used on the Vanar allotment to reduce shrub dominance. This limitation was taken into consideration in setting the DFC for the sandy loam ecological site..

Past attempts to reduce surface soil loss in the San Simon Valley's, various agencies of the federal government have constructed an extensive system of earthen dikes, wing dams, and rock-walled barriers throughout the valley. The current DPC that has been established for this ecological site is based on proper stocking rate and herd management. When reviewing the monitoring data compared to rainfall data it seems in years of average rainfall we are see static trend in vegetation and would expect to see more abundant and productive perennial grasses and forbs with above average rainfall.

7.0 Recommendations

Standards are meeting or making progress towards meeting standards under current livestock management and stocking rates. No causal factors are attributed to current livestock grazing. Continued progress towards meetings standards will require long periods of time because of the ecological sites which include certain soil types, limited amount of precipitation in this area and historical environmental process that have occurred throughout this valley. Applying drought strategy during below average rainfall years will help maintain current condition. In above average rainfall years we can expect slow gains towards meeting standards. Currently ecological processes are showing signs of repair to areas of historic erosion and soil loss.

8.0 Consultation

Permittee(s), interested public, state agencies, and other federal agencies were initiated by a letter on February 25, 2009 with a public meeting invitation on March 25, 2009. On August 3, 2009 the Standard and Guidelines evaluations were sent to the interested parties and comments were received from Western Watersheds Projects. Evaluations were sent out again for comments on June 12, 2012. Comments were received from Western Watersheds Project.

Section 7 Consultation occurred on the Gila District Livestock Grazing Program Biological Opinion (BO) for the Safford/Tucson Field Offices' Livestock Grazing Program, Southeastern Arizona (22410-2006-F-0414). Prepared By/Staff Review:

Tim Goodman, Wildlife Biologist
Deb Morris, Recreation/Wilderness Specialist
Dan McGrew, Archaeologist
Gwen Dominguez, Rangeland Management Specialist
Bill Wells, Hydrologist

9.0 Selected Management Action

The recommended permitted livestock use will allow for continued achievement and significant progress towards achievement of Land Health Standards. The following recommendations consider the principal purpose of protecting land health objectives on the Vanar Allotment.

Permit: Mandatory Term and Conditions

Allotment	Livestock number	Kind	Grazing Period		%PL	Type Use	AUMS
			Begin	End			
51380	40	Cattle	03/01	2/28	90	Active	432

1. 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.
2. The BLM is in the process of implementing the standards for rangeland health and guidelines for grazing management. This permit is subject to future modification as necessary to achieve compliance with the standards and guidelines (43 CFR 4180).
3. Permittees are required to maintain all range projects for which they have maintenance responsibilities.

4. 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.
5. Salt and/or mineral blocks shall not be placed within one quarter (1/4) mile of water sources, springs, streams, and riparian habitats.
6. All troughs will be outfitted with wildlife escape structures to provide a means of escape for animals that fall in while attempting to drink or bathe.
9. This permit is subject to all terms and conditions found on the back side of the permit.
10. 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.

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

Date

APPENDIX A: Vegetation Monitoring Data

Site History - Frequency

Site Class: BLM || Gila || Safford || Vanar (5138) || Vanar

Site ID: V-1

% Plant Frequency											
											Quadrat Size: 40x40 cm
Species	3/30/06	1/6/11									
Woody Species											
Acacia constricta-canopy	2	4									
Atriplex canescens-canopy	1										
Lycium pallidum-canopy	1	1									
Grasses - Perennial											
Muhlenbergia porteri	1										
Pleuraphis mutica	74	87									
Sporobolus airoides	26	30									
Forbs - Perennial/Biennial											
Hoffmannseggia glauca	3										
Sphaeralcea	1										
Annuals											
Annual forb(s)	4	1									
Annual grass(es)	89	27									
Unclassified											
Prosopis	6	6									
Prosopis-canopy	6	7									
Solanum elaeagnifolium	1										

% Plant Frequency											
											Quadrat Size: 10x10 cm
Species	3/30/06	1/6/11									
Grasses - Perennial											
Pleuraphis mutica		29									

Site History - Ground Cover

Site Class: BLM || Gila || Safford || Vanar (5138) || Vanar

Site ID: V-1

% Ground Cover											
Category	3/30/06	1/6/11									
Ground Cover											
Litter	72	80									
Live Basal Veg.	13	20									
Bare Ground	16										

Species Frequency - 40x40 cm Quadrat							Dry-Weight Composition				
Species	Symbol	# Hits				% Frequency	# Hits				% Comp.
		1	Transect 2	3	4		Total	1	Rank 2	3	
Woody Species											
Acacia constricta-canopy	ACCO2			3	1	4					
Acacia constricta	ACCO2							4		4	1
Lycium pallidum-canopy	LYPA	1				1					
Lycium pallidum	LYPA							1		1	1
Grasses - Perennial											
Pleuraphis mutica	PLMU3	24	23	19	21	87					
Sporobolus airoides	SPAI	4	10	6	10	30					
Annuals											
Annual forb(s)	AAFF		1			1					
Annual grass(es)	AAGG	7	2	9	9	27					
Unclassified											
Prosopis	PROSO		1	1	4	6		3	3	13	4
Prosopis-canopy	PROSO	2		3	2	7					

Site Class: BLM || Gila || Safford || Vanar (5138) || Vanar

Site ID: Van-04

% Ground Cover										
Category	3/6/06	1/14/11								
Ground Cover										
Bare Ground	31	46								
Gravel (1/4" - 3")	26	12								
Litter	39	41								
Live Basal Veg.	5	2								

Site History - Frequency

Site Class: BLM || Gila || Safford || Vanar (5138) || Vanar

Site ID: Van-04

% Plant Frequency											Quadrat Size: 40x40 cm	
Species	3/6/06	1/14/11										
Woody Species												
Atriplex canescens	5	7										
Atriplex canescens-canopy	9	11										
Flourensia cernua-canopy		1										
Gutierrezia sarothrae	9	1										
Gutierrezia sarothrae-canopy	6	1										
Larrea tridentata-canopy		1										
Lycium pallidum-canopy		2										
Forbs - Perennial/Biennial												
Perennial forb(s)	1	1										
Annuals												
Annual forb(s)	52	23										
Annual grass(es)		1										
Unclassified												
Condalia	1											
Condalia-canopy	3											
Krameria		17										
Prosopis	12	12										
Prosopis-canopy	20	28										
Solanum elaeagnifolium		1										

Species Frequency - 40x40 cm Quadrat							Dry-Weight Composition					
Species	Symbol	# Hits				Total	% Frequency	# Hits			Wtd. Total	% Comp.
		1	2	3	4			1	Rank 2	3		
Woody Species												
Atriplex canescens	ATCA2	4	4	4	1	13	7	26	24	19	249	25
Atriplex canescens-canopy	ATCA2	5	6	4	7	22	11					
Flourensia cernua-canopy	FLCE		1			1	T					
Flourensia cernua	FLCE								1	1	3	1
Gutierrezia sarothrae	GUSA2		2			2	1	3	3	2	29	3
Gutierrezia sarothrae-canopy	GUSA2		1			1	T					
Larrea tridentata-canopy	LATR2				1	1	T					
Lycium pallidum-canopy	LYPA		1	3		4	2					
Lycium pallidum	LYPA							2	3	4	24	2
Forbs - Perennial/Biennial												
Perennial forb(s)	PPFF		1			1	T	1	1	1	10	1
Annuals												
Annual forb(s)	AAFF	16	15	8	7	46	23					
Annual grass(es)	AAGG	1				1	T					
Unclassified												
Krameria	KRAME	10	10	9	4	33	17	21	16	18	197	20
Prosopis	PROSO	7	3	10	3	23	12	47	52	54	487	49
Prosopis-canopy	PROSO	17	12	12	14	55	28					
Solanum elaeagnifolium	SOEL	1				1	T			1	1	1

Site History - Frequency

Site Class: BLM || Gila || Safford || Vanar (5138) || Vanar

Site ID: Van-05

% Plant Frequency		Quadrat Size: 40x40 cm									
Species	3/30/05	1/14/11									
Woody Species											
Flourensia cernua	1	1									
Flourensia cernua-canopy		1									
Gutierrezia sarothrae-canopy	2										
Gutierrezia sarothrae		1									
Larrea tridentata	1	1									
Larrea tridentata-canopy	5	6									
Grasses - Perennial											
Pleuraphis mutica	4	4									
Annuals											
Annual forb(s)	88	55									
Annual grass(es)	12	76									
Unclassified											
Prosopis	1	1									
Zinnia acerosa-canopy	1										
Zinnia acerosa		3									

Site History - Ground Cover

Site Class: BLM || Gila || Safford || Vanar (5138) || Vanar

Site ID: Van-05

% Ground Cover											
Category	3/30/06	1/14/11									
Ground Cover											
Bare Ground	70	53									
Gravel (1/4" - 3")	18	27									
Litter	12	18									
Rock > 3"		2									

Species Frequency - 40x40 cm Quadrat					Dry-Weight Composition					
Species	Symbol	# Hits			% Frequency	# Hits			Wtd. Total	% Comp.
		Transect 1	2	Total		Rank 1	2	3		
Woody Species										
Flourensia cernua	FLCE	1		1	1	2	2	2	20	13
Flourensia cernua-canopy	FLCE		1	1	1					
Gutierrezia sarothrae	GUSA2		1	1	1					
Larrea tridentata	LATR2		1	1	1	7	7	7	70	47
Larrea tridentata-canopy	LATR2	2	4	6	6					
Grasses - Perennial										
Pleuraphis mutica	PLMU3	1	3	4	4	3	3	3	30	20
Annuals										
Annual forb(s)	AAFF	22	33	55	55					
Annual grass(es)	AAGG	41	35	76	76					
Unclassified										
Prosopis	PROSO		1	1	1					
Zinnia acerosa	ZIAC	1	2	3	3	3	3	3	30	20

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