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Table of Contents

1.0 Introduction.....	6
1.1 Purpose and Need.....	6
1.2 Decision to be Made	7
2.0 Scoping and Identification of Issues:	7
3.0 Description of Alternatives, Including Proposed Action.....	7
3.1 Alternative 1 - Proposed Action to Renew Grazing Lease	7
3.2 Alternative 2 - No Grazing:.....	9
3.3 Alternative 3- Limit period of use:	10
3.4 Alternative 4– No Action.....	10
3.5 Alternatives Considered but Eliminated from Detailed Analysis:	11
3.5.1 Increase the Stocking rate on the allotment.	11
3.5.2 Adaptive Management Alternative	11
4.0 Conformance.....	11
4.1 Relationships to Statutes, Regulations, or Other Plans	11
5.0 Affected Environment and Environmental Impacts.....	11
5.1 Cultural Resources.....	12
5.1.1 Affected Environment.....	12
5.1.2 Impacts of Alternative 1 - Proposed Action.....	13
5.1.3 Impacts of Alternative 2 - No Grazing.....	13
5.1.4 Impacts of Alternative 3- Limit period of use	13
5.1.5 Impacts of Alternative 4- No Action	13
5.2 Federally Listed, State listed, and BLM Sensitive species	13
5.2.1 Affected Environment.....	13
5.2.2 Impacts from Alternative 1 - Proposed Action.....	13
5.2.3 Impacts of Alternative 2- No Grazing	15
5.2.4 Impacts of Alternative 3- Limit period of use	16
5.2.5 Impacts of Alternative 4- No Action	16
5.3 Migratory Birds.....	16
5.3.1 Affected Environment.....	16
5.3.2 Impacts of Alternative 1 - Proposed Action.....	17

5.3.3 Impacts of Alternative 2 – No Grazing	17
5.3.4 Impacts of Alternative 3 – Limit period of use	17
5.3.5 Impacts of Alternative 4- No Action	17
5.4 Wildlife.....	17
5.4.1 Affected Environment.....	17
5.4.2 Impacts of Alternative 1 - Proposed Action.....	18
5.4.3 Impacts of Alternative 2 – No Grazing	19
5.4.4 Impacts of Alternative 3 – Limit period of use	19
5.4.5 Impacts of Alternative 4- No Action	19
5.5 Riparian Vegetation	19
5.5.1 Affected Environment.....	19
5.5.2 Impacts of Alternative 1 - Proposed Action.....	19
5.5.3 Impacts of Alternative 2- No Grazing	20
5.5.4 Impacts of Alternative 3- Limit period of use	20
5.5.5 Impacts of Alternative 4- No Action	20
5.6 Land Health Standards	20
5.6.1 Affected Environment.....	20
5.6.2 Impacts of Alternative 1 - Proposed Action.....	21
5.6.3 Impacts of Alternative 2 – No Grazing	21
5.6.4 Impacts of Alternative 3 – Limit period of use	21
5.6.5 Impacts of Alternative 4- No Action	21
5.7 Vegetation	21
5.7.1 Affected Environment.....	21
5.7.2 Impacts of Alternative 1 - Proposed Action.....	22
5.7.3 Impacts of Alternative 2 – No Grazing	22
5.7.4 Impacts of Alternative 3 – Limit period of use	22
5.7.5 Impacts of Alternative 4- No Action	23
5.8 Soils.....	23
5.8.1 Affected Environment.....	23
5.8.2 Impacts of Alternative 1 - Proposed Action.....	23
5.8.3 Impacts of Alternative 2 – No Grazing	24

5.8.4 Impacts of Alternative 3 – Limit period of use	24
5.8.5 Impacts of Alternative 4- No Action	24
5.9 Grazing Program	24
5.9.1 Affected Environment.....	24
5.9.2 Impacts of Alternative 1 - Proposed Action.....	24
5.9.3 Impacts of Alternative 2 – No Grazing	24
5.9.4 Impacts of Alternative 3 – Limit period of use	24
5.9.5 Impacts of Alternative 4- No Action	24
5.10 Invasive and Non-native Species.....	24
5.10.1 Affected Environment	24
5.10.2 Impacts of Alternative 1 - Proposed Action.....	25
5.10.3 Impacts of Alternative 2- No Grazing.....	25
5.10.4 Impacts of Alternative 3- Limit period of use	25
5.10.5 Impacts of Alternative 4- No Action	25
6.0 Cumulative Effects.....	25
6.1 Geographic Scope of the Cumulative Effects Analysis	25
6.2 Timeframe of the Cumulative Effects Analysis	26
6.3 Past Actions	26
6.4 Present Actions	27
6.5 Reasonably Foreseeable Future Actions.....	27
6.6 Issues Analyzed in Detail	28
6.6.1 How would livestock grazing affect habitat for special status species?	28
6.6.2 How would livestock grazing affect nesting cover and food sources for migratory birds?.....	29
6.6.3 How would livestock grazing affect ground cover and soil erosion at any wetlands or riparian areas?.....	30
6.6.4 What is the result to watershed health?.....	32
6.6.5 How would livestock grazing affect species composition and cover of upland vegetation?.....	32
6.6.6 How would livestock grazing affect invasive and non-native species?.....	33
6.6.7 How would livestock grazing affect wildlife distribution?	34
6.6.8 How does livestock grazing affect Land Health Standards?	35

7.0. Consultation, Cooperation, and Coordination:..... 36

8.0 Persons/Agencies Consulted: 37

9.0 References:..... 37

10.0 Appendices:..... 42

 Appendix 10.1 Map..... 42

 Appendix 10.2 Conservation measures for selected species from 2012 Gila District Grazing Program biological opinion. 43

 Appendix 10.3 BLM Sensitive Species with potential to occur on the Susnow Allotment.. 46

 Appendix 10.4 Bird Species of Conservation Concern within the Sierra Madre Occidental region (BCR 34). 47

 Appendix 10.5 Arizona Standards for Rangeland Health and Guidelines for Grazing Administration..... 48

1.0 Introduction

This Environmental Assessment (EA) analyzes the proposed action and alternatives for lease renewal and associated range improvements for the Susnow allotment. The Susnow allotment is located near the city of Bisbee off of Arizona Highway 80 (Appendix 10.1 Map). Susnow has 118 acres of BLM public lands along with 5 acres of private lands within its boundaries. There are no State Lands within the Susnow allotment. It currently only has a single pasture and has a capacity of 24 Animal Units Months (AUMs). The water source for livestock on this allotment is located on the 5 acres of private land. A Rangeland Health Evaluation was completed on the allotment on May 21st 2008, and a second evaluation was conducted on December 7th 2011. This EA will incorporate the data analysis from the Rangeland Health Evaluations and reference monitoring data gathered by the University of Arizona Cooperative Extension in July 2009.

The BLM is proposing to fully process the term grazing lease on the Susnow Allotment in accordance with all applicable laws, regulations, and policies. Susnow Grazing Lease No. 52400 was renewed on March 1, 2004 with the same terms and conditions pursuant to Section 416 of Public Law 111-88, pending compliance with applicable laws and regulations. The proposed fully processed lease would be in effect for a period of ten years from the effective date. Compliance with all applicable laws and regulations includes consultation, coordination, and cooperation with affected individuals, interested parties, States, and Indian Tribes; completion of the applicable level of National Environmental Policy Act (NEPA) review; consultation with the United States Fish and Wildlife Service (USFWS) under Section 7 of the Endangered Species Act; and ensuring that allotments are achieving or making significant progress toward achievement of land health standards.

1.1 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 (Appendix 10.5).

The need for this action is established by the Taylor Grazing Act (TGA), the Federal Land Policy and Management Act (FLPMA), and the Safford District Resource Management Plan (RMP) approved January 1992, which require that the BLM respond to applications to fully process and renew leases to graze livestock on public land. In detail, the analysis of the actions identified in the applications for grazing lease 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 10.5). Land Health for Rangelands should be achieving or making significant progress towards achieving the standards 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. Rangeland health assessments and evaluation reports completed for the Susnow Allotment identified that all standards are being met.

- The Safford District Resource Management Plan (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 Tucson Field Office. The Safford District Resource Management Plan (RMP) allocated public lands within the Susnow 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 leases to qualified applicants are provided for by the Taylor Grazing Act (TGA) and the Federal Land Policy and Management Act (FLPMA).

1.2 Decision to be Made

The Tucson 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) will 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 lease and if renewed, which management actions, mitigation measures, and monitoring requirements will be prescribed for the Susnow allotment to ensure management objectives and Arizona Standards for Rangeland Health are achieved.

2.0 Scoping and Identification of Issues:

Identification of issues for this assessment was accomplished by considering the resources that could be affected by the lease renewal. These issues were identified by the interdisciplinary team, lessee and interested publics during scoping meetings and field visits. The issues identified through those meetings and field visits were:

What are the effects of renewing the grazing lease on the Susnow allotment on:

1. Cultural resources?
2. Federally listed or sensitive species?
3. Migratory birds?
4. Habitat for local wildlife?
5. Riparian health of the small xero-riparian area on allotment?
6. Land health standards?
7. Upland vegetation?
8. Soils?
9. The lessee use of allotment?
10. Spread of invasive and non-native species?

3.0 Description of Alternatives, Including Proposed Action

3.1 Alternative 1 - Proposed Action to Renew Grazing Lease

The Proposed Action consists of the renewal of the grazing lease for the Susnow allotment for a period of 10 years with the following Terms and Conditions added to the standard BLM Terms and Conditions for grazing leases:

Grazing Plan: Yearlong

Table 1

Allotment Number	Allotment Name	Pasture	Number of Livestock	Kind	Begin	End	% Public Land	Type of Use	AUMs
52400	Susnow	Upland	2	CATTLE	3/1	2/28 (year-long)	100	ACTIVE	24

- Actual use information will be submitted within 15 days of the end of the grazing year in accordance with 43 CFR 4130.3-2(d). Actual use reports will identify the amount of livestock use and period of use for each water source/pasture.
- Lessee shall not subject jaguars or ocelots to any predator control activities .
- Agave will be surveyed for and avoided during construction of range improvement projects.
- Construction of range improvement projects will not occur during the nesting season of migratory birds.
- All new fencelines will be constructed to BLM wildlife friendly fence standards.
- All watering troughs will be equipped with wildlife escape ramps.
- If in connection with allotment operations under this authorization, any human remains, funerary objects, sacred objects or objects of cultural patrimony as defined in the Native American Graves Protection and Repatriation Act (P.L. 101-601; 104 Stat. 3048; 25 U.S.C. 3001) are discovered, the lessee shall stop operations in the immediate area of the discovery, protect the remains and objects, and immediately notify the Authorized Officer of the discovery. The lessee shall continue to protect the immediate area of the discovery until notified by the Authorized Officer that operations may resume.

Administrative Actions

- BLM will notify the grazing lease annually during billing of the potential presence of jaguar and ocelot on the allotment, the status of the jaguar and ocelot, and that take of jaguar or ocelot, including harm and harassment, is prohibited under the Endangered Species Act and could result in prosecution.

- The BLM in consultation, coordination, and cooperation with the lessee, other agencies, and interested publics will continue to implement the following monitoring plan to measure the attainment of resource management objectives:
- Desired resource conditions on the uplands: Maintain cover and composition of key forage species as described in the evaluation.
- Monitor Key area cover, frequency, and composition. (Interagency Technical Reference, TR1730-002 1999. Sampling Vegetation Attributes,).

Rationale: It is expected that the proposed level of use would allow for maintenance and recruitment of key forage species; however if monitoring indicates that composition, cover, or frequency of these species is decreasing then use limits, and or the season of use would be adjusted.

- Actual Use/Utilization data would be collected over a period of years along with trend data to determine if changes in management practices are necessary to meet resource condition objectives.
- Desired resource conditions on xero-riparian area: Maintain key attributes of xero-riparian area.
- Perform assessment on xero-riparian area considering hydrology, vegetation, and erosion/deposition attributes and processes. Assessment will be done every ten years.
- 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.”

3.2 Alternative 2 - No Grazing:

This alternative would eliminate livestock grazing on the Susnow allotment.

BLM would cancel the leases for the Susnow allotment, and livestock grazing would not be authorized. BLM would initiate the process in accordance with 43 CFR parts 4100, and amend

the Safford RMP. BLM lands would be fenced from the private lands under this alternative. Stipulations on fence construction would include the following:

- Avoidance of agave during fence construction.
- Avoidance of fence construction and brushing during the nesting season of migratory birds.
- If in connection with fence construction under this authorization, any human remains, funerary objects, sacred objects or objects of cultural patrimony as defined in the Native American Graves Protection and Repatriation Act (P.L. 101-601; 104 Stat. 3048; 25 U.S.C. 3001) are discovered, the lessee shall stop operations in the immediate area of the discovery, protect the remains and objects, and immediately notify the Authorized Officer of the discovery. The lessee shall continue to protect the immediate area of the discovery until notified by the Authorized Officer that operations may resume.
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3.3 Alternative 3- Limit period of use:

Under this alternative, BLM would change the period of use from yearlong to six months in the winter. In addition to the standard terms and conditions the following would be applied:

- Period of use would be changed from two cattle yearlong (24 AUMs) to four cattle half year (24 AUMs from September 1- March 1).
- Actual use information will be submitted within 15 days of the end of the grazing year in accordance with 43 CFR 4130.3-2(d). Actual use reports will identify the amount of livestock use and period of use for each water source/pasture.
- Lessee shall not subject jaguars or ocelots to any predator control activities.
- Agave will be avoided during construction of range improvement projects.
- Construction of range improvement projects will not occur during the nesting season of birds.
- All new fencelines will be constructed to BLM wildlife friendly fence standards.
- All watering troughs will be equipped with wildlife escape ramps.
- If in connection with allotment operations under this authorization, any human remains, funerary objects, sacred objects or objects of cultural patrimony as defined in the Native American Graves Protection and Repatriation Act (P.L. 101-601; 104 Stat. 3048; 25 U.S.C. 3001) are discovered, the lessee shall stop operations in the immediate area of the discovery, protect the remains and objects, and immediately notify the Authorized Officer of the discovery. The lessee shall continue to protect the immediate area of the discovery until notified by the Authorized Officer that operations may resume.

3.4 Alternative 4- No Action

The No Action Alternative is described as the renewal of the existing lease with the same terms and conditions after expiration of the existing lease. The current expiration date is February 28, 2014.

3.5 Alternatives Considered but Eliminated from Detailed Analysis:

3.5.1 Increase the Stocking rate on the allotment.

An alternative was considered to increase the stocking rate on this allotment. However, it was determined that an increase in the stocking rate on this allotment would not be justifiable. The terrain and vegetation would not allow for an increase in use. An increase in AUMs would exceed carrying capacity and have negative effects on the land.

3.5.2 Adaptive Management Alternative

An alternative was considered to implement an adaptive management approach on the Susnow allotment. Under an adaptive management approach, livestock numbers would be adjusted annually based on condition and trend of resources as determined from monitoring data. Management and monitoring activities are typically quite intensive under an adaptive management approach. However, the Susnow allotment is only a small proportion of public land area and a single pasture, limiting options for flexible management. These factors have contributed to the Susnow allotment being given a custodial (C) management category. This category is applied to areas where the effects of livestock use on the public land resources are anticipated to be minimal and which have acceptable range condition with a stable or improving trend. BLM management actions are limited to licensing livestock use based on the AUMs available on the public lands on "C" allotments. The intensive management and monitoring required for adaptive management would therefore not be feasible or justified on this allotment.

4.0 Conformance

4.1 Relationships to Statutes, Regulations, or Other Plans

The proposed action is in conformance with the Safford District Resource Management Plan (RMP) approved January 1992 and the Statewide Land Use Plan Amendment for Implementation of Arizona's Standards for Rangeland Health and Guidelines for Grazing Administration (AS&Gs) (BLM 1997).

Implementation level decisions from the Eastern Arizona Grazing Environmental Impact Statement (BLM 1986) were carried forward into the Safford District RMP (1991).

The Biological Opinion on the Gila District Livestock Grazing Program (22410-2006-F-0414) dated May 21, 2012.

The rangeland management program is managed under the provisions of the Taylor Grazing Act of 1934 as amended, the Federal Land Policy and Management Act of 1976 as amended, the Public Rangelands Improvement Act of 1978, and the National Environmental Policy Act (NEPA) of 1969. These laws along with the grazing regulations under 43 CFR 4100 and associated BLM Manual policy authorize and govern administration of livestock grazing on public lands.

5.0 Affected Environment and Environmental Impacts

This section describes the affected environment and the expected impacts of the alternatives. Resources that have been identified by the BLM Tucson Field Office interdisciplinary NEPA team as present and potentially affected are discussed further below. Those resources that are

not affected (as identified by the BLM interdisciplinary team), and therefore will not be discussed in detail include air quality, Areas of Critical Environmental Concern, environmental justice, flood plains, prime and unique farmland, hazardous or solid waste, Native American religious concerns, Wild and Scenic Rivers, Wilderness Areas and wilderness character, national energy policy, recreation, lands/realty, access/transportation, visual resources, mineral resources, water quality and water rights.

5.1 Cultural Resources

5.1.1 Affected Environment

Issuance of the lease 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 Eastern Arizona Grazing Environmental Impact Statement (1986) and the Safford Resource Management Plan (1991). Indian tribes were consulted at the beginning of the lease renewal process. There were no areas of Native American concern, Traditional Cultural Properties (TCP), or Sacred Sites identified during consultations.

Allotment case files, AMP files, range project files, Water Source Inventory files, and Cultural Resource files were reviewed for any records of cultural resourcea on the allotment. Allotment range improvement maps were used to determine any areas of livestock congregation and whether these areas have been previously inventoried for cultural resources. Because no historic properties were identified on the allotment including in areas of livestock congregation, no mitigation is recommended as a BLM responsibility or as a term or condition of the lease, 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 will 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 lessee shall stop operations in the immediate area of the discovery, protect the remains and objects, and immediately notify the Authorized Officer of the discovery. The lessee shall continue to protect the immediate area of the discovery until notified by the Authorized Officer that operations may resume.

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

5.1.2 Impacts of Alternative 1 - Proposed Action

Cultural resources not present. No range improvements are mentioned in files. No impacts to cultural resources.

5.1.3 Impacts of Alternative 2 - No Grazing

Cultural resources not present. No impacts to cultural resources.

5.1.4 Impacts of Alternative 3- Limit period of use

Cultural resources not present. No impacts to cultural resources.

5.1.5 Impacts of Alternative 4- No Action

The continuation of the existing terms and conditions under the current lease (no cultural resource modifications have been made to the proposed action to renew the grazing lease), would likely have no livestock-related impacts to known or unknown cultural resources.

5.2 Federally Listed, State listed, and BLM Sensitive species

5.2.1 Affected Environment

Conservation measures for Federally listed Threatened and Endangered species from the U.S. Fish and Wildlife Service's (FWS) Biological Opinion on the Gila District Livestock Grazing Program (BO, 2012) include: "1) Consider effects to listed species and designated critical habitat during grazing allotment evaluations. Realistic and achievable habitat elements that benefit listed species will be included when determining desired resource condition; and 2) Review, for every proposed project, the FWS county list and conduct appropriate surveys and clearances for threatened and endangered species (TES)."

The Cochise County list of TES is given in Appendix 10.3. The occurrence of any listed or proposed species has not been documented. There is no designated critical habitat. However, the Susnow Allotment does contain potential habitat for jaguar, ocelot, and lesser long-nosed bat, and the conservation measures from the BO for livestock grazing within the Gila District is given for each of these species in Appendix 10.2. In addition to these three species, the U.S. Fish and Wildlife Service determined that listing of the Bartram stonecrop may be warranted (August 8, 2012). For the purposes of this analysis the Bartram stonecrop is treated as a threatened or endangered species.

5.2.2 Impacts from Alternative 1 - Proposed Action

Federally Listed species

Jaguar and Ocelot

This grazing lease renewal for the Susnow Allotment is managed to meet the 1997 Arizona Standards and Guidelines, and does not include authorization for any predator-control activities, clearing of habitat, destruction of riparian areas, or fragmentation of habitat. Stipulations have been added in the Terms and Conditions of the lease renewal to require the grazing lessee to not

subject jaguars or ocelots to any predator control activities, and to inform the lessee of the Susnow Allotment of the potential occurrence of jaguars or ocelots in their allotment, 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. Therefore, no impacts to jaguar and ocelot would occur under the proposed action.

Lesser long-nosed bat

All bolted agave stalks observed during the rangeland health evaluations in May 2008, upland monitoring in July 2009, and rangeland health evaluation in December 2011 appeared to have been successful in flowering, therefore, it appears that regeneration and maintenance of lesser long-nosed bat food plants is occurring on the allotment under current grazing management. There has been no construction or maintenance of structures or improvements on the allotment that could affect food plants or provide access to potential roosts. In addition, this grazing lease renewal for the Susnow Allotment does not include authorization for any road construction, clearing of habitat, destruction of riparian areas, or fragmentation of habitat and is, therefore, in compliance with the BO.

Bartram stonecrop

Bartram stonecrop has been observed in the Mule Mountains near the Susnow allotment. The allotment has not been inventoried for the presence of the stonecrop. If stonecrop is present on the allotment cattle potentially could trample individual plants if cattle access steep gravelly slopes where it occurs. Habitat destruction caused by livestock grazing poses a rangewide threat to the survival of Bartram stonecrop. In addition to habitat destruction resulting from grazing, individual plants can be trampled by cattle (Arizona Game and Fish Department 2001). The species is known at 12 locations in Arizona, including the Baboquivari, Chiricahua, Dagoon, Mule, Patagonia, Rincon, Santa Rita, and Tumacacori mountains in Cochise, Pima, and Santa Cruz Counties. It is also found in one location in Mexico. Because there are so few populations of this species, and because populations consist of few individuals, grazing poses a threat to the stonecrop. Most, if not all, populations of this species occur in areas of cattle grazing (Phillips et al. 1982).

BLM Sensitive Species

Golden Eagle Impacts of livestock grazing on golden eagle are probably primarily through effects to prey cover and food. Golden eagles prey primarily on mammals, although birds, reptiles, fish, and carrion also are eaten (Bent 1961, Brown 1992, Olendorff 1976). The black-tailed jackrabbit (*Lepus californicus*) is a key prey species for golden eagle in the southwest (Boeker and Ray 1971), and eagle reproductive rates are known to fluctuate with jackrabbit population cycles (Kochert 1980, Smith and Murphy 1971). The Susnow Allotment does not contain potential jackrabbit habitat, however, cottontail and other small mammals do likely occur on the allotment. Livestock grazing on the allotment may impact the amount of cover and food available for these small mammals, and in turn affect the amount and/or kind of prey available to golden eagle. However the allotment represents only a small portion of the range of a golden eagle. Territories averaged 22.8 km² (5634 acres) and ranged from 1.9 to 83.3 km² (469 to 20,583 acres.) so they were quite variable in size. (DeLong, J. P. 2004.)

Special Status Bats

Increasing vegetative cover may affect species, richness, abundance and/or availability of prey for insectivorous bats. The Susnow Allotment may also contain cliffs, crevices, and caves as roosting sites for insectivorous bats, and habitat for their prey. Effects of livestock grazing to bats are probably primarily through effects to insect diversity and abundance, but roost sites are unlikely to be impacted by livestock due to the inaccessibility of the terrain. Livestock grazing may impact plant-eating insects through effects to the structure and species assemblage of vegetation; however, not all species react in similar ways and there may be winners and losers from different grazing regimes (Littlewood et al. 2011). DeBano (2006) found overall abundance of insects was lower on grazed grasslands, and certain insect orders appeared to be negatively affected by livestock grazing. This study found that beetles were less rich, flies were less diverse, and Hymenoptera were less rich and diverse on grazed sites. Species composition of vegetation-associated insect communities may also differ and be correlated with percent vegetation cover and number of shrubs (DeBano 2006). Other studies have found that intense, short duration grazing by livestock during late summer resulted in reduced species richness in the grass-herb vegetation layer but had no effect on insect species richness on snakeweed or mesquite shrubs; livestock grazing in winter had no effect on insect species richness on any of the vegetation sampled (Forbes et al. 2005). Thus, livestock grazing on the Susnow Allotment may affect certain insect species more than others, and this in turn may affect bat species differently.

5.2.3 Impacts of Alternative 2- No Grazing

Federally Listed species

Jaguar and Ocelot

The no grazing alternative would result in no direct impacts from the livestock grazing program to jaguar and ocelot. BLM lands in the allotment would be fenced out. Subsequently, decreased utilization and increased cover may occur in the BLM lands on the allotment. The status of grazing on the private lands is unknown; the same level or increased use by livestock may occur on the private lands on the allotment if grazing is continued on private lands. Or alternatively, the land owner may decide to discontinue grazing on the private land. A decrease in utilization on BLM land may result in effects to the jaguar or ocelot's prey base through increased recruitment of prey as a result of improved cover and/or food resources. Improved vegetative cover may result in increased effectiveness of prey concealment. New fencing may result in additional disturbance and/or fragmentation of habitat through the use of increased human activity to construct and maintain fences (e.g. access by horseback or all-terrain vehicle, formation of vehicle tracks or trails along fencelines).

Lesser long-nosed bat

The no grazing alternative would result in no direct impacts from the livestock grazing program to lesser long-nosed bat. BLM lands in the allotment would be fenced out. New fencing may result in additional disturbance and/or fragmentation of habitat through the use of increased human activity to construct and maintain fences. However, a stipulation regarding avoidance of agave during range improvement activities (e.g. fencing) would be required.

BLM Sensitive Species

The no grazing alternative would result in indirect effects to BLM Sensitive Species such as golden eagle and bats. BLM lands in the allotment would be fenced out. Decreased utilization and increased cover would likely occur on the BLM land, which may affect BLM Sensitive Species indirectly through increases in vegetative cover, species richness, and changes in structure of plants used by prey species. New fencing may result in additional disturbance and/or fragmentation of habitat for BLM Sensitive Species and/or their prey base.

5.2.4 Impacts of Alternative 3- Limit period of use

Federally Listed species

Jaguar and ocelot

Improved vegetative cover over the allotment may result in increased effectiveness of movement and concealment for both predator and prey. Prey species, richness, abundance and/or availability may change with increased vegetative cover.

Lesser long-nosed bat

Change to winter use will ensure that cattle are not present during the time that agaves are reproducing and bolting. Livestock would not have access to utilize this lesser long-nosed bat food source.

BLM Sensitive Species

Limiting period of use for livestock grazing may affect species richness, abundance, and availability of prey species for golden eagle but the change may be negligible given the size of an eagle's home range. Territories averaged 22.8 km² (5634 acres) and ranged from 1.9 to 83.3 km² (469 to 20,583 acres.) so they were quite variable in size. (DeLong, J. P. 2004.) Increasing vegetative cover may affect species, richness, abundance and/or availability of prey for insectivorous bats.

5.2.5 Impacts of Alternative 4- No Action

Impacts are anticipated to be essentially the same as under Alternative 1.

5.3 Migratory Birds

5.3.1 Affected Environment

Per the 2010 Memorandum of Understanding (MOU, BLM WO-IB-2010-110) between the BLM and FWS, the BLM shall, at the project level, evaluate the effects of the BLM's actions on migratory birds during the NEPA process, focusing first on species of concern, priority habitats, and key risk factors (MOU VII.F). The Susnow Allotment contains land within middle elevations of the Madrean Basin and Range province, in the Sierra Madre Occidental Bird Conservation Region (BCR 34). Appendix 10.4 lists those migratory bird species of conservation concern from BCR 34.

The effects of the BLM's actions on migratory birds during the NEPA process shall be evaluated, focusing first on these species of concern listed above in their respective priority

habitats (MOU VII.F). Birds of conservation concern within BCR 34 that could occur within the habitat of the Mule Mountains and the Susnow Allotment include peregrine falcon. Peregrine falcon may use the Susnow Allotment during hunting and migration. Peregrine falcons specialize on avian prey, which would be available in the area during migration.

5.3.2 Impacts of Alternative 1 - Proposed Action

Livestock grazing impacts on birds vary with the type of livestock operation, region of the country, and other factors, with responses of individual bird species often habitat and species-specific (Bock 2002). Moderate levels of grazing may increase avian diversity at a local scale, because the habitat needs of many species will be met (Nelson et al. 1997). However, a uniform livestock management strategy may depress avian diversity because of resulting homogenous, wide-spread habitat. Livestock grazing may affect the amount of available seeds produced, or the amount of vertebrates or invertebrates available for those avian species with these diets. In addition, direct effects of livestock grazing may include trampling of nests (Jensen et al. 1990) and increased predation (Gregg et al. 1994). For the Susnow Allotment and the bird species observed there, trampling and/ or increased predation of nests may not be a serious issue because of 1) the low utilization level of nesting cover plants, and 2) the bird species observed to nest either on cliff faces, in large-sized trees, in rocks, or in cactus. It is not known how livestock grazing may affect the avian food sources on the allotment but, due to the low utilization level, the allotment likely provides adequate production and habitat for all varieties of food and prey.

5.3.3 Impacts of Alternative 2 – No Grazing

The no grazing alternative may result in decreased utilization and increased vegetative cover on BLM land. Decreased utilization would have both direct effects to nesting birds through increased cover available for nest concealment, and indirectly through a possible decrease in predation and changes in prey species, richness, relative abundance, and/or availability. New fences along BLM boundaries would require some brushing; however, a stipulation to avoid the nesting season during vegetation treatment would be required.

5.3.4 Impacts of Alternative 3 – Limit period of use

Livestock not being present on the allotment during migration/breeding season would eliminate the risk of nests being disturbed or trampled by livestock and would increase forage availability. Changing season of use to winter would provide more seed production for seed eating species and residual forage for insects, which are important to many bird and reptiles species. Riparian habitats for migratory birds could improve on public land if environment provides sufficient moisture.

5.3.5 Impacts of Alternative 4- No Action

Impacts essentially the same as under Alternative 1

5.4 Wildlife

5.4.1 Affected Environment

There are no specific objectives for wildlife listed for this allotment in the Eastern Arizona Grazing Environmental Impact Statement (EIS), or Safford District Resource Management Plan

(RMP) and EIS. In the Eastern Arizona Grazing EIS, it was expected that wildlife habitat would improve on the ten allotments with management plans, and remain static or continue along present trend on 326 allotments. Mule deer would mainly be the affected big game species and would benefit from increased forage production. Small game and nongame would also benefit from the increased forage and cover.

The objectives from the Safford District RMP included management of upland vegetation to restore and maintain plant communities for wildlife, watershed condition, and livestock.

Common wildlife species found in the area include Coues whitetail and mule deer, javelina, coyote, gray fox, skunk, cottontail rabbit, small rodents, reptiles and amphibians, Mearns' quail, mourning dove, and songbirds. The ecological site description states that the site provides excellent habitat for Coues whitetail deer and javelina, with natural water areas occurring infrequently as springs or seeps. Current conditions of boundary fences are very old but functional. Most fencing that is older than 15-20 years is not wildlife friendly.

5.4.2 Impacts of Alternative 1 - Proposed Action

Livestock grazing may impact wildlife through competition for water, food, and/or cover. Increased predation through lack of cover may also occur. Cattle may compete directly with browsers, such as mule deer, especially in the spring when new growth is limited. Heavier use on grass species near water developments and areas of terrain favorable to cattle movement may cause an increase in the proportion of forbs as these annuals invade the site. These forbs may be preferred by deer, however, mule deer may shift their habitat use in response to livestock grazing (Lott et al. 1991), and may decline when cattle are introduced (Wallace and Krausman 1987).

Bird and rodent species which forage on grass seeds as a large component of their diet may experience negative impacts if livestock grazing does not allow for enough plants to complete their life cycle and produce seed. Changes in vertical structure of vegetation can impact ground nesting birds, rodents, and reptile species by reducing cover needed for protection from weather and predators. Deer may be affected through a decrease in recruitment by loss of vertical structure within fawning areas. A reduction in cover may favor predator species that hunt by sight, and potentially improve their hunting success.

Fencing within an allotment may impact ungulate movement and even cause direct mortality. Fences, if not built to BLM specifications for wildlife compatible fencing, may promote habitat fragmentation and lead to the loss or decreased use of habitat. Fences have also been known to cause direct mortality to ungulates (Harrington and Conover 2006) and flying birds, particularly raptors (Gillihan 2000). Under BLM policy, all new fencing will be built to BLM specifications for wildlife-friendly fencing.

Livestock grazing may provide an additional food source for large predators, such as mountain lions. The ability to utilize livestock may maintain predator numbers when natural factors, such as drought and natural prey populations, may have led to predator declines, especially since predator control is not used on this allotment.

Wildlife populations may also be impacted from livestock grazing activities through human disturbance associated with access and management of range improvements (e.g. fencing) on the allotment. Vehicle access may fragment habitat, and result in accelerated rates of erosion and loss of vegetative resources. Positive experiences for recreational users for consumptive and non-consumptive wildlife use may also occur with any allotment access routes.

Ungulates may utilize those areas where provided water under a livestock grazing program. This utilization may impact the vegetative community as plant species, richness, abundance, and availability changes with grazing pressure. Smaller species, such as birds and bats, may also benefit from increased availability of water and from an increase in insects associated with the water. Mortality may occur when wildlife enter cattle troughs for water and are unable to escape (Craig and Powers 1975, Enderson 1964). Therefore, all drinking troughs should be installed with escape ramps that intercept the line of travel along the tank edge (Sherrets 1989). The requirement for wildlife escape ramps will be added as a stipulation in the lease renewal.

5.4.3 Impacts of Alternative 2 – No Grazing

The no grazing alternative may allow less competition between wildlife and livestock for water, food, and cover for the BLM lands within the allotment. Decreased plant utilization by livestock may result in more or different available plant food sources, a change in prey species, richness, relative abundance, or availability, and/or improved cover for wildlife. However, increased utilization and decreased cover may occur on the state and private land of the allotment once BLM land became fenced out (outside of BLM's authority).

5.4.4 Impacts of Alternative 3 – Limit period of use

Limiting period of use may allow less competition between wildlife and livestock for water, as more available water would be present for wildlife. However, it is unknown whether the lessee would continue to maintain watering areas with a reduction in the stocking rate. Improved vegetative cover with decreased utilization by livestock over the whole of the allotment may result in increased effectiveness of movement and concealment, and changes in species, richness, relative abundance, or availability of prey for wildlife. Any new fence construction will be wildlife friendly.

5.4.5 Impacts of Alternative 4- No Action

The continuation of the existing terms and conditions under the current lease would likely have no further impacts to wildlife than the effects from the proposed action to renew the grazing lease.

5.5 Riparian Vegetation

5.5.1 Affected Environment

There are no true riparian areas on the Susnow Allotment, although xero-riparian areas do occur within canyons and washes. However, under current BLM policy, xero-riparian areas are not evaluated under the Arizona Standard and Guidelines #2.

5.5.2 Impacts of Alternative 1 - Proposed Action

Xero-riparian vegetation would be minimally utilized by livestock allowing for maintenance and possibly improvement of the 68% frequency and 26% composition of woody species if

sufficient moisture from the environment is provided. Woody vegetation species would be able to establish and maintain their functional structure. Utilization would provide sufficient residual vegetation to protect xero-riparian habitat from flood events. The xero-riparian habitat on the allotment is not being used more than any other area on the allotment due to the fact that there is no perennial water thus congregation of livestock is not occurring in one area. Xero-riparian development would be slower than if it wasn't grazed at all, but with the current rate of use there is still ample time for development of forage while providing for wildlife.

5.5.3 Impacts of Alternative 2- No Grazing

Xero-riparian habitat on this allotment would not be grazed and establishment of xero-riparian species would increase. Habitat could expand if sufficient moisture from the environment is provided.

5.5.4 Impacts of Alternative 3- Limit period of use

Xero-riparian vegetation would be rested during 6 months of the growing season which would allow for reproduction and growth. The xero-riparian habitat would be grazed after most of the yearly growth has occurred and terminal buds are less palatable. Taking into account that the xero-riparian area on this allotment is ephemeral, seedling development of xero-riparian woody species is less likely to occur even without grazing but would be more likely to occur with this rest period.

5.5.5 Impacts of Alternative 4- No Action

Impacts would be essentially the same as Alternative 1.

5.6 Land Health Standards

5.6.1 Affected Environment

A Rangeland Health Evaluation was completed on the allotment on May 21st 2008, and a second evaluation was conducted on December 7th 2011. The USDA Natural Resources Conservation Service (NRCS) State General Soil Map was completed in 1975. The reference sheet for the Granitic Hills 16-10" p.z. was created on 17 February 2005. Both evaluations' preponderance of evidence indicated that there was a "none to slight" rating for departure from the ecological site description and ecological reference area for soil/site stability and hydrologic functions. Rills, waterflow patterns, pedestals and/or terracettes, bare ground, gullies, and litter movement were "none to slight" for departure from expected reference conditions. Rocky outcroppings and ground cover contributed to the absence of rills, gullies, and water-flow patterns. Plant community composition and distribution relative to infiltration was also "none to slight" for departure from expected reference conditions. Biotic integrity was rated "none to slight" for departure from expected reference conditions during both evaluations.

In addition, vegetation monitoring (ground cover, pace frequency, fetch, and dry weight rank) was conducted on 7 July 2009, and four pace frequency transects, 25 quadrat placements each, were run parallel to each other, four paces apart. Data collected included ground cover (amount of surface area comprised of bare ground, perennial plant bases, litter, gravel, or rocks), plant frequency (the number of times a plant species is present within quadrats), fetch (distance from the quadrat's ground cover point to the nearest perennial plant base), and dry

weight rank (plant composition on a dry weight production basis). Gravel, litter, rock, and live basal vegetation comprised 18%, 60%, 11%, and 9% of ground cover, respectively. There was also 2% bare ground. Fetch ranged from 0-20", with a mean of 2.3". The plants with the highest frequency included Aristida and Sideoats Gramma, Silktassel, and Manzanita at 35%, 24%, 18% and 17% respectively. Plants with the highest dry weight composition included three-awn, side-oats grama, pinyon ricegrass and bullgrass with 24%, 20%, 10% and 10% respectively. Monitoring data from the rangeland health assessment is available at the Tucson Field Office. Actual use was reported by the lessee in 2009, 2010, 2011 and 2012 has been two head of cattle year-long.

5.6.2 Impacts of Alternative 1 - Proposed Action

The rangeland health standards for the allotment are currently being met for biotic integrity, hydrologic function, and soil/site stability, as determined through evaluations and monitoring.

5.6.3 Impacts of Alternative 2 – No Grazing

The rangeland health standards for the allotment are currently being met for biotic integrity, hydrologic function, and soil/site stability, as determined through evaluations and monitoring.

5.6.4 Impacts of Alternative 3 – Limit period of use

Adjusting the stocking rate from two cattle year-long (24 AUMs) to four cattle from September 1- March 1 (24 AUMs) continues to allow rangeland health standards to be met. The rangeland health standards for the allotment are currently being met for biotic integrity, hydrologic function, and soil/site stability, as determined through evaluations and monitoring, and would continue to be met through a reduction in the stocking rate.

5.6.5 Impacts of Alternative 4- No Action

The rangeland health standards for the allotment are currently being met for biotic integrity, hydrologic function, and soil/site stability, as determined through evaluations and monitoring.

5.7 Vegetation

5.7.1 Affected Environment

The Natural Resource Conservation Service (NRCS) characterizes land resource regions by particular patterns of soils, climate, water resources, and land uses. These large regions are then grouped into Major Land Resource Areas (MLRAs). MLRAs are then broken down further into ecological sites, which are associated units of soil and vegetation with quantifiable characteristics. The BLM portion of the Susnow Allotment is located in MLRA 041- Southeastern Arizona Basin and Range. Ecological Sites within this MLRA include Granitic Hills at the land health evaluation site. This Ecological Site occurs in the middle elevations of the Madrean Basin and Range province in southeastern Arizona on hill-slopes, ridge-tops, and rolling pediments. Slope aspect is site differentiating at elevations near common resource area boundaries. This ecological site receives 16 to 20 inches of precipitation per year and elevation ranges from 4700 to 5500 feet. Ecological Site Guides were last updated in 2005 for this site.

Range site guides were last updated in 1982. The allotment is located in the Southern Arizona Basin and Range. The annual precipitation is 18.6 inches per year. The current plant community includes Three-awn (*Aristida sp.*), Spike Muhly (*Muhlenbergia wrightii*), Rothrock's Gramma

(*Bouteloua barbata*), Tanglehead (*Heteropogon contortus*), Arizona Fescue (*Festuca arizonica*), Hairy Grama (*Bouteloua hirsuta*), June Grass (*Koeleria cristata*), Drop Seed (*Sporobolus flexuosus*), Juniper (*Juniperus sp.*), Pinyon (*Pinus edulis*), Manzanita (*Arctostaphylos sp.*), Emory Oak (*Quercus emoryi*), Ceanothus, Seepwillow (*Bacharis salicifolia*), Fremont Cottonwood (*Populus fremontii*), Sotol (*Dasyllirion wheeleri*), Yucca (*Yucca sp.*), and Tree Cholla (*Opuntia imbricate*). Native perennial grasses include hairy grama (*Bouteloua hirsuta*), sideoats grama (*Bouteloua curtipendula*), tanglehead (*Heteropogon contortus*), threeawn (*Aristida sp.*), needlegrass (*Stipa sp.*), bullgrass (*Muhlenbergia emersleyi*), wolfstail (*Lycurus phleoides*), and cane beardgrass (*Bothriochloa barbinodis*).

The Desired Plant Community (DPC) for a site is defined as the one that has been identified through a management plan to best meet the plan's objectives for the site, of several plant communities that may occupy a site, and must protect the site at a minimum. The plant communities found on an ecological site are naturally variable. Existing communities are the result of the combination of historical and recent uses and natural events. Composition and production will vary with yearly conditions, location, aspect, and natural variability of the soils. The Historic Climax Plant Community (HCPC) represents the natural potential plant communities found on relatively undisturbed sites.

The ecological site description at the Susnow allotment is Granitic Hills 16-20" p.z. (site ID R041XA102AZ) in the Southeastern Arizona Basin and Range Major Land Resource Area. The HCPC consists of 25-40% canopy of mid-grasses, 5-15% canopy of Arizona white oak (*Quercus arizonica*), Emory oak (*Quercus emoryi*), or Mexican blue oak (*Quercus oblongifolia*), 1-10% canopy of yucca-like shrubs, 5-10% canopy of other shrubs and succulents, and other warm and cool season grasses.

5.7.2 Impacts of Alternative 1 - Proposed Action

A forage utilization objective of 40% has been shown to allow for plant production and resilience (Valentine 1990, Van Poollen, et al. 1979). Holechek et al. (2004), recommends that grazing intensity in areas of the southwest where annual precipitation is less than 12 inches should be between 25% and 40%. The current low utilization limits (less than 10%) on the Susnow Allotment provides a sustainable forage base for livestock grazing and provides cover and forage for wildlife and watershed function.

5.7.3 Impacts of Alternative 2 – No Grazing

Elimination of grazing would keep the utilization levels well below the objective level of 40% since they are less than 10% with livestock grazing. This would allow upland vegetation to grow, set seed, build up carbohydrate stores, build root systems, become established, and spread unrestricted when weather conditions permit. New fences along BLM boundaries would require some pruning and removal of vegetation.

5.7.4 Impacts of Alternative 3 – Limit period of use

Limited period of use may allow a decrease in livestock utilization and a subsequent change in vegetative cover, structure, and/or species. The current utilization levels would likely be even lower with a reduction in the stocking rate, and would provide a sustainable forage base for livestock grazing consistent with other multiple uses. Additional monitoring of vegetation attributes would be required to assess a reduction in the stocking rate.

5.7.5 Impacts of Alternative 4- No Action

Impacts would essentially be the same as under Alternative 1.

5.8 Soils

5.8.1 Affected Environment

USDA Natural Resource Conservation Service (NRCS) State General Soil Map was completed in 1975. Range site guides were last updated in 1982. The allotment is located in the Southern Arizona Basin and Range. The annual precipitation is 18.6 inches per year.

Hogris—Loamy Hills (QUAR, QUEM), 20- to 23- inch precipitation zone, 41AZ124AZ

Far-Huachuca-Hogris association, 15 to 70 percent slopes

Setting Landform: hills and mountains

Slope range: Hogris—15 to 50 percent; Elevation: Far and Hogris—5,600 to 6,600 feet; Mean annual precipitation: 20 to 24 inches; Mean annual air temperature: 50 to 57 degrees F; Frost-free period: 120 to 180 days; Composition of Hogris and similar soils: 20 percent; Contrasting inclusions: 10 percent

Typical Profile

0 to 2 inches—slightly decomposed oak and pine litter

2 to 6 inches—dark grayish brown extremely cobbly loam

6 to 9 inches—brown extremely cobbly loam

9 to 14 inches—yellowish brown extremely cobbly fine sandy loam

14 to 60 inches—yellowish brown extremely cobbly sandy loam

Parent material: mixed slope alluvium

Depth class: very deep

Drainage class: somewhat excessively drained

Permeability: moderately rapid

Available water capacity: very low or low

Potential rooting depth: 60 inches or more

Runoff rate: high

Hazard of erosion: by water—moderate or severe; by wind—very slight

Shrink-swell potential: low

Content of rock fragments: 40 to 80 percent

Corrosivity: steel—high; concrete—moderate

5.8.2 Impacts of Alternative 1 - Proposed Action

The surface coarse fragments found on most of the soil types are not easily displaced by livestock except on well used trails. Erosion would be limited because the surface rock fragments help armor the soil surface from raindrop impact and protect the soil surface from detachment and transport by water runoff. Residual vegetation should be adequate to protect soils from wind and water erosion. Some compaction could occur on well used trails but off of the trails compaction should not change the soil's capacity for absorption and infiltration of water. Plant canopies of plants of all forms and sizes help absorb and dissipate raindrop impact. Plants also help promote water infiltration, reducing runoff. Achieving and maintaining standards for rangeland health would ensure that soils are maintained in healthy functioning condition.

5.8.3 Impacts of Alternative 2 – No Grazing

Potential for impacts to soil due to grazing on public land would be eliminated.

5.8.4 Impacts of Alternative 3 – Limit period of use

Potential for impacts due to grazing on public land would be lessened.

5.8.5 Impacts of Alternative 4- No Action

The impacts would be essentially the same as under Alternative 1.

5.9 Grazing Program

5.9.1 Affected Environment

The Susnow Allotment is in the custodial category, and is authorized for two cattle year-long (24 AUMs). Livestock water is provided on the private property on the southwest side of the allotment.

5.9.2 Impacts of Alternative 1 - Proposed Action

The lessee would be allowed to utilize the allotment. Under the continuation of current use, the allotment would be utilized between twenty-six to one hundred percent. The lessee would use the allotment for the pasturing of 2 cows year-long, equating to 24 AUMs.

5.9.3 Impacts of Alternative 2 – No Grazing

No grazing would be authorized on public land. BLM would initiate the process in accordance with 43 CFR parts 4100 and amend the RMP. The lessee would lose the federal grazing lease and have to limit grazing to private lands.

5.9.4 Impacts of Alternative 3 – Limit period of use

Period of use would be changed from 24 AUMs yearlong to 24 AUMs in the winter months from September 1- March 1. This would be accomplished by the lessee feeding livestock at their house within corrals on private lands.

5.9.5 Impacts of Alternative 4- No Action

The impacts would be essentially the same as under Alternative 1.

5.10 Invasive and Non-native Species

5.10.1 Affected Environment

One of the concerns with the allotment was the invasive characteristics of the Alligator Juniper present throughout the site. At its current state the percent canopy cover is relatively low at 8%. While Juniper is a native species it has characteristics of invasive woody species. No other species on the allotment were of concern and no nonnative plants were noted. The site has the potential to positively respond to a prescribed fire on the upland woody vegetation, where the Juniper has begun to be invasive.

5.10.2 Impacts of Alternative 1 - Proposed Action

Renewing this allotment grazing lease will not worsen the percent cover of the juniper already present on the site. The allotment authorizes 24 AUMs and is often utilized well below that. No nonnative plant species were found on the allotment and monitoring this key area will continue.

5.10.3 Impacts of Alternative 2- No Grazing

Under the no grazing alternative the impacts of nonnative and invasive species will likely stay the same. There are no nonnative species currently on the allotment and the 8% canopy cover of Juniper won't likely change in the 10 year lease period.

5.10.4 Impacts of Alternative 3- Limit period of use

Under the limited period of use alternative, the impacts of nonnative and invasive species will likely stay the same. There are no nonnative species currently on the allotment and the 8% canopy cover of Juniper won't likely change in the 10 year lease period.

5.10.5 Impacts of Alternative 4- No Action

Renewing this allotment grazing lease will not worsen the percent cover of the juniper already present on the site. The allotment authorizes 24 AUMs and is often utilized well below that.

6.0 Cumulative Effects

In addition to direct and indirect effects, the cumulative effects of the proposed action are those that would result from renewal of the Susnow Allotment grazing lease, combined with other reasonably foreseeable future actions. A cumulative impact, as defined by the CEQ (40 CFR 1508.7), is the impact on the environment that results from the incremental impact of an action when added to other past, present, and reasonably foreseeable future actions, regardless of what agency (federal or nonfederal) or person undertakes such actions. Individually minor, but collectively significant actions taking place over time, may result in cumulative impacts. Reasonably foreseeable future actions, while not part of the proposed action, refer to future projections or estimates of what is likely to take place when a proposed action is implemented. This allows for future impacts, cumulative and otherwise, to be estimated under NEPA.

The following issues were identified for detailed analysis based on the criteria in the BLM NEPA Handbook (Section 6.4): 1) habitat for special status species, 2) nesting cover and food sources for migratory birds, 3) ground cover and soil erosion at any springs or ephemeral washes, and the result to watershed health, 4) species composition and cover of upland vegetation with quantitative monitoring results and actual use, 5) spread of invasive and non-native species, and 6) wildlife distribution from range developments and water sources for livestock.

6.1 Geographic Scope of the Cumulative Effects Analysis

The geographic scope for each resource issue is given in the following table.

Resource Issue	Geographic Area for Analysis
Habitat for Special Status Species	Range of lesser long-nosed bat, jaguar, and ocelot in U.S.

Resource Issue	Geographic Area for Analysis
Nesting Cover and Food Sources for Migratory Birds	Mule Mountain nesting birds and San Pedro River migration corridor.
Ground Cover and Soil Erosion in Wetlands/Riparian Areas	Watershed. The watershed includes the crest of Escabrosa Ridge to the ephemeral drainages on the southern portions of the allotment, which drain into Banning Creek which is a tributary to the San Pedro River.
Watershed Health	Watershed.
Species Composition and Cover of Vegetation	Watershed.
Invasive and Non-native Species	Watershed.
Wildlife Distribution	Mule Mountains and San Pedro River corridor.
Land Health Standards	Watershed.

6.2 Timeframe of the Cumulative Effects Analysis

The proposed action would authorize livestock grazing for 10 years. Although there are theoretically some indirect effects of livestock grazing that could continue after grazing (such as long-term patterns of plant species composition), the measurable effects of livestock grazing on vegetation would occur during the period of the 10-year grazing lease. Therefore, the temporal scope for analysis of this issue is 10 years for short-term effects. Short-term effects are defined as those impacts that last less than ten years, because ten years is the standard term for grazing leases. Long-term effects are defined as those impacts that last longer than ten years, because these impacts could last longer than can be modified under a current grazing lease.

6.3 Past Actions

During the late part of the 19th century and early part of the 20th century, heavy grazing occurred over a large part of the public lands (Humphrey 1987), and had a detrimental effect on some resources (Bahre and Shelton 1996, Hastings and Turner 1965). Livestock grazing has occurred in the area since the Spanish land grants in the valleys of the San Pedro River before 1800 (Hastings and Turner 1965). The “fire deficit” caused by fire suppression (Climate Change 2012), and change in vegetation resulted in increased severity of fire in some locations. With emphasis on grazing management, the slow process of improving rangelands began. Grazing management has helped to maintain or improve resource conditions in some areas compared to historic use.

However, livestock grazing on federal lands is not the only factor that affects rangeland vegetation. Wood products were extensively harvested in the vicinity of the allotment for the mining industry, and this practice removed trees and reduced fuel loads within these vegetation communities. Beginning in the 1930s, the federal government actively managed public land with fire suppression. Because of fire suppression, livestock grazing, decrease in harvest of wood products, precipitation, and other factors, woody vegetation has reestablished on sites and expanded into adjacent vegetation communities. Other impacts from human caused climate change altered vegetation cover and composition. Increases in carbon dioxide levels from

burning of fossil fuels have favored the growth of woody species through carbon sequestration (Throop and Archer 2008).

As a consequence of alterations in land use practices and climate change, vegetation cover and composition changed. Shrub and tree densities and subsequent canopy cover increased (Brown 1950). Livestock grazing, fire, neighboring woody plants, increase in Lehmann lovegrass, and precipitation appear to have influenced native perennial grass dynamics (McClaran 2003). Increase in woody species resulted in higher fuel loads which created larger, hotter fires.

Vegetation communities became less diverse and more even-aged. In the past, prescribed and wild fire has occurred on the San Pedro Riparian NCA and on other federal, state, and private land nearby. For the most part, prescribed fire has been used in order to control woody species, such as mesquite and juniper, and increase herbaceous vegetation, or for maintenance of grassland communities.

Population growth has changed the setting from rural to suburban and urban uses in some areas. Increased human activity has occurred including individuals or groups engaging in illegal immigration or other border crossing violations and subsequent Border Patrol activity.

6.4 Present Actions

The trend toward larger, hotter wildfires continued in the local area with the 2010 fire season. Continued fire suppression perpetuates fuel loading. Goals of current land management practices by federal agencies include improvement of vegetation communities and authorized livestock use must meet land health standards. Inventory, monitoring, and control of noxious and invasive weeds are occurring. Illegal border crossings and other illegal border activities continue as does Border Patrol activity. Recreational use of public land in the area occurs. Mining in the area may continue in some locations.

6.5 Reasonably Foreseeable Future Actions

The following list identifies the land use planning and environmental documents consulted in determining the pertinent existing and reasonably foreseeable future actions:

- 1) Eastern Arizona Grazing EIS,
- 2) Safford District RMP,
- 3) San Pedro River Riparian Management Plan,
- 4) San Pedro Riparian NCA Habitat Management Plan,
- 5) Environmental assessments for renewal of other BLM grazing leases within the same watershed (e.g. Susnow, La Roca, Ramirez, Albert Thomas, Cleveland, Wildcat Canyon, and Powers).

The past, present, and reasonably foreseeable projections are made only for the purpose of analyzing possible future cumulative impacts, and are not linked to the Proposed Action. Inclusion of these documents in the Susnow Allotment Grazing Lease Renewal EA scenario does not constitute a decision or a commitment of resources. If a future action requires NEPA compliance, inclusion in this cumulative impact analysis would not satisfy any NEPA requirement.

The future of soils, vegetation, hydrology and other biotic factors cannot be predicted by considering changes in livestock grazing management alone. Population growth and demographic changes are likely to occur in the local area. Land-use changes, such as increased recreation use and subdivision of privately owned ranch lands, are likely to have future impacts to resources. The number of natural fire ignitions is likely to be similar to previous years, with some experts anticipating the continued occurrence of larger, hotter fires. Previous research reveals that climatic changes, including increasing temperatures and the earlier onset of spring snowmelt, have been linked to increasing levels of atmospheric greenhouse gases and are likely influencing these damaging fire trends. As average global temperatures rise, researchers project that the risk of wildfires in America's West will accelerate (Climate Central 2012). Prescribed fire will continue to be used in some locations, and it is likely that the wild land urban interface will continue to be a concern in the management of fires. Livestock grazing will continue to be managed to meet land health standards. It is likely that increased efforts will be required to detect and control noxious and invasive weeds.

6.6 Issues Analyzed in Detail

The cumulative effects analysis is presented below for each resource issue.

6.6.1 How would livestock grazing affect habitat for special status species?

The existing condition of special status species' habitat is an effect of past human activity within the geographic scope (range of each species) consisting of trampling and soil loss from livestock grazing and human activity, changes in plant frequency, cover, and utilization, fires and fire suppression, recreation, wood cutting, mining, habitat fragmentation due to roads, ROWs, and fence lines, residential and commercial construction, border violations and Border Patrol activity, groundwater and surface water use and diversion, predator control, drought and climate change.

The cumulative effect of the no action alternative (current terms and conditions) or the proposed action to renew the grazing lease with additional terms and conditions, together with other present and reasonably foreseeable actions, would not result in fragmentation of habitat, or removal of dense vegetation within xero-riparian corridors. Some special status species could be affected either through direct disturbance by humans or livestock, through effects to a species' food source, through effects to the species' movement corridors, or through modification of habitat used for concealment, foraging, or hunting. The following is an excerpt from the Gila District Grazing Program BO (FWS 2012): *Livestock grazing on non-Federal lands affects the watershed conditions for some listed species. Excessive livestock grazing could result in increased erosion, high run-off after storms, and decreased habitat quality and quantity because of reduced plant cover and soil disturbance.* Other activities on non-Federal lands that may not be subject to section 7 consultation include recreation, residential and commercial development, groundwater pumping, water diversions and channelization, and mining; these activities can and do result in adverse effects to listed species in the action area. All of these actions could reduce or eliminate habitat that could adversely affect some species in some areas. The effects on species vary depending on the actions in the immediate areas of listed species. In the borderlands of Arizona, there has been a dramatic increase in the numbers of cross border violators since the 1997 BO. These activities have resulted in many miles of new vehicle routes, trails, campsites, and accumulations of trash. Crossborder violators build warming or cooking fires, which occasionally escape and become wildfires; and sometimes

wildfires are deliberately set as diversions so cross border violators can escape more easily. They also camp in riparian areas, which may result in reducing habitat quality and alter species use, including blocking travel ways.

The cumulative effect of either the no grazing alternative or reduction of the stocking rate alternative, together with other present and reasonably foreseeable actions, may result in short and long-term improvement in vegetation conditions in both xero-riparian and upland areas, which may constitute progress toward enhancing land health standards. No grazing or a reduction in the stocking rate alternatives may result in improvements of some indicators of land health, such as improvements from departures from the ecological site description (reference conditions) in ratings that are not “none to slight.” A Rangeland Health Evaluation was completed on the allotment on May 21st 2008, and a second evaluation was conducted on December 7th 2011. Both evaluations’ preponderance of evidence indicated that there was a “none to slight” rating for departure from the ecological site description and ecological reference area for soil/site stability and hydrologic functions. Rills, waterflow patterns, pedestals and/or terracettes, bare ground, gullies, and litter movement were “none to slight” for departure from expected reference conditions. Rocky outcroppings and ground cover contributed to the absence of rills, gullies, and water-flow patterns. Plant community composition and distribution relative to infiltration was also “none to slight” for departure from expected reference conditions. Biotic integrity was rated “none to slight” for departure from expected reference conditions during both evaluations.

The no grazing or reduction in the stocking rate alternatives may result in short and long-term decreased utilization of agave by livestock with more agave available for use as a food source by lesser long-nosed bat, however, only one agave was noted with herbivory during the land health evaluations, and herbivory did not appear to be from livestock. Short and long-term increased cover in xero-riparian and upland areas may result in better concealment, movement, and hunting areas for jaguar and ocelot.

The cumulative effect of the alternative to increase the stocking rate, together with other present and reasonably foreseeable actions, may result in short-term increased utilization and long-term changes in plant frequency and cover. Some special status species could be affected either through direct disturbance by humans or livestock, through effects to a species’ food source, through effects to the species’ movement corridors, or through modification of habitat used for concealment, foraging, or hunting.

6.6.2 How would livestock grazing affect nesting cover and food sources for migratory birds?

The cumulative effects analysis area for biological resources could include the overall range of any population of wildlife that may be affected by livestock grazing. For some migratory bird species that utilize the San Pedro River as a migration corridor in the Pacific Flyway, this could include much of North and South America. Cumulative effects may include effects on dispersal between populations.

The existing condition of migratory birds and their habitat is an effect of past human activity within the geographic scope (the species range) consisting of trampling and soil loss caused by

livestock and human activity, fires and fire suppression, wood cutting, mining, changes in plant frequency, cover, and utilization, habitat fragmentation due to roads, ROWs, or fence lines, housing and commercial construction, predator control, groundwater and surface water use and diversion, introduction of non-native species (e.g. domestic cat, Lehmann lovegrass, tamarisk), drought and climate change.

The Safford District RMP EIS (page 135) notes that riparian areas in the district are important migration corridors through Arizona's deserts for birds moving between tropical wintering areas and breeding areas farther north. The value of riparian habitat extends beyond district, state, or national boundaries.

The cumulative effect of the no action (current terms and conditions), together with other present and reasonably foreseeable actions, may result in some short and long-term mortality of birds unable to escape from water troughs that are not equipped with escape ramps.

The cumulative effect of the proposed action to renew the grazing lease, together with other present and reasonably foreseeable actions, may result in less mortality of birds from the inability to escape from water troughs, compared to the no action alternative as escape ramps will be required.

The cumulative effect of either the no grazing or reduction of the stocking rate alternatives, together with other present and reasonably foreseeable actions, may result in short and long-term improvement of vegetation conditions in both xero-riparian and upland areas on BLM land; increased utilization and decreased cover may occur on state and private land if BLM land were fenced out and grazing continued on private lands. Fencing activities, such as brushing, could result in direct short-term impacts to nesting birds if nesting avoidance dates were not used. The no grazing or reduction in the stocking rate alternatives may result in short and long-term improvement in vegetation conditions in both xero-riparian and upland areas; this may enhance land health standards, such as improvements from departures from the ecological site description (reference conditions) in ratings that are not "none to slight." However, land health standards are currently being met. Improved vegetation cover in xero-riparian and upland areas may result in improved concealment, movement, nesting, foraging, or hunting habitat for migratory birds, and may have effects on food sources.

The cumulative effect of the proposed action for an increase in the stocking rate, together with other present and reasonably foreseeable actions, may result in increased utilization of vegetation in both xero-riparian and upland areas. This may result in less cover used for concealment, movement, nesting, foraging, or hunting habitat, and may have effects on food sources.

6.6.3 How would livestock grazing affect ground cover and soil erosion at any wetlands or riparian areas?

The existing condition of the xero-riparian areas (no wetlands or riparian areas occur on the BLM lands on the allotment) are a result of past human activity within the geographic scope, consisting of trampling and soil loss from livestock grazing and human activity, changes in plant frequency, cover, utilization, fires and fire suppression, wood cutting, mining, roads,

ROWs, and fence lines, construction of retention/detention basins, groundwater and surface water use and diversion, drought and climate change, residential and commercial construction, border crossing violations and Border Patrol activities. Xero-riparian vegetation along washes in the watershed may be more heavily utilized by livestock, resulting in decreased recruitment of deciduous woody species and stabilizing riparian species.

Based on the rangeland health assessment (RHA) and previous monitoring, current resource conditions on this allotment are sufficient and sustainable to support the level of grazing use outlined in the ten-year grazing lease.

The Safford District RMP EIS (page 147) notes that riparian scrub is usually composed of a dense stand of narrowleaf shrubs, where dominant species may consist of seepwillow, desert willow, coyote willow, mesquite, catclaw, and tamarisk. The Eastern Arizona Grazing DEIS (page 41) concludes that the proposed action (a decrease of historic high livestock use) would have significant beneficial impacts to the soil resource.

Xero-riparian vegetation or soil conditions in the Susnow Allotment have not changed since the Safford District RMP EIS or Eastern Arizona Grazing DEIS in a way that would alter the analytical conclusions. The Susnow Allotment evaluation determined that Standards 1 and 3 were being met, and Standard 2 (Watershed Function - Riparian/Wetland Areas) was not applicable due to the lack of riparian and wetland areas on the allotment. Xero-riparian washes are present on the allotment. Monitoring data in the evaluation determined that adequate cover and composition of upland vegetation was present. That evaluation is incorporated here by reference.

The cumulative effect of the no action (current terms and conditions) and proposed action to renew the grazing lease, together with other present and reasonably foreseeable actions, may result in increased utilization of vegetation in any xero-riparian areas (which may contain greener, more palatable vegetation), compared to the no grazing alternative.

The cumulative effect of either the no grazing or reduction of the stocking rate alternatives, together with other present and reasonably foreseeable actions, may result in improving vegetation conditions in both xero-riparian and upland areas on BLM land. The no grazing or reduction in the stocking rate alternatives may result in short and long-term improvement in vegetation conditions in both xero-riparian and upland areas; this may enhance land health standards, such as improvements from departures from the ecological site description (reference conditions) in ratings that are not “none to slight.” However, land health standards are currently being met. Improved vegetation cover in xero-riparian and upland areas may result in the better ability of the watershed to trap and hold sediments and water.

The cumulative effect of the proposed action for an increase in the stocking rate, together with other present and reasonably foreseeable actions, may result in increased utilization of vegetation in both xero-riparian and upland areas. This may result in less cover, and decreased ability for water infiltration to the watershed, springs, and xero-riparian areas, and would require documentation through monitoring and land health evaluations.

6.6.4 What is the result to watershed health?

The existing condition of the watershed is an effect of past human activity within the geographic scope, consisting of trampling and soil loss from livestock grazing and human activity, changes in plant frequency, cover, and utilization, fires and fire suppression, wood cutting, mining, residential and commercial construction, construction of detention/retention basins, construction of roads, fence lines, and other ROW activities such as utility pole placement and railroad construction, drought and climate change.

The Safford District RMP EIS (page 128) notes that watersheds are in generally fair to good condition. Surface rock and vegetation cover protect the soil from erosion. Watershed conditions in the Susnow Allotment have not changed since the Safford District RMP EIS in a way that would alter the analytical conclusions in the RMP EIS. The Susnow Allotment evaluation determined that Standards 1 and 3 were being met, and Standard 2 (Watershed Function - Riparian/Wetland Areas) was not applicable due to the lack of riparian or wetland areas on the allotment. Monitoring data in the evaluation determined that adequate cover and composition of vegetation in uplands was present. That evaluation is incorporated here by reference.

The cumulative effect of the no action (current terms and conditions) and proposed action to renew the grazing lease, together with other present and reasonably foreseeable actions, may result in increased utilization of vegetation in uplands and xero-riparian areas compared to the no grazing alternative.

The cumulative effect of either the no grazing or reduction of the stocking rate alternatives, together with other present and reasonably foreseeable actions, may cause a reduction in sediment yield and improved infiltration, resulting in improvement of vegetation conditions in both xero-riparian and upland areas on BLM land. Maintenance or improvement of water quality lower in the watershed may occur. This may enhance land health standards, such as improvements from departures from the ecological site description (reference conditions) in ratings that are not “none to slight.” However, land health standards are currently being met. Improved vegetation cover in xero-riparian and upland areas may result in the better ability of the watershed to trap and hold sediments and water.

The cumulative effect of the proposed action for an increase in the stocking rate, together with other present and reasonably foreseeable actions, may cause increased utilization of vegetation in both xero-riparian and upland areas, resulting in less cover, and decreased ability for water infiltration to the watershed. This would require documentation through monitoring and land health evaluations.

6.6.5 How would livestock grazing affect species composition and cover of upland vegetation?

The existing condition of vegetation is an effect of past human activity within the geographic scope, consisting of trampling and soil loss from livestock grazing and human activity, changes in plant frequency, composition, and utilization, fires and fire suppression, wood cutting, mining, fragmentation of land due to roads, ROWs, and fence lines, residential and commercial

construction, border crossing violations and Border Patrol activities, drought and climate change.

Increased utilization of upland vegetation, such as native perennial grasses and forbs, in the watershed may occur by livestock grazing, compared to the no grazing alternative. The Safford District RMP EIS (page 147) notes that Madrean evergreen woodland is usually composed of evergreen oaks, various species of juniper and associated shrubs, forbs and grasses. The End of Year Range Condition Report (1990), cited in the Safford District RMP EIS, lists condition in 66,000 acres as excellent, 542,000 acres as good, 406,000 acres as fair, 291,000 acres as poor, and 111,000 acres as unclassified condition. The Eastern Arizona Grazing DEIS (page 41) concludes that the vegetation resource would receive a slight benefit from the implementation of the proposed action. Upland vegetation conditions in the Susnow Allotment have not changed since the Safford District RMP EIS or Eastern Arizona Grazing DEIS in a way that would alter the analytical conclusions in the RMP EIS.

The Susnow Allotment evaluation determined that Standards 1 and 3 were being met, and Standard 2 (Watershed Function - Riparian/Wetland Areas) was not applicable due to the lack of riparian and wetland areas on the allotment. Monitoring data in the evaluation determined that adequate cover and composition of upland vegetation was present. That evaluation is incorporated here by reference.

The cumulative effect of the no action (current terms and conditions) and proposed action to renew the grazing lease (compared to the no grazing alternative), together with other present and reasonably foreseeable actions, may result in increased utilization of native perennial grasses, causing a short-term increase in utilization and possibly a long-term change in plant frequency, cover, or composition.

The cumulative effect of either the no grazing or reduction of the stocking rate alternatives, together with other present and reasonably foreseeable actions, may cause short-term decreased utilization of native perennial grasses, possibly resulting in long-term changes in plant frequency, cover, or composition in both xero-riparian and upland areas on BLM land. The no grazing or reduction in the stocking rate alternatives may result in short and long-term increases in cover of grasses and forbs; this may enhance land health standards, such as improvements from departures from the ecological site description (reference conditions) in ratings that are not “none to slight.” However, land health standards are currently being met.

The cumulative effect of the proposed action for an increase in the stocking rate, together with other present and reasonably foreseeable actions, may cause short-term increased utilization of vegetation, possibly resulting in long-term changes in plant frequency, cover, or composition. This would require documentation through monitoring and land health evaluations.

6.6.6 How would livestock grazing affect invasive and non-native species?

The existing condition of invasive and non-native species is an effect of past human activity within the geographic scope, consisting of trampling and soil loss from livestock grazing and human activity, changes in plant frequency, cover, and utilization, fires and fire suppression, wood cutting, mining, road construction, accessibility due to roads, ROWs, and fence lines, housing and commercial construction, border crossing violation and Border Patrol activities,

construction of retention/detention basins, groundwater and surface water use and diversion, introduction of non-native species (e.g. Lehmann lovegrass, tamarisk, giant reed), drought and climate change.

The cumulative effect of the no action (current terms and conditions) and proposed action to renew the grazing lease, together with other present and reasonably foreseeable actions, may result in increased utilization of native perennial grasses, causing a short-term increase in utilization and possibly a long-term change in plant frequency, cover, or composition. Short-term increased utilization of native perennial grasses may result in the long-term ability of invasive plant species to become established and spread.

The cumulative effect of either the no grazing or reduction of the stocking rate alternatives, together with other present and reasonably foreseeable actions, may cause short-term decreased utilization of native perennial grasses, possibly resulting in long-term changes in plant frequency, cover, or composition in both xero-riparian and upland areas on BLM land. Short-term decreased utilization of native perennial grasses may result in less likelihood of long-term ability of invasive plant species to become established or spread. The no grazing or reduction in the stocking rate alternatives may result in short and long-term improvement in the amount of soil disturbance and bare ground leading to weed invasion; this may enhance land health standards, such as improvements from departures from the ecological site description (reference conditions) in ratings that are not “none to slight.” However, land health standards are currently being met.

The cumulative effect of the proposed action for an increase in the stocking rate, together with other present and reasonably foreseeable actions, may cause short-term increased utilization of vegetation, possibly resulting in long-term changes in plant frequency, cover, or composition. Increased utilization and bare ground may result in higher likelihood of long-term ability of invasive plant species to become established and spread. This would require documentation through monitoring and land health evaluations.

6.6.7 How would livestock grazing affect wildlife distribution?

The existing condition of wildlife distribution is an effect of past human activity within the geographic scope, consisting of trampling and soil loss from livestock grazing and human activity, changes in plant frequency, composition, and utilization, competition with livestock for water, food, or shelter, fires and fire suppression, recreation (including hunting), wood cutting, mining, habitat fragmentation due to roads, ROWs, or fence lines, residential and commercial construction, groundwater and surface water use and diversion, border crossing violation and Border Patrol activity, predator control, introduction of non-native species, drought and climate change.

The Safford District RMP EIS (page 135) notes that, in Arizona, 60% of wildlife species are dependent upon riparian and aquatic habitats, with 28 priority species requiring these habitats. Protection and management of this biological diversity is linked to the 0.5% of the land that is riparian and aquatic habitat. The ecological value of riparian and aquatic habitat is proportionately far greater than its size, and BLM set a goal of having 75% of its riparian habitat in good or excellent condition by 1997.

The Eastern Arizona Grazing DEIS (page 46) concludes that the most significant effects on wildlife habitat would occur in the long term since the impacts involved are related to changes in vegetation production and recovery. Mule deer would be the most affected big game species, and would benefit from increased forage production and decreased competition with livestock. Small game and nongame would benefit from increased forage and cover, compared to historic higher livestock use.

Wildlife habitat conditions in the Susnow Allotment have not changed since the Safford District RMP EIS and Eastern Arizona Grazing DEIS in a way that would alter the analytical conclusions. The Susnow Allotment evaluation determined that Standards 1 and 3 were being met, and Standard 2 (Watershed Function - Riparian/Wetland Areas) was not applicable due to the lack of riparian or wetland areas on the allotment. Monitoring data in the evaluation determined that adequate cover and composition of upland vegetation was present. That evaluation is incorporated here by reference.

The cumulative effect of the no action (current terms and conditions) and proposed action to renew the grazing lease, together with other present and reasonably foreseeable actions, may result in increased livestock utilization of native perennial grasses; this may cause a short-term increase in utilization and possibly a long-term change in plant frequency, cover, or composition, which may impact cover, food sources, and water availability for wildlife.

The cumulative effect of either the no grazing or reduction of the stocking rate alternatives, together with other present and reasonably foreseeable actions, may cause short-term decreased utilization of native perennial grasses and browse species, possibly resulting in long-term changes in plant frequency, cover, or composition, which may impact cover, food sources, and water availability for wildlife. The no grazing or reduction in the stocking rate alternatives may result in short and long-term improvement in vegetation conditions in both xero-riparian and upland areas; this may enhance land health standards, such as improvements from departures from the ecological site description (reference conditions) in ratings that are not “none to slight.” However, land health standards are currently being met.

The cumulative effect of the proposed action for an increase in the stocking rate, together with other present and reasonably foreseeable actions, may cause short-term increased utilization of vegetation, possibly causing long-term changes in plant frequency, cover, or composition, resulting in changes in cover, food sources, and water availability. This would require documentation through monitoring and land health evaluations.

6.6.8 How does livestock grazing affect Land Health Standards?

The existing condition of land health is an effect of past human activity within the geographic scope, consisting of trampling and soil loss caused by livestock and human activity, changes in plant frequency, cover, and utilization, fires and fire suppression, wood cutting, mining, road, ROW, and fence construction, construction of retention/detention basins, groundwater and surface water use and diversion, introduction of non-native species (e.g. Lehmann lovegrass), drought and climate change.

The Safford District RMP EIS (page 137) and the Eastern Arizona Grazing DEIS (page 21) note improve, maintain, and custodial category criteria for grazing allotments. The Eastern

Arizona Grazing DEIS (page 44) concludes that livestock production would increase and distribution would improve because of land treatments and range improvements; allotments with downward trends would continue to decline. Land Health Standards for the Susnow Allotment have not changed since the Safford District RMP EIS in a way that would alter the analytical conclusions in the RMP EIS. The Susnow Allotment evaluation determined that Standards 1 and 3 were being met, and Standard 2 (Watershed Function - Riparian/Wetland Areas) was not applicable due to the lack of riparian and wetland areas on the allotment. Monitoring data in the evaluation determined that adequate cover and composition of upland vegetation was present. That evaluation is incorporated here by reference.

The cumulative effect of the no action (current terms and conditions), proposed action to renew the grazing lease, no grazing, and reduction in the stocking rate alternatives, together with other present and reasonably foreseeable actions, may result in short and long-term maintenance or improvement of land health.

The no grazing or reduction in the stocking rate alternatives may result in short and long-term improvement in vegetation conditions in both xero-riparian and upland areas; this may enhance land health standards, such as improvements from departures from the ecological site description (reference conditions) in ratings that are not “none to slight.” However, land health standards are currently being met.

The cumulative effect of the proposed action for an increase in the stocking rate, together with other present and reasonably foreseeable actions, may cause short and long-term negative impacts to land health, but this would need to be documented through monitoring and land health evaluations.

7.0. Consultation, Cooperation, and Coordination:

The Susnow allotment evaluation was sent out to 17 interested publics in April 2009 and the following responded: Western Watersheds Project expressed concerns about the allotment and included technical recommendations.

Western Watershed Project made multiple recommendations for the forthcoming EA, and expressed concern about several issues. The recommendations for the EA were considered by the interdisciplinary team and the applicable points were incorporated into the EA. The concerns about and the technical recommendations ranged from impacts to riparian habitat to juniper encroachment in the uplands. Many of the concerns focused on potential impacts from livestock grazing and requested that these impacts be analyzed in the EA. All of the concerns were addressed through additional data collection, changes to the evaluation, or with analysis in the EA.

In addition to personal consultation, cooperation, and coordination, NEPA Project Coordination Meetings are held twice a month at the Tucson Field Office.

8.0 Persons/Agencies Consulted:

This proposal was presented at the BLM/ bi-monthly NEPA project coordination meetings held on June 18, 2012. Persons expressing an interest in reviewing the proposal are listed on the TFO Scoping Form, and below.

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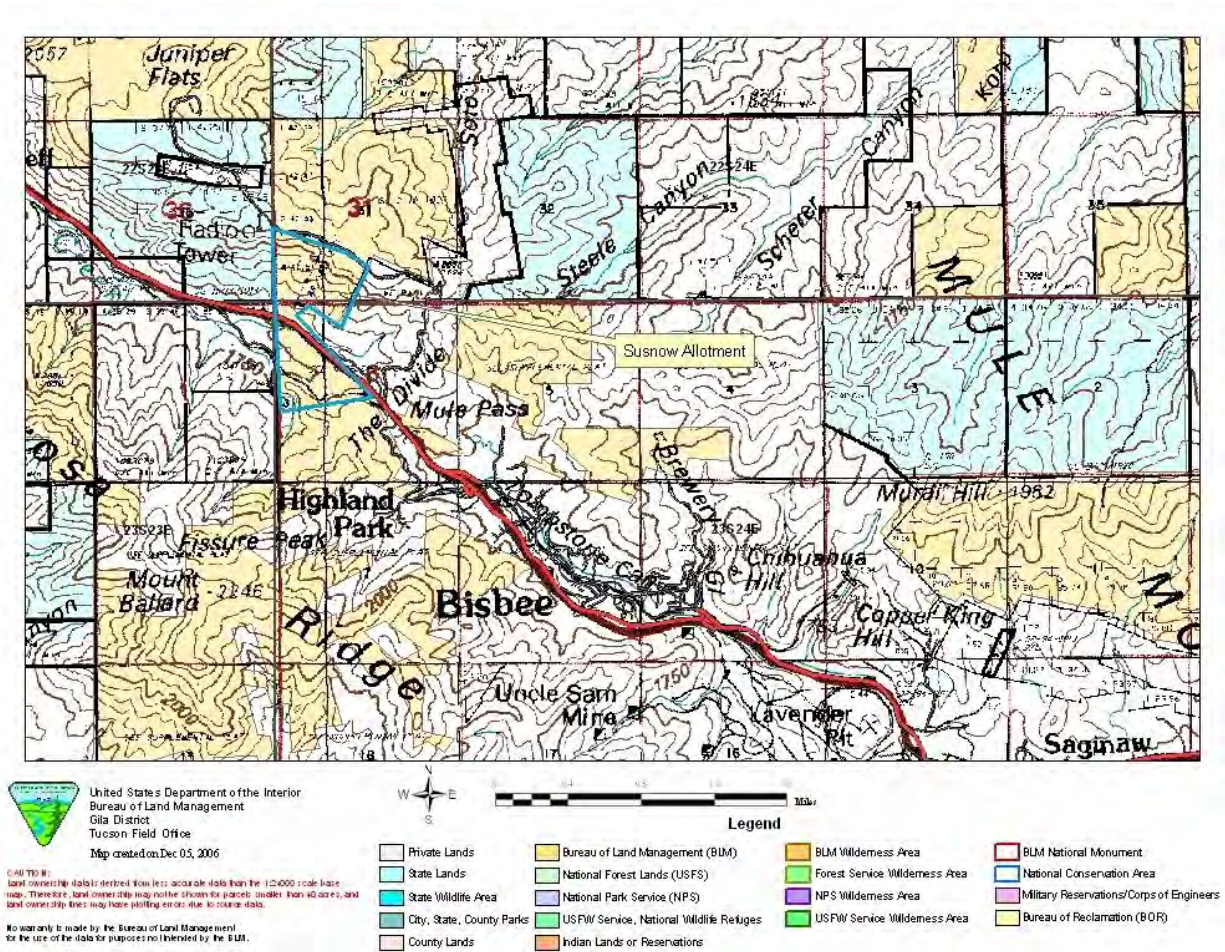
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10.0 Appendices:

Appendix 10.1 Map



Appendix 10.2 Conservation measures for selected species from 2012 Gila District Grazing Program biological opinion.

Federally Listed Species

Jaguar and Ocelot

In 2009, an ocelot was documented in Arizona (in Cochise County) with the use of camera traps. Additionally, in 2010, an ocelot was found dead on a road near Globe, Arizona. In 2011 and 2012, an ocelot was again documented in Cochise County. In addition to the recent Arizona sightings, a number of ocelots have been documented just south of the U.S. border in Sonora, Mexico. At least four ocelots have been documented since February 2007 in the Sierra Azul, 30-35 miles southeast of Nogales; and one ocelot was documented in 2009 in the Sierra de Los Ajos, about 30 miles south of the U.S. border near Naco, Mexico. The closest U.S. documented ocelot occurrence from the Susnow allotment is approximately 20 miles west of the allotment.

Recent U.S. ocelot locations are near the action area, especially since one ocelot was known to travel a significant distance (Globe, Arizona). BLM allotments that are scattered in southeastern Arizona may provide dense vegetation for the ocelot, especially for travel between mountain ranges. Some BLM lands may also provide habitat for hunting and hiding.

Jaguars have been documented since 1980 in the action area, from the Peloncillo Mountains west to the Baboquivari Mountains, in Sky Island mountain ranges, and from the International Boundary north to Interstate 10. BLM allotments are scattered in this area. Some of these areas may provide habitat for the jaguar, especially for travel between mountain ranges. Some BLM areas may also provide habitat for prey species. The closest U.S. documented jaguar occurrence to the Susnow allotment is approximately 30 miles northwest of the allotment.

Conservation measures for jaguar and ocelot include minimizing effects related to predator control, providing information regarding exclusion of jaguars or ocelots to predator control, to inform lessees of the potential occurrence of jaguars and ocelots, to maintain dense, low vegetation in riparian corridors, to implement actions that improve conditions of riparian areas, and to report any observations of jaguars and ocelots.

The USFWS concurred with the determination of “may affect, not likely to adversely affect” for jaguar and ocelot (Appendix A of the BO).

Lesser long-nosed bat

The allotment does contain a few sporadic agave plants and may provide foraging habitat for lesser long-nosed bat. Agave is a primary food source for lesser long-nosed bat during the agave flowering period of June – August. All bolted agave stalks appeared to have been successful in flowering, therefore, regeneration and maintenance of lesser long-nosed bat food plants is occurring on the allotment. There has been no construction or maintenance of structures or improvements on the allotment that could affect food plants.

The conservation measures from the 2012 BO for lesser long-nosed bat are given below.

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 affects.
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.”

The following conservation recommendation was given in the BO: 1. Support surveys for lesser long-nosed bats to facilitate better management of lesser long-nosed bats and their habitat.

The USFWS concurred with the determination of “may affect, not likely to adversely affect” for lesser long-nosed bat (Appendix A of the BO). Following are excerpts on the justification from the BO for this determination.

“These [conservation] measures include:

1. Livestock grazing will not disturb or modify roost sites in the action area.
2. Construction and maintenance of livestock management structures and implementation of rangeland improvements will avoid or minimize the damage or destruction of bat food plants within 40 miles of a roost site.
3. Within 40 miles of roost sites, livestock management guidelines and prescriptions will be implemented that facilitate the regeneration and maintenance of bat food plants, including implementing the appropriate drought management policies and managing to meet the standards and guidelines. This includes minimizing damage to bolting agaves, especially in low flowering years.”

“Conclusion

After reviewing the status of the lesser long-nosed bat, the environmental baseline for the action area, and the effects of the proposed action, we concur that the proposed action may affect, but is not likely to adversely affect, the lesser long-nosed bat based upon the following:

1. The known roost sites are not expected to be disturbed or modified by the proposed livestock management because of inaccessibility or distance from actions. The BLM will make necessary management changes to protect any roosts found in the future that are in or near an allotment. Therefore, the effects to roosts are discountable.
2. Effects from the construction and maintenance of structures and improvements to forage plants will be minimal because the BLM will survey before the actions are implemented and minimize effects to forage plants. This will result in relatively few forage plants being affected, and will leave the majority of forage plants in the area unaffected. Therefore the effects are insignificant, and, as a result, will not limit the use of the area for bats. Note: construction and maintenance of structures or improvements are not proposed.
3. Livestock management guidelines and prescriptions will be implemented that facilitate the regeneration and maintenance of bat food plants, including implementation of appropriate drought management policies and managing to meet the standards and guidelines. This includes minimizing damage to bolting agaves, especially in low flowering years, through changes in management, including implementing drought management guidelines and managing to meet the standards and guidelines. These actions may result in some individual plants and bolts being affected in some years, but most foraging plants and bolts will be unharmed, and therefore, the effects are insignificant. Foraging areas will continue to be used by bats.
4. No critical habitat has been designated for these species, so none will be affected.”

BLM Sensitive Species

When BLM engages in the planning process, it shall also address BLM Sensitive Species and their habitats in land use plans and associated NEPA documents (per BLM Land Use Planning Handbook 1601-1, Appendix C, and BLM Manual 6840). Implementation-level planning should consider all site-specific methods and procedures needed to bring species and their habitats to the condition under which management under the BLM Sensitive Species policies would no longer be necessary. All Federal candidate species, proposed species, and delisted species in the five years following delisting will be conserved as BLM Sensitive Species.

The Arizona Game and Fish Department’s On-line Environmental Review Tool was used to determine the occurrence of any BLM Sensitive Species within five miles of the Susnow Allotment (accessed 21 June 2012); these BLM Sensitive Species are included in Appendix 10.3, as well as those BLM Sensitive Species that may have potential habitat in the allotment.

BLM Sensitive Species documented on the Susnow Allotment include the golden eagle. Golden eagle may use the allotment for hunting and migration, but are not known to nest in the close vicinity. Dalhouse spleenwort, Arizona giant sedge, Bartram stonecrop, Texas purple spike, Great Plains narrow-mouthed toad, American peregrine falcon, cave myotis, greater western mastiff bat, and Townsend’s big-eared bat have the potential to occur within the allotment, but have not been documented (Appendix 10.3).

Appendix 10.3 BLM Sensitive Species with potential to occur on the Susnow Allotment.

Common Name	Scientific Name	Habitat
Dalhouse spleenwort	<i>Asplenium dalhousiae</i>	A sky island perennial fern with a rosette of fronds that grows in shady, rocky ravines in moist soil among and at the bases of rocks, in Madrean oak woodland at 4,000 – 6,000 ft (1220-1830 m). A locality found in the Mule Mountains was growing on a northwest facing slope, and appears to be restricted to granitic substrates in southern Arizona. Associated with <i>Dasyllirion</i> (sotol), <i>Garrya</i> (silktassel), <i>Heuchera</i> (alumroot), <i>Pinus</i> (pine), <i>Quercus</i> (oak), and <i>Rubus</i> (blackberry).
Arizona giant sedge	<i>Carex ultra</i>	The largest sedge of southern Arizona; populations often small and widely separated. Found on moist/wet alluvial soil, sand, and gravel near perennially wet springs and streams; undulating rocky-gravelly terrain at 2,040 - 6,000 feet (610-1800 m). Exposure is southeast-facing, often shaded.
Bartram stonecrop	<i>Graptopetalum bartramii</i>	Small succulent perennial with a basal rosette; grows as solitary rosettes or in clumps on ledges or slopes of steep walled canyons and cracks in rocky outcrops in shrub live oak-grassland communities along meandering arroyos on sides of rugged canyons. Usually heavy litter cover and shade where moisture drips from rocks, often with Madrean evergreen woodland at 3,650 - 6,700 ft (1113-2044 m) with north exposure. Dominant associated species include: <i>Agave schottii</i> , <i>Bouteloua curtipendula</i> , <i>Cercocarpus montanus</i> , <i>Choisya mollis</i> , <i>Dasyllirion wheeleri</i> , <i>Fouquieria splendens</i> , <i>Juniperus deppeana</i> , <i>Muhlenbergia</i> spp., <i>Rhus trilobata</i> , and <i>Yucca baccata</i> .
Texas purple spike	<i>Hexalectris warnockii</i>	Purely parasitic, host plant unknown. Can remain underground without emergence for a long time making plant difficult to monitor. Found in humus beneath rocks and fallen oaks along streambeds at 5,000 - 7,000 feet (1525 - 2135 m), in shady canyon bottoms, up slope in oak-mixed conifer leaf litter. Rich humus soil and quartzite. Mixed oak woodland; cover is mostly silverleaf oak with some pines, madrones, and manzanita.
Great Plains narrow-mouthed toad	<i>Gastrophryne olivacea</i>	Mesquite semi-desert grassland to oak woodland, in the vicinity of streams, springs and rain pools. They are more terrestrial than aquatic in habits. They can be found in deep, moist crevices or burrows, often with various rodents, and under large flat rocks, dead wood, and other debris near water. In Arizona, elevation ranges from 1,400 – 4,700 ft (427-1434 m) within Madrean evergreen woodland, semi-desert grassland, and Sonoran Desert scrub.
American peregrine falcon	<i>Falco peregrinus anatum</i>	Discussed in Migratory Bird section.
golden eagle	<i>Aquila chrysaetos</i>	Usually found in open wooded country and barren areas, especially in hilly or mountainous regions. They nest on rock ledges, cliffs or in large trees.
cave myotis	<i>Myotis velifer</i>	Predominantly desertscrub of creosote, brittlebush, palo verde and cacti, but sometimes up to pine-oak communities. Roost in caves, tunnels, mineshafts, under bridges, and sometimes in buildings. Mostly between 300 and 5,000 feet (92 - 1,525 m).
greater western mastiff bat	<i>Eumops perotis californicus</i>	Lower and upper Sonoran desertscrub near cliffs, preferring rugged rocky canyons with abundant crevices. They prefer crowding into tight crevices a foot or more deep and two inches or more wide. Colonies prefer crevices even deeper, to ten or more feet. Considered a year-round resident in Arizona. Whether or not this bat hibernates during winter is unclear. Many roost sites do not seem to be occupied year-round, although they are likely to be occupied periodically. Elevation ranges from 240 – 8,475 ft. (73 - 2583 m).

Common Name	Scientific Name	Habitat
Townsend's big-eared bat	<i>Corynorhinus townsendii</i>	Desertscrub, oak woodland, oak/pine, pinyon/juniper, and coniferous forests. In Arizona, summer day roosts are found in caves and mines from desertscrub up to woodlands and coniferous forests. Night roosts may often be in abandoned buildings. Elevation ranges between 550 and 8,437 feet (168 - 5272 m). Most records range above 3,000 feet (915 m).

Appendix 10.4 Bird Species of Conservation Concern within the Sierra Madre Occidental region (BCR 34).

Sierra Madre Occidental (BCR 34)
Bald Eagle (b)
Common Black-Hawk
Peregrine Falcon (b)
Mountain Plover (nb)
Yellow-billed Cuckoo (w. U.S. DPS) (a)
Flammulated Owl
Elf Owl
Blue-throated Hummingbird
Elegant Trogon
Lewis's Woodpecker
Arizona Woodpecker
Northern Beardless-Tyrannulet
Buff-breasted Flycatcher
Rose-throated Becard
Bell's Vireo (c)
Gray Vireo
Pinyon Jay
Bendire's Thrasher
Sprague's Pipit (nb)
Phainopepla
Olive Warbler
Lucy's Warbler
Yellow Warbler (sonorana ssp.)
Black-throated Gray Warbler
Grace's Warbler
Red-faced Warbler
Canyon Towhee
Rufous-winged Sparrow
Botteri's Sparrow
Five-striped Sparrow
Black-chinned Sparrow
Lark Bunting (nb)
Grasshopper Sparrow (nb)
Grasshopper Sparrow (ammolegus ssp.)
Baird's Sparrow (nb)
Chestnut-collared Longspur (nb)
Varied Bunting

- (a) ESA candidate, (b) ESA delisted, (c) non-listed subspecies or population of Threatened or Endangered species, (nb) non-breeding in this BCR

Appendix 10.5 Arizona Standards for Rangeland Health and Guidelines for Grazing Administration
INTRODUCTION

The Department of the Interior's final rule for Grazing Administration, issued on February 22, 1995, and effective August 21, 1995, requires that Bureau of Land Management (BLM) State Directors develop State or regional standards and guidelines for grazing administration in consultation with BLM Resource Advisory Councils (RAC), other agencies and the public. The final rule provides that fallback standards and guidelines be implemented, if State standards and guidelines are not developed by February 12, 1997. Arizona Standards and Guidelines and the final rule apply to grazing administration on public lands as indicated by the following quotation from the Federal Register, Volume 60, Number 35, page 9955.

"The fundamentals of rangeland health, guiding principles for standards and the fallback standards address ecological components that are affected by all uses of public rangelands, not just livestock grazing. However, the scope of this final rule, and therefore the fundamentals of rangeland health of §4180.1, and the standards and guidelines to be made effective under §4180.2, are limited to grazing administration."

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 by 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.

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.

The following quotations from the Federal Register, Vol. 60, No. 35, page 9956, February 22, 1995, describe the purpose of standards and guidelines and their implementation:

"The guiding principles for standards and guidelines require that State or regional standards and guidelines address the basic components of healthy rangelands. The Department believes that by implementing grazing-related actions that are consistent with the fundamentals of §4180.1 and the guiding principles of §4180.2, the long-term health of public rangelands can be ensured.

"Standards and guidelines will be implemented through terms and conditions of grazing permits, leases, and other authorizations, grazing-related portions of activity plans (including Allotment Management Plans), and through range improvement-related activities.

"The Department anticipates that in most cases the standards and guidelines themselves will not be terms and conditions of various authorizations but that the terms and conditions will reflect the standards and guidelines.

"The Department intends that assessments and corrective actions will be undertaken Appendix 1-2 2

in priority order as determined by BLM.

"The Department will use a variety of data including monitoring records, assessments, and knowledge of the locale to assist in making the "significant progress" determination. It is anticipated that in many cases it will take numerous grazing seasons to determine direction and magnitude of trend. However, actions will be taken to establish significant progress toward conformance as soon as sufficient data are available to make informed changes in grazing practices."

FUNDAMENTALS AND DEFINITION OF RANGELAND HEALTH

The Grazing Administration Regulations, at §4180.1 (43 Code of Federal Regulation [CFR] 4180.1), Federal Register Vol. 60, No. 35, pg. 9970, direct that the authorized officer ensures that the following conditions of rangeland health exist:

- (a) Watersheds are in, or are making significant progress toward, properly functioning physical condition, including their upland, riparian-wetland, and aquatic components; soil and plant conditions support infiltration, soil moisture storage, and the release of water that are in balance with climate and landform and maintain or improve water quality, water quantity, and timing and duration of flow.
- (b) Ecological processes, including the hydrologic cycle, nutrient cycle, and energy flow, are maintained, or there is significant progress toward their attainment, in order to support healthy biotic populations and communities.
- (c) Water quality complies with State water quality standards and achieves, or is making significant progress toward achieving, established BLM management objectives such as meeting wildlife needs.
- (d) Habitats are, or are making significant progress toward being, restored or maintained for Federal threatened and endangered species, Federal Proposed, Category 1 and 2 Federal candidate and other special status species.

These fundamentals focus on sustaining productivity of a rangeland rather than its uses. Emphasizing the physical and biological functioning of ecosystems to determine rangeland health is consistent with the definition of rangeland health as proposed by the Committee on Rangeland Classification, Board of Agriculture, National Research Council (Rangeland Health,

1994, pg. 4 and 5). This Committee defined Rangeland Health ". . . as the degree to which the integrity of the soil and the ecological processes of rangeland ecosystems are sustained." This committee emphasized ". . . the degree of integrity of the soil and ecological processes that are most important in sustaining the capacity of rangelands to satisfy values and produce commodities." The Committee also recommended that "The determination of whether a rangeland is healthy, at risk, or unhealthy should be based on the evaluation of three criteria: degree of soil stability and watershed function, integrity of nutrient cycles and energy flow, and presence of functioning mechanisms" (Rangeland Health, 1994, pg. 97-98).

Standards describe conditions necessary to encourage proper functioning of ecological processes on specific ecological sites. An ecological site is the logical and practical ecosystem unit upon which to base an interpretation of rangeland health. Ecological site is defined as: ". . . a kind of land with specific physical characteristics which differs from other kinds of land in its Appendix 1-3 3

ability to produce distinctive kinds and amounts of vegetation and in its response to management" (Journal of Range Management, 48:279, 1995). Ecological sites result from the interaction of climate, soils, and landform (slope, topographic position). The importance of this concept is that the "health" of different kinds of rangeland must be judged by standards specific to the potential of the ecological site. Acceptable erosion rates, water quality, productivity of plants and animals, and other features are different on each ecological site.

Since there is wide variation of ecological sites in Arizona, standards and guidelines covering these sites must be general. To make standards and guidelines too specific would reduce the ability of BLM and interested publics to select specific objectives, monitoring strategies, and grazing lease terms and conditions appropriate to specific land forms.

Ecological sites have the potential to support several different plant communities. Existing communities are the result of the combination of historical and recent uses and natural events. Management actions may be used to modify plant communities on a site. The desired plant community for a site is defined as follows: "Of the several plant communities that may occupy a site, the one that has been identified through a management plan to best meet the plan's objectives for the site. It must protect the site as a minimum." (Journal of Range Management, 48:279, 1995.)

Fundamentals (a) and (b) define physical and biological components of rangeland health and are consistent with the definition of rangeland health as defined by the Committee on Rangeland Classification, Board on Agriculture, National Research Council, as discussed in the paragraph above. These fundamentals provide the basis for sustainable rangelands.

Fundamentals (c) and (d) emphasize compliance with existing laws and regulation and, therefore, define social and political components of rangeland health. Compliance with Fundamentals (c) and

(d) is accomplished by managing to attain a specific plant community and associated wildlife species present on ecological sites. These desired plant communities are determined in the BLM planning process, or, where the desired plant community is not identified, a community may be selected that will meet the conditions of Fundamentals (a) and (b) and also adhere to laws and regulations. Arizona Standard 3 is written to comply with Fundamentals (c) and (d) and provide a logical combination of Standards and Guidelines for planning and management purposes.

STANDARD AND GUIDELINE DEFINITIONS

Standards are goals for the desired condition of the biological and physical components and characteristics of rangelands. Standards:

- (1) are measurable and attainable; and
- (2) comply with various Federal and State statutes, policies, and directives applicable to BLM Rangelands.

Guidelines are management approaches, methods, and practices that are intended to achieve a standard. Guidelines:

- (1) typically identify and prescribe methods of influencing or controlling specific public land uses;
- (2) are developed and applied consistent with the desired condition and within site capability; and
- (3) may be adjusted over time.

Appendix 1-4 4

IMPLEMENTING STANDARDS AND GUIDELINES

The authorized officer will review existing permitted livestock use, allotment management plans, or other activity plans which identify terms and conditions for management on public land. Existing management practices, and levels of use on grazing allotments will be reviewed and evaluated on a priority basis to determine if they meet, or are making significant progress toward meeting, the standards and are in conformance with the guidelines. The review will be interdisciplinary and conducted under existing rules which provide for cooperation, coordination, and consultation with affected individuals, federal, state, and local agencies, tribal governments, private landowners, and interested publics.

This review will use a variety of data, including monitoring records, assessments, and knowledge of the locale to assist in making the significant progress determination. Significance will be determined on a case by case basis, considering site potential, site condition, weather and financial commitment. It is anticipated there will be cases where numerous years will be needed to determine direction and magnitude of trend.

Upon completion of review, the authorized officer shall take appropriate action as soon as practicable but no later than the start of the next grazing year upon determining that the existing grazing management practices or level of use on public land are significant factors contributing to failure to achieve the standards and conform with the guidelines that are made effective under 43 CFR 4180.2. Appropriate action means implementing actions that will result in significant progress toward fulfillment of the standards and significant progress toward conformance with guidelines.

Livestock grazing will continue where significant progress toward meeting standards is being made. Additional activities and practices would not be needed on such allotments. Where new activities or practices are required to assure significant progress toward meeting standards, livestock grazing use can continue contingent upon determinations from monitoring data that the implemented actions are effective in making significant progress toward meeting the standards. In some cases, additional action may be needed as determined by monitoring data over time.

New plans will incorporate an interdisciplinary team approach (Arizona BLM Interdisciplinary Resource Management Handbook, April 1995). The terms and conditions for permitted grazing in these areas will be developed to comply with the goals and objectives of these plans which will be consistent with the standards and guidelines.

Appendix 1-5 5

ARIZONA STANDARDS AND GUIDELINES

Arizona Standards and Guidelines (S&G) for grazing administration have been developed through a collaborative process involving the Bureau of Land Management State S&G Team and the Arizona Resource Advisory Council. Together, through meetings, conference calls, correspondence, and Open Houses with the public, the BLM State Team and RAC prepared Standards and Guidelines to address the minimum requirements outlined in the grazing regulations. The Standards and Guidelines, criteria for meeting Standards, and indicators are an integrated document that conforms to the fundamentals of rangeland health and the requirements of the regulations when taken as a whole.

Upland sites, riparian-wetland areas, and desired resource conditions are each addressed by a standard and associated guidelines.

Standard 1: Upland Sites

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

Criteria for meeting Standard 1:

Soil conditions support proper functioning of hydrologic, energy, and nutrient cycles. Many factors interact to maintain stable soils and healthy soil conditions, including appropriate amounts of vegetative cover, litter, and soil porosity and organic matter. Under proper functioning conditions, rates of soil loss and infiltration are consistent with the potential of the site.

Ground cover in the form of plants, litter or rock is present in pattern, kind, and amount sufficient to prevent accelerated erosion for the ecological site; or ground cover is increasing as determined by monitoring over an established period of time.

Signs of accelerated erosion are minimal or diminishing for the ecological site as determined by monitoring over an established period of time.

As indicated by such factors as:

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

C Signs of erosion C flow pattern C gullies C rills C plant pedestaling

Exceptions and exemptions (where applicable): Appendix 1-6 6

C none

Guidelines:

1-1. Management activities will maintain or promote ground cover that will provide for infiltration, permeability, soil moisture storage, and soil stability appropriate for the ecological sites within management units. The ground cover should maintain soil organisms and plants and animals to support the hydrologic and nutrient cycles, and energy flow. Ground cover and signs of erosion are surrogate measures for hydrologic and nutrient cycles and energy flow.

1-2. When grazing practices alone are not likely to restore areas of low infiltration or permeability, land management treatments may be designed and implemented to attain improvement.

Standard 2: Riparian-Wetland Sites

Riparian-wetland areas are in properly functioning condition.

Criteria for meeting Standard 2:

Stream channel morphology and functions are appropriate for proper functioning condition for existing climate, landform, and channel reach characteristics. Riparian-wetland areas are functioning properly when adequate vegetation, land form, or large woody debris is present to dissipate stream energy associated with high water flows.

Riparian-wetland functioning condition assessments are based on examination of hydrologic, vegetative, soil and erosion-deposition factors. BLM has developed a standard checklist to address these factors and make functional assessments. Riparian-wetland areas are functioning properly as indicated by the results of the application of the appropriate checklist.

The checklist for riparian areas is in Technical Reference 1737-9 "Process for Assessing Proper Functioning Condition." The checklist for wetlands is in Technical Reference 173711 "Process for Assessing Proper Functioning Condition for Lentic Riparian-Wetland Areas." These checklists are reprinted on the pages following the Guidelines for Standard 3.

As indicated by such factors as:

C Gradient C Width/depth ratio C Channel roughness and sinuosity of stream channel C Bank stabilization C Reduced erosion C Captured sediment C Ground-water recharge C Dissipation of energy by vegetation

Exceptions and exemptions (where applicable):

C Dirt tanks, wells, and other water facilities constructed or placed at a location for the purpose of providing water for livestock and/or wildlife and which have not been Appendix 1-7 7

determined through local planning efforts to provide for riparian or wetland habitat are exempt.

C Water impoundments permitted for construction, mining, or other similar activities are exempt.

Guidelines:

2-1. Management practices maintain or promote sufficient vegetation to maintain, improve or restore riparian-wetland functions of energy dissipation, sediment capture, groundwater recharge and stream bank stability, thus promoting stream channel morphology (e.g., gradient, width/depth ratio, channel roughness and sinuosity) and functions appropriate to climate and landform.

2-2. New facilities are located away from riparian-wetland areas if they conflict with achieving or maintaining riparian-wetland function. Existing facilities are used in a way that does not conflict with riparian-wetland functions or are relocated or modified when incompatible with riparian-wetland functions.

2-3. The development of springs and seeps or other projects affecting water and associated resources shall be designed to protect ecological functions and processes.

Standard 3: Desired Resource Conditions

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

Criteria for meeting Standard 3:

Upland and riparian-wetland plant communities meet desired plant community objectives. Plant community objectives are determined with consideration for all multiple uses. Objectives also address native species, and the requirements of the Taylor Grazing Act, Federal Land Policy and Management Act, Endangered Species Act, Clean Water Act, and appropriate laws, regulations, and policies.

Desired plant community objectives will be developed to assure that soil conditions and ecosystem function described in Standards 1 and 2 are met. They detail a site-specific plant community, which when obtained, will assure rangeland health, State water quality standards, and habitat for endangered, threatened, and sensitive species. Thus, desired plant community objectives will be used as an indicator of ecosystem function and rangeland health.

As indicated by such factors as:

C Composition

C Structure C Distribution

Exceptions and exemptions (where applicable):

C Ecological sites or stream reaches on which a change in existing vegetation is physically, Appendix 1-8 8

biologically, or economically impractical.

Guidelines:

3-1. The use and perpetuation of native species will be emphasized. However, when restoring or rehabilitating disturbed or degraded rangelands, non-intrusive, non-native plant species are appropriate for use where native species (a) are not available, (b) are not economically feasible, (c) cannot achieve ecological objectives as well as non-native species, and/or (d) cannot compete with already established non-native species.

3-2. Conservation of Federal threatened or endangered, proposed, candidate, and other special status species is promoted by the maintenance or restoration of their habitats.

3-3. Management practices maintain, restore, or enhance water quality in conformance with State or Federal standards.

3-4. Intensity, season and frequency of use, and distribution of grazing use should provide for growth and reproduction of those plant species needed to reach desired plant community objectives.

3-5. Grazing on designated ephemeral (annual and perennial) rangeland may be authorized if the following conditions are met:

C ephemeral vegetation is present in draws, washes, and under shrubs and has grown to useable levels at the time grazing begins;

C sufficient surface and subsurface soil moisture exists for continued plant growth;

C serviceable waters are capable of providing for proper grazing distribution;

C sufficient annual vegetation will remain on site to satisfy other resource concerns, (i.e., watershed, wildlife, wild horses and burros); and

C monitoring is conducted during grazing to determine if objectives are being met.

3-6. Management practices will target those populations of noxious weeds which can be controlled or eliminated by approved methods.

3-7. Management practices to achieve desired plant communities will consider protection and conservation of known cultural resources, including historical sites, and prehistoric sites and plants of significance to Native American peoples.