

Medford Bureau of Land Management
3040 Biddle Road
Medford, Oregon 97501

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Foots Creek Allotment –
STANDARDS OF RANGELAND HEALTH ANALYSIS



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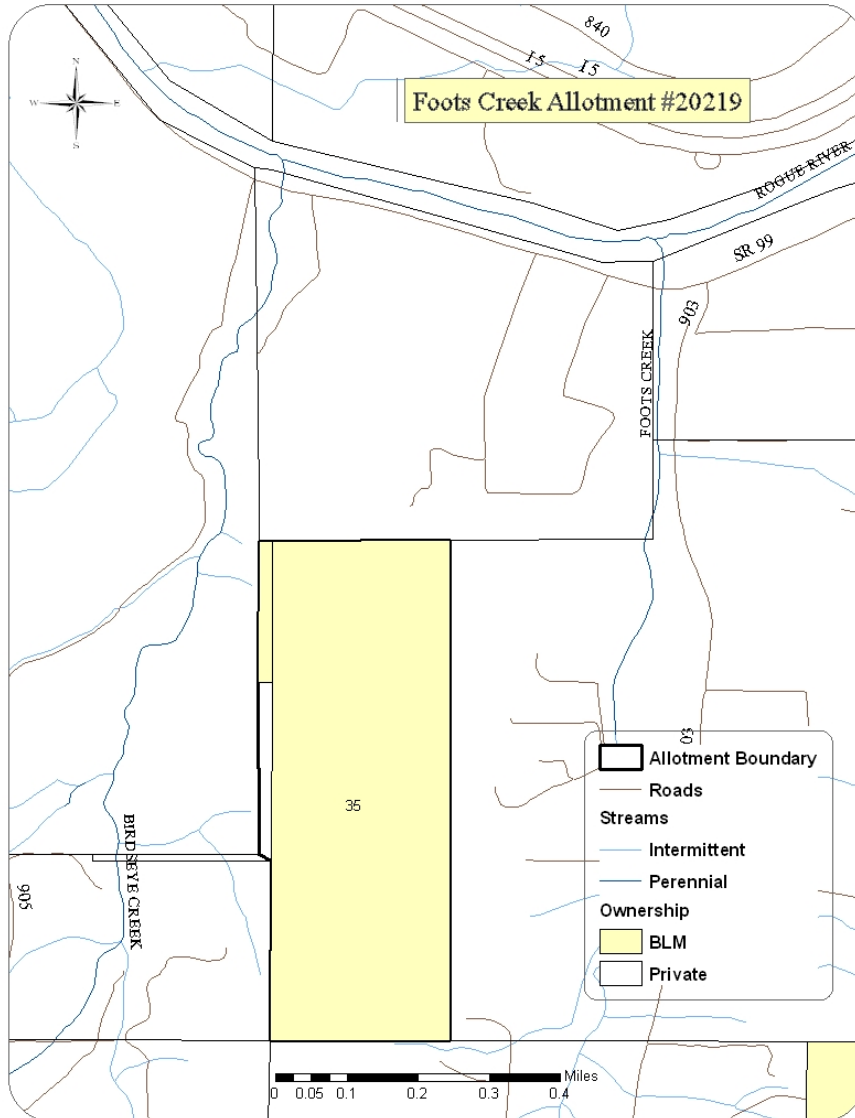
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INTRODUCTION

This is an Oregon/Washington Bureau of Land Management (BLM) Standards of Rangeland Health Evaluation that addresses the Footh Creek Allotment (20219). The analysis area is 115 acres with 6 cows permitted from May 1-June 30, totaling 12 Animal Unit Months (AUMs).

Map 1- Footh Creek Allotment map



Vegetation

The vegetation in this allotment is predominately a mosaic of (*Ceanothus cuneatus*), Oregon white oak (*Quercus garryana*) woodland with Pacific madrone (*Arbutus menziesii*) on the northern slopes. Birchleaf mountain mahogany (*Cercocarpus montanus*), Ponderosa pine (*Pinus ponderosa*), and Pacific poison oak (*Toxicodendron diversilobum*) are also components of the plant community on the Footh Creek Allotment. Native grasses, including needlegrass (*Achnatherum sp.*), and California oatgrass (*Danthonia californica*) grow in the open areas and Oregon white oak understory. Species such as tall fescue (*Festuca arundinacea*), blue wildrye (*Elymus*

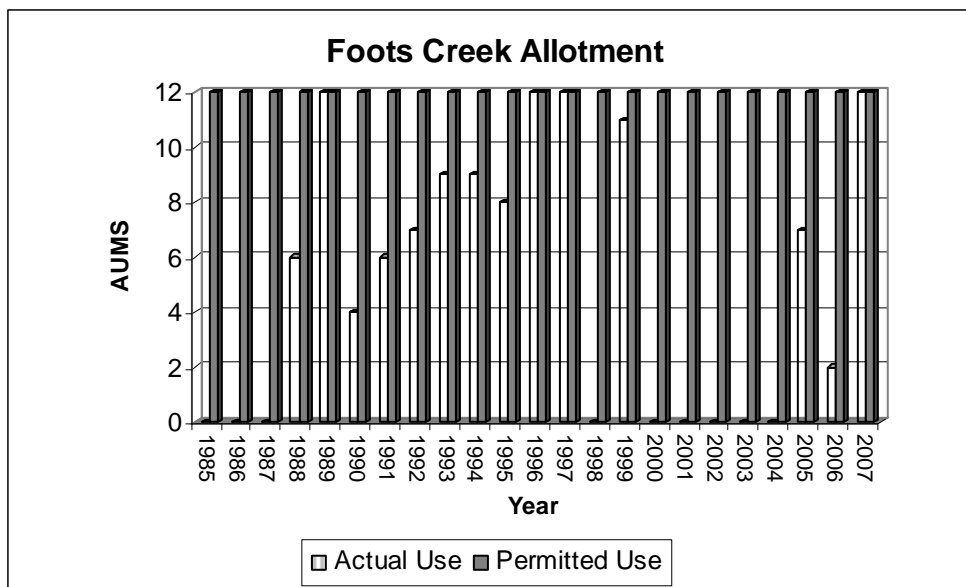
glaucus), and California brome (*Bromus carinatus*) grow in the denser understory of Pacific madrone and Ponderosa pine, depending on local conditions of soil, topography, and shade. Forb species such as shooting star (*Dodecatheon hendersonii*), deltoid balsamroot (*Balsamorhiza deltoidea*), Klamath fawnlily (*Erythronium klamathehense*), Menzies' larkspur (*Delphinium menziesii*), (western buttercup) (*Ranunculus occidentalis*), common lomatium (*Lomatium utriculatum*), and scarlet fritillaria (*Fritillaria recurva*) are common throughout the allotment. Annual and short-lived perennial weedy grasses, including medusahead (*Taeniatherum caput-medusae*) and bristly dogstail (*cynosurus echinatus*), grow throughout the allotment.

Soils

Soils identified in the area are the Vannoy and Voorhies series. The soils are found mainly on a southerly aspect with topography ranging from 12 to 55 percent. The Vannoy soil is moderately deep, well drained soil is on hillslopes. It formed in colluvium derived dominantly from metamorphic rock. Permeability is moderately slow in the Vannoy soil. Available water capacity is about 5 inches. The effective rooting depth is 20 to 40 inches. Runoff is medium, and the hazard of water erosion is moderate.

The Voorhies soil is moderately deep and well drained. It formed in colluvium derived dominantly from metamorphic rock. Permeability is moderate in the Voorhies soil. Available water capacity is about 3 inches. The effective rooting depth is 20 to 40 inches. Runoff is rapid, and the hazard of water erosion is high.

Figure 1. Actual Use Data



ASSESSMENT

Rangeland Health Assessments are required on each allotment prior to consideration of grazing lease renewal. These assessments are conducted by an interdisciplinary team of resource specialists who assess ecological processes, watershed functioning condition, water quality conditions, special status species, and wildlife habitat conditions on an allotment. Assessments include field visits to the allotments and evaluation of all available data. All available data will be used to make an overall assessment of rangeland health as described in the *Standards for Rangeland Health and Guidelines and Livestock Grazing Management for Public Lands Administered by the Bureau of Land Management in the States of Oregon and Washington* (Standards and Guidelines) (USDI 1997), in light of the Fundamentals of Rangeland Health at 43 CFR § 4180.1.

The Standards and Guidelines identify five specific standards that are used to determine the degree to which “ecological function and process exist within each ecosystem.” Standards address the health, productivity, and sustainability of the BLM-administered public rangelands and represent the minimum acceptable conditions for the public rangelands. The guidelines are management practices that will either maintain existing desirable conditions or move rangelands toward statewide standards within reasonable timeframes.

This assessment summarizes existing resource conditions on the Foothills Creek Allotment using information derived from rangeland field assessments; BLM monitoring data; and all other available data in relation to the five specific standards described in the Standards and Guidelines (USDI 1997).

Primary Supporting Data:

Rangeland Health Field Assessments: Field assessments using the protocol described in *Technical Reference 1734-6: Interpreting the Indicators of Rangeland Health* (USDI and USDA 2005) were conducted June 30, 2008 at an ecological site mapped as a pine-Douglas fir-fescue on the Foothills Creek Allotment.

Botany Surveys: Botany Surveys were conducted on the Foothills Creek Allotment in 2006 and 2008 using the Intuitive Controlled Survey. This method includes a complete survey in habitats with the highest potential for locating Survey and Manage species. The surveyor traverses through the project area enough to see a representative cross section of all the major habitats and topographic features, looking for the target species while en route between different areas. Most of the project area will have been surveyed. When the surveyor arrives at an area of high potential habitat (that was defined in the pre-field review or encountered during the field visit), a complete survey for the target species was made.

Standard 1 Watershed Function - Uplands

To meet this standard, upland soils exhibit infiltration and permeability rates, moisture storage, and stability that are appropriate to soil, climate, and landform.

This standard focuses on the basic physical functions of upland soils that support plant growth, the maintenance or development of plant populations and communities, and promote dependable flows of quality water from the watershed.

To achieve and sustain rangeland health, watersheds must function properly. Watersheds consist of three principle components: the uplands, riparian/wetland areas and the aquatic zone. This standard addresses the upland component of the watershed. When functioning properly, within its potential, a watershed captures, stores and safely releases the moisture associated with normal precipitation events (equal to or less than the 25 year, 5 hour event) that falls within its boundaries. Uplands make up the largest part of the watershed and are where most of the moisture received during precipitation events is captured and stored.

While all watersheds consist of similar components and processes, each is unique in its individual makeup. Each watershed displays its own pattern of landform and soil, its unique climate and weather patterns, and its own history of use and current condition. In directing management toward achieving this standard, it is essential to treat each unit of the landscape (soil, ecological site, and watershed) according to its own capability and how it fits with both smaller and larger units of the landscape.

A Rangeland Health Field Assessment (RHFA) was conducted on the allotment at a pine-Douglas fir-fescue ecological site in June of 2008. Looking only at indicators pertaining to Soil/Site Stability revealed that all of the 10 indicators were rated none to slight, and none of the indicators were rated, slight to moderate, moderate, moderate

to extreme, or an extreme to total departure.

Standard 2 Watershed Function - Riparian/Wetland Areas

To meet this standard, riparian-wetland areas are in properly functioning physical condition appropriate to soil, climate, and landform.

Riparian-wetland areas are grouped into two major categories: 1. lentic, or standing water systems such as lakes, ponds, seeps, bogs, and meadows; and 2. lotic, or moving water systems such as rivers, streams, and springs. Wetlands are areas that are inundated or saturated by surface or ground water at a frequency and duration to support, and which under normal circumstances do support, a prevalence of vegetation typically adapted to life in saturated soil conditions. Riparian areas commonly occupy the transition zone between the uplands and surface water bodies (the aquatic zone) or permanently saturated wetlands.

Properly functioning condition of riparian and wetland areas describes the degree of physical function of these components of the watershed. Their functionality is important to water quality in the capture and retention of sediment and debris, the detention and detoxification of pollutants, and in moderating seasonal extremes of water temperature. Properly functioning riparian areas and wetlands enhance the timing and duration of stream flow through dissipation of flood energy, improved bank storage, and ground water recharge. Properly functioning condition should not be confused with the Desired Plant Community (DPC) or the Desired Future Condition (DFC) since, in most cases, it is the precursor to these levels of resource condition and is required for their attainment.

This allotment is comprised of upland habitat and as such this standard does not apply. There are no riparian or wetlands present. Stream surveys in the Birdseye and Foothills Creek drainages identified approximately 1 mile of dry draws in the Foothills Creek allotment (BLM 2001). Surveyors did not document any areas of over utilization or damage from cattle in these dry draws.

Standard 3 Ecological Processes

To meet this standard, healthy, productive, and diverse plant and animal populations and communities appropriate to soil, climate, and landform are supported by ecological processes of nutrient cycling, energy flow and the hydrologic cycle.

This standard addresses the ecological processes of energy flow and nutrient cycling as influenced by existing plant and animal communities. While emphasis may be on native species, an ecological site may be capable of supporting a number of different native and introduced plant and animal populations and communities while meeting this standard. This standard also addresses the hydrologic cycle which is essential for plant growth and appropriate levels of energy flow and nutrient cycling.

The ability of plants to capture sunlight energy, to grow and develop, plays a role in soil development and watershed function. Nutrients necessary for plant growth are made available to plants through the decomposition and metabolization of organic matter by insects, bacteria and fungi, the weathering of rocks and extraction from the atmosphere. Nutrients are transported through the soil by plant uptake, leaching and by rodent, insect and microbial activity. They follow cyclical patterns as they are used and reused by living organisms.

The ability of rangelands to provide habitat for wildlife and satisfy social and economic needs depends on the buildup and cycling of nutrients over time. Interrupting or slowing nutrient cycling can lead to site degradation, as these lands become increasingly deficient in the nutrients plants require.

Some plant communities, because of past livestock use, fire frequency, or other past extreme or continued disturbances, are incapable of meeting this standard. For example, shallow-rooted winter-annual grasses that completely dominate some sites do not fully occupy the potential rooting depth of some soils, thereby reducing nutrient cycling well below optimum levels. In addition, these plants have a relatively short growth period and thus capture less sunlight than more diverse plant communities. Plant communities like those cited in this example are considered to have crossed the threshold of recovery and often require great expense to be recovered. The cost of recovery must be weighed against the site's potential ecological/economic value in establishing treatment priorities.

There is a healthy mix of live and dead/decaying matter on the rangeland and the energy, nutrient, and hydrologic cycles are balanced, utilization is low enough to not disrupt these cycles. The dry meadows and oak woodland plant communities support a diverse mix of plant species. However, invasive annual grass species are scattered in patches throughout the allotment. In addition to reducing habitat quality for wildlife, annual grasses have shallower root systems and shorter life cycles than native perennial grasses, and thus have reduced capacity to hold the soil and retain water and nutrients. Introduction and establishment of exotic annual grasses occurred in past decades, and current livestock grazing is not intense enough to contribute to additional conversion of native plant communities to exotic annual grasslands.

Standard 4 Water Quality

To meet this standard, surface water and groundwater quality, influenced by agency actions, complies with State water quality standards.

The quality of the water yielded by a watershed is determined by the physical and chemical properties of the geology and soils unique to the watershed, the prevailing climate and weather patterns, current resource conditions, the uses to which the land is put and the quality of the management of those uses. Standards 1, 2 and 3 contribute to attaining this standard.

States are legally required to establish water quality standards and Federal land management agencies are to comply with those standards. In mixed ownership watersheds, agencies, like any other land owners, have limited influence on the quality of the water yielded by the watershed. The actions taken by the agency will contribute to meeting State water quality standards during the period that water crosses agency administered holdings.

Riparian plant community structure influences water quality by shading, thus maintaining lower water temperature. Repeat photos show a general improvement in lotic riparian plant community structure, albeit at a slower rate than change within exclosures.

This standard is not applicable to the Foothills Creek Allotment because the allotment consists entirely of uplands. There are no stream reaches present. Foothills Creek allotment does however, occupy the uplands of two drainages: Birdseye Creek and Foothills Creek. The Oregon Department of Environmental Quality (DEQ) is required by the federal Clean Water Act (CWA) to maintain a list of stream segments that do not meet water quality standards for one or more beneficial uses. This list is called the 303(d) list because of the section of the CWA that makes the requirement. DEQ's 2004/2006 303(d) list is the most recent listing of these streams (ODEQ 2006a). Birdseye Creek is currently listed as a water quality limited stream under §303d of the Clean Water Act for water temperature. However, the lands surrounding Birdseye Creek, as well as Foothills Creek, remain in predominately private ownership with small scale agricultural activity, and impacts on water quality would occur there.

Standard 5 Native, T&E, and Locally Important Species

To meet this standard, habitats support healthy, productive, and diverse populations and communities of native plants and animals (including special status species and species of local importance) appropriate to soil, climate, and landform.

Federal agencies are mandated to protect threatened and endangered species and will take appropriate action to avoid the listing of any species. This standard focuses on retaining and restoring native plant and animal (including fish) species, populations and communities (including threatened, endangered and other special status species and species of local importance). In meeting the standard, native plant communities and animal habitats would be spatially distributed across the landscape with a density and frequency of species suitable to ensure reproductive capability and sustainability. Plant populations and communities would exhibit a range of age classes necessary to sustain recruitment and mortality fluctuations. The plant communities on this allotment are floristically diverse, healthy, and support a wide variety of animal species consistent with the surrounding soil, landscape and climate.

Species are recognized as "special status" if they are federally listed as threatened or endangered, proposed or a candidate for federal listing as threatened or endangered, or if they are a BLM sensitive or assessment species. BLM policy is to manage for the conservation of these species and their habitat so as not to contribute to the need to list and to recover these species.

Bureau Special Status wildlife:

The diverse plant communities that support wildlife in the allotment are influenced by the Siskiyou range of the Klamath Mountains. The Klamath Mountains remained unglaciated after the Pleistocene epoch and served as a refuge for many plant and animal species. The Klamath Mountains contain some of the highest biodiversity and number of endemic species in North America. Table 1 below lists some of the representative plant communities associated with the Inland Siskiyou sub-ecoregion (Thorson et al., 2003) encompassing the allotment.

Table 1. *Plant communities in the Foothills Creek allotment*

Ecoregion	Sub-Ecoregion	Representative Plant Communities
Klamath Mountains	Forested Inland Siskiyou	Mixed Douglas-Fir/Ponderosa Pine/ Oregon White Oak and Madrone. Oak woodland. Common understory of buck brush (<i>ceanothus</i>), mountain mahogany and Pacific poison oak.

The signs of grazing were almost nonexistent in the Foothills Creek Allotment. It could not be discerned whether the light browse was from deer or cattle. Although very limited in this allotment, livestock grazing can primarily affect wildlife by changing vegetation composition, structure, and function. Grazing can result in a reduction of forage available to native herbivores (e.g. deer and elk), as well as reductions in vegetative ground cover for ground-nesting birds, rodents, and other wildlife species dependent on ground cover for protection, food, and breeding sites. Grazing also reduces water quality in seeps, springs, and streams used by native wildlife. The presence of livestock can also change local distribution and habitat use by native species due to interspecific behavioral traits. Generally, the extent of impacts to individual T&E species and their habitats are unknown.

Special Status species that are known or suspected to occur in the allotment are listed in Table 2.

Table 2. Special Status Species (Terrestrial Wildlife)

Species	Status
bald eagle (<i>Haliaeetus leucocephalus</i>)	BS
Lewis' woodpecker (<i>Melanerpes lewis</i>)	BS
pallid bat (<i>Antrozous pallidus</i>)	BS
fringed myotis (<i>Myotis thysanodes</i>)	BS
Johnson's Hairstreak (<i>Callophrys johnsoni</i>)	BS
traveling sideband (<i>Monadenia fidelis celuthia</i>)	BS

BS - Bureau Sensitive

BLM recently issued interim guidance for meeting BLM's responsibilities under the Migratory Bird Treaty Act and Executive Order (EO) 13186. Both the Act and the EO promote the conservation of migratory bird populations. The interim guidance was transmitted through Instruction Memorandum (IM) No. 2008-050. The IM relies on two lists prepared by the U.S. Fish and Wildlife Service in determining which species are to receive special attention in land management activities. The lists are *Bird Species of Conservation Concern* (BCC) found in various Bird Conservation Regions and *Game Birds Below Desired Condition* (GBBDC). Table 3 displays those species that are known or likely to present on the allotment.

Table 3. Bird Species of Conservation Concern

Species	Species Status
black-throated gray warbler (<i>Dendroica nigrescens</i>)	BCC
flamulated owl (<i>Otus flammeolus</i>)	BCC
olive-sided flycatcher (<i>Contopus cooperi</i>)	BCC
rufous hummingbird (<i>Selasphorus rufus</i>)	BCC
mourning dove (<i>Zenaida macroura</i>)	GBBDC
band-tailed pigeon (<i>Columba fasciata</i>)	GBBDC

BCC – Birds of Conservation Concern

GBBDC – Game Birds Below Desired Condition

Wildlife Species Not Negatively Affected By Grazing

Some of the special status species found in the allotment are not greatly affected by grazing. The suite of species that would not be affected or affected only to a negligible degree includes the following: **bald eagle, black-throated gray warbler, flamulated owl, Lewis's woodpecker, olive-sided flycatcher, mourning dove, pallid bat, fringed myotis** and **Johnson's hairstreak**. Grazing has little or no impacts on these species because it does not physically reduce their numbers nor does it reduce feeding, breeding and sheltering opportunities. These species are primarily associated with the mixed oak-conifer community except for Lewis's woodpecker which is more closely associated with the lower oak woodland community.

Wildlife Species That May Be Affected By Grazing

Some species of special interest are susceptible to the physical aspects of grazing, e.g., trampling, while other species are sensitive to the removal of forage that is required for feeding or breeding.

The **traveling side-band** (snail) is very uncommon in the Foots Creek drainage. Although thought to normally occur east of the Rogue Valley, large scale surveys (2163 acres) in the drainage documented 4 suspected specimens. Due to the extreme difficulty in identifying this species, the BLM is treating them known but suspected locations. The closest location to the allotment is over 1 mile away. There is minimal suitable habitat in the allotment and a remote chance that they exist here. Grazing can impact this species from removal of ground

cover that serves as refugia and through direct mortality by trampling.

The **rufous hummingbird** can be affected by grazing due to the removal of plants and degradation of shrubs used for nectaring. Any adverse effects of grazing in this small allotment would be minimal because of the very light grazing pressure that occurs.

The **band-tailed pigeon's** diet consists of seeds and nuts, which they often forage for on the ground. Food availability apparently greatly influences breeding and flock movements, heavily grazed areas can have detrimental effects by removal of forage that provides these food sources (Gutierrez et al. 1975).

Grazing has little influence on hiding and thermal cover conditions for **deer and elk**, but it can affect forage conditions. There is some diet overlap between livestock and deer with greater overlap of preferred forage between livestock and elk. The effect of grazing in this allotment will have minimal impact to deer and elk. This is a low elevation allotment and is not affected by heavy snowfalls. The fall season green-up and its proximity to the agricultural fields on the valley floor should be sufficient to sustain these ungulates through the winter.

Big Game Winter Range Area:

This allotment is not within a Big Game Winter Range Area as designated in the Medford District RMP (USDI BLM, 1995). High quality forage is important to both deer and elk, especially during the winter. Forage conditions are declining in areas inhabited by introduced noxious herbaceous species, such as yellow star thistle, bristly dogtail, and medusa head, these species displace native grasses and herbs which generally provide high quality forage. Also, due primarily to fire suppression, large acreage of important browse species such as wedgeleaf ceanothus have become decadent and are not providing the quality forage that younger plants provide. Proper livestock grazing management can help to avoid negative impacts to native plants and provide quality forage for deer and elk.

Special Status Species (Aquatic): The Foothills Creek Allotment is located in the uplands of Foothills and Birdseye Creek. The closest point within the allotment to these creeks is .2 miles. Both Birdseye and Foothills Creek support populations of "threatened" (as listed under the Endangered Species Act) coho salmon as well as steelhead, rainbow, and cutthroat trout. Coho Critical Habitat (CCH) has been designated by the National Marine Fisheries Service for the Southern Oregon/Northern California (SONC) Evolutionary Significant Unit of coho, and includes the Foothills Creek and Birdseye Creek. This same habitat is also considered Essential Fish Habitat (EFH) under the Magnuson Stevenson Fisheries Act.

The Foothills Creek Allotment does not have any streams, wetlands or aquatic features within it. The dry draws within the Foothills Creek Allotment were surveyed in 2008 and had no visual impacts from cattle use. These dry draws have plenty of vegetation and are not capable of transporting sediment or other impacts into Foothills or Birdseye creek several hundred feet away.

Bureau Special Status fungi, lichens, and bryophytes:

There are no known occurrences of special status fungi, lichens, and bryophytes

Federally Listed, and Bureau Sensitive Status Vascular Plants:

There are no known occurrences of special status vascular plant species. The allotment is outside the range of federally listed plants (*Limnanthes floccosa*, *Lomatium cookii*, and *Arabis macdonaldiana*). The allotment is within *Fritillaria gentneri* habitat defined by the U.S. Fish and Wildlife Service (USDI Fish and Wildlife Service, 2003). However, no occurrences are known

Noxious Weeds:

There were no occurrences of broadleaved weeds within the allotment. Medusahead and other exotic annual grasses are present in some interspaces within the allotment. Exotic annual grass infestations are of concern because they alter the ecological functioning of native plant communities, reduce the value of wildlife habitat, and provide inferior forage for wildlife and livestock (D'Antonio and Vitousek, 1992). The areas most likely to experience conversion from native perennial grasslands to exotic annual grasslands have already undergone conversion, and current stocking rates are unlikely to convert additional areas of remnant native grassland. Field visits to the allotment and BLM monitoring data in surrounding areas suggests exotic annual grasses are not spreading rapidly under current grazing regimes. However, areas that experience soil and vegetation disturbance within the allotment are at risk for weed colonization. The BLM weed control program uses herbicides, biological control agents, and hand pulling to treat infestations across the landscape as time, budget, and personnel constraints allow.

RANGELAND HEALTH FIELD ASSESMENT SUMMARY OF FINDINGS

Rangeland Health is defined as the degree in which the integrity of the soil, vegetation, water, and air as well as the ecological processes of the rangeland ecosystem are balanced and sustained (USDA 1997). This qualitative assessment along with quantitative monitoring data is an attempt to look at how well ecological processes such as the water cycle (capture, storage, and safe release of precipitation), energy flow (conversion of sunlight to plant and then animal matter), and nutrient cycle (the cycle of nutrients through the physical and biotic components of the environment) are functioning. The product of this qualitative assessment is not a single rating of rangeland health, but an assessment of three interrelated attributes: Soil/site stability, Hydrologic function, and Biotic integrity. Attributes are rated based on what would be expected for the site or a "reference state" based on soils, climate and topography compared to the current state. The attributes are split into seventeen indicators that are rated as none to slight, slight to moderate, moderate, moderate to extreme, and extreme to total departures from the reference state (table 4).

A RHFA was completed at a pine-Douglas fir-fescue ecological site. The ecological site was chosen by using GIS (Global Information Systems) mapping that defined vegetative communities and soils followed by field surveys to determine a representative location to complete the assessment. The assessments were completed with an IDT (Interdisciplinary team).

RHFA Location: Pine-Douglas Fir-Fescue Summary

The overall rating for this location is a None-to-Slight departure from what would be expected for this site. Fourteen indicators (82%) were rated None to Slight, two indicators (10%) was rated Slight to Moderate, one of the indicators (6%) was rated Moderate to Extreme and none of the indicators were rated Moderate or Extreme to Total.

Table 5: RHFA indicator summary

Location: Pine-Douglas fir-Fescue					
Indicator	Degree of Departure from Ecological Site Description				
	Extreme	Moderate to Extreme	Moderate	Slight to Moderate	None to Slight
1. Rills					✓
2. Water Flow Patterns					✓
3. Pedestals and/or Terracettes					✓
4. Bareground					✓
5. Gullies					✓
6. Windscored Blowouts					✓
7. Litter movement					✓
8. Soil surface resistance to erosion					✓
9. Soil surface loss or degradation					✓
10. Plant community composition and distribution relative to infiltration					✓
11. Compaction Layer					✓
12. Functional/Structural groups				✓	
13. Plant mortality/ decadence				✓	
14. Litter amount					✓
15. Annual Production					✓
16. Invasive Plants		✓			
17. Reproductive capability of Perennial plants					✓

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