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

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Bull Run Allotment –

STANDARDS OF RANGELAND HEALTH ANALYSIS

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Assessment Participants (Name and Discipline):

Kimberly Hackett	- Rangeland Management
Dave Roelofs	- Terrestrial Wildlife
Steve Liebhardt	- Aquatic/Fisheries
Shawn Simpson	- Hydrology
Marcia Wineteer	- Botany
Dulcey Schuster	- Soils/Interdisciplinary Team Leader

INTRODUCTION

This is an Oregon/Washington Bureau of Land Management (BLM) Standards of Rangeland Health Evaluation that addresses the Bull Run Allotment (10023). The Bull Run Allotment is located east of the Butte Falls Highway in T. 35 S., R. 1 E., Section 5 Willamette Meridian (Map 1). The allotment is 40 acres with five cows permitted from June 1- June 30 totaling five Animal Unit Months (AUMs).

Vegetation

Vegetation in the allotment is a mosaic of plant communities, including mixed hardwood-conifer woodlands; Oregon white oak woodlands; wedgeleaf ceanothus and manzanita chaparral; grassy, rocky openings; and meadows. Elevation ranges from 1,760 to 2,320 feet and aspects are north, northwest, and west-facing. It is a dry site with areas of shallow soils and scabby, basalt outcrops. While plant composition in the mixed hardwood-conifer woodlands and Oregon white oak woodlands and savannas contain mostly native species, the open grassy and chaparral areas where soils are thinner, contain annual, non-native grasses like medusahead (*Taeniatherum caput-medusae*), hedgehog dogtail (*Cynosurus echinatus*), bulbous bluegrass (*Poa bulbosa*) and non-native annual bromes. The conversion from native to non-native species in these meadows occurred as a result of historical uses and the invasiveness and dominance of non-native grasses and forbs. The chaparral and woodland communities have not had recent fire and are generally decadent with dense poison oak and brush. Some conifers are dead or dying.

Soils

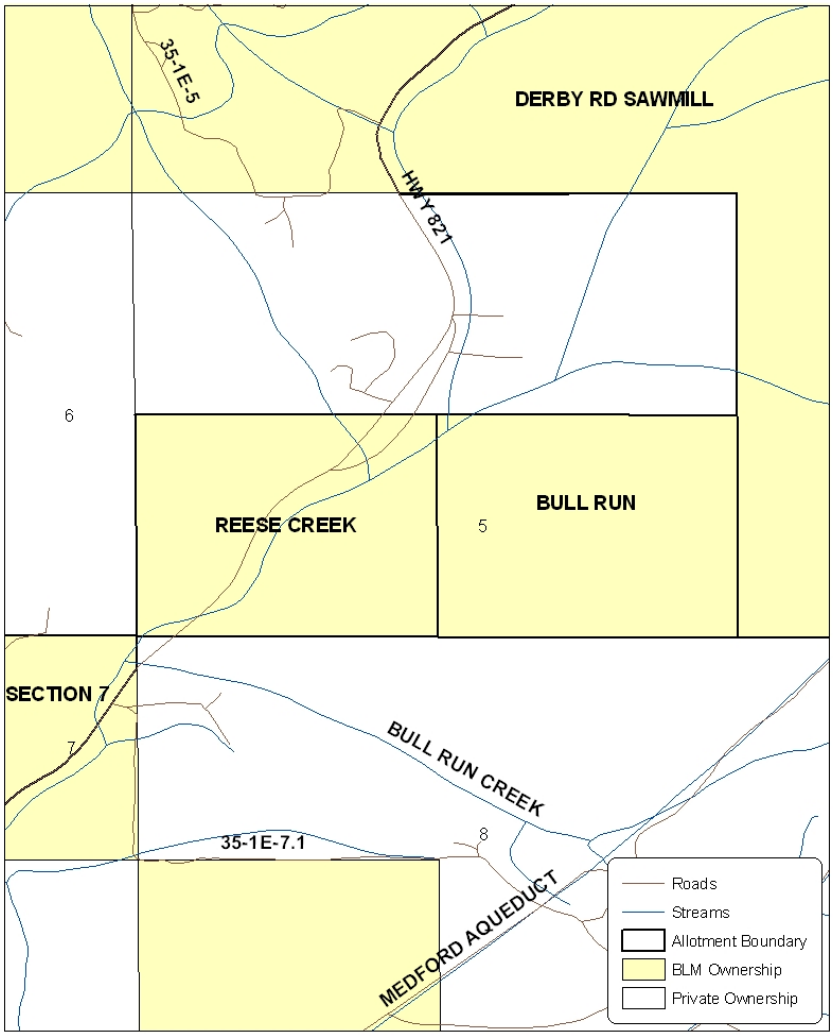
The main soil limitations affecting livestock grazing are erosion, compaction, the depth to bedrock, and the steepness of slope. This season of use and number of cattle using the allotment does not significantly diminish the health and function of the watershed by minimizing use, maintaining adequate vegetative cover, and healthy root systems. These factors aid in maintaining existing infiltration, percolation, runoff and erosion rates. Areas dominated by invasive annual grasses have shallow root zones, and thus are less able than native grassland communities to retain and slowly release moisture, capture leaching nutrients, and stabilize the soil (D'Antonio and Vitousek 1992).

Soils in the area are primarily classified as McMullin-Rock outcrop / Medco-McNull / Medco McMullin series. McMullin-Rock outcrop soils are generally shallow and well drained, and typically composed of dark reddish-brown gravelly loams. Both Medco McNull and Medco McMullin are moderately deep and moderately well drained. Permeability is moderately slow to moderate, with a water capacity of about 2 inches, and a corresponding rooting depth of about 12 to 20 inches. These soils have slight to moderate erosion factors by water. Rock outcrop consists of areas of exposed bedrock. Runoff is very rapid in these areas. The soils can be easily compacted if wet or saturated and are suitable for livestock grazing and wildlife habitat.

Hydrology

The Bull Run Allotment lies entirely within the South Fork Reese Creek Level 7 drainage in the Reese Creek – Rogue River Level 6 subwatershed which in turn is located in the Shady Cove – Rogue River Level 5 watershed. The South Fork of Reese Creek runs through the NW corner of the allotment. The South Fork of Reese Creek flows into Reese Creek approximately three miles downstream of the allotment boundary which flows into the Rogue River approximately three additional miles downstream. There are 0.06 miles of perennial streams within the allotment boundary. These perennial streams comprise the only drainage network in the allotment.

Map 1. *Bull Run Allotment Map*



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.

The Standards and Guidelines also specify a set of potential indicators for use when determining whether or not standards are being met. This assessment summarizes existing resource conditions on the Bull Run Allotment using information derived from the rangeland health 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:
Data used by the BLM to support this assessment includes, but is not limited to, the following studies and monitoring projects.

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 July 16, 2008 at a loamy shrub scabland site.

Hydrologic/Riparian Surveys: Surveys of all streams within the allotment were conducted in 2008 using the Butte Falls Resource Area Stream Survey Protocol. Location, periodicity, connectivity, channel classification/morphology data for streams, wetlands, and other hydrologic features; instream large wood; impact descriptions and restoration opportunities, especially related to livestock, transportation, timber harvest and vegetation throughout the allotment is collected. Properly functioning condition (PFC) is also assessed during the surveys.

Baseline Stream Temperature Monitoring: Seasonal 30-minute interval stream temperature data has been collected by the Medford Water Commission at two monitoring sites on Reese Creeks downstream of this allotment using USGS and Oregon DEQ-established methodologies. Temperature monitoring data assists in assessment of Aquatic Conservation Strategy (ACS) Objectives 1-4 and 6-9 (USDA/USDI 1994b); for assessment of compliance with state water quality standards; and assists in development of State of Oregon/EPA-required Water Quality Management Plans for the area.

Gaging Station and Staff Gages: Flow and Water Quality Assessment: Calculation and assessment of peak, high and low flows are extremely difficult without actual field measurement and reference over time. Flow data is also required for the meaningful analysis of water quality parameters. Because of rapid fluctuation in stream levels, continuous records are required at a key location to interpret data collected in non-continuous sampling from other locations. Grab samples of turbidity, air temperature, water temperature, pH, and flow, are collected in one location in the Reese Creek – Rogue River Level 6 subwatershed; the site, established in 2008, is immediately downstream from the grazing allotment and is located on the South Fork Reese Creek. Streamflow is also measured at this site. The general lack of multiple collection sites and subsequent data stems primarily from the scarcity of BLM managed land within this area. There are no stream gages established at any site within the Reese Creek – Rogue River Level 6 subwatershed.

Stream Channel Cross Sections: Stream cross-section measurements are collected at one site within the Reese Creek – Rogue River Level 6 subwatershed; the site is immediately downstream from the allotment and is located on the South Fork Reese Creek. Measurement methodologies include standard cadastral survey techniques and those outlined in Rosgen (1996). Sites are measured annually and/or after major flood events. Cross-sections provide a reference point from which to document changes in channel morphology, conduct flow measurements, and estimate flood flows. Documentation of changes in

channel morphology provides an indication of stability and functioning of the upstream surface hydrologic system.

Rain Gages: Assessment of hydrologic response and water quality parameters, as well as many other aspects of ecosystem function, can only be analyzed accurately in the context of recent precipitation. Rainfall data is not collected within the Reese Creek – Rogue River Level 6 subwatershed. Similarly, daily snowfall and snow-on-the-ground is not collected. Data from non-BLM sources however, indicates that annual precipitation is between 24 and 34 inches. Year-to-year trends in precipitation tend to be uniform over an area the size of the Bull Run Allotment, but there is substantial variability in precipitation across the Reese Creek – Rogue River Level 6 subwatershed based on terrain, elevation, aspect, etc. Precipitation data from a number of sites at varying elevations and locations in and around the subwatershed is needed for accurate interpretation of related data including hydrologic and vegetation conditions. The nearest BLM-monitored rain gage is in the community of Butte Falls, Oregon – approximately six miles east and in the Big Butte Creek Level 5 watershed.

Botany Surveys: Botany surveys were conducted in the Bull Run Allotment in 2002, 2006, and 2007 using the Intuitive Controlled Survey. In this method the surveyor traverses the project area enough to see a representative cross section of all the major habitats and topographic features, looking for Special Status plant species while en route between different areas. When the surveyor arrives at an area of high potential habitat, he conducts a more intensive survey for the target species.

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 was conducted on the allotment at a loamy shrub scabland ecological site in July of 2008. The indicators pertaining to Soil/Site Stability revealed that all ten indicators were rated none-to-slight departure from the ecological site reference.

The Bull Run Allotment lies entirely within the South Fork Reese Creek Level 7 drainage in the Reese Creek – Rogue River Level 6 subwatershed. The road density in the South Fork Reese Creek Drainage is

4.92 $^{mi.}/_{mi.^2}$. Within the Reese Creek – Rogue River Level 6 subwatershed the road density is 5.09 $^{mi.}/_{mi.^2}$. High road densities are generally associated with impaired hydrologic function; loss of connectivity; introduction and spread of exotic species and noxious weeds; reductions in site productivity; and increased sediment production.

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 include standing water systems such as lakes, ponds, seeps, bogs, and meadows; and 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.

Functioning Condition Assessments were conducted in the riparian areas of the allotment in 2008 (BLM Stream Surveys). These assessments refer to a consistent approach for considering hydrology, vegetation, and erosion/deposition (soils) attributes and processes to assess the condition of riparian areas. The South Fork Reese Creek runs through the northwest corner of the Bull Run Allotment. The South Fork Reese Creek is a tributary to Reese Creek, a tributary to the Rogue River.

Upstream of the allotment, a diversion diverts roughly half of South Fork Reese Creek. However, due to the influx of groundwater and water from ditch and canal failures, South Fork Reese Creek and many of its tributaries are perennial.

The South Fork Reese Creek flows parallel to the Butte Falls Highway (County Road 821). Due to the close proximity of the road, the right bank of South Fork Reese Creek has been altered in terms of hydrology and riparian vegetation. The right streambank is located in armor-rock and is host to dense, non-native vegetation. Much of the left streambank is constrained by bedrock geology. Stemming from the armored right streambank and the bedrock left bank, stream energy is high. Where geology permits, the floodplain is wide. Energy is only attenuated by beaver dams – of which there are several.

Due to stream diversions and proximity to the Butte Falls Highway, the section of South Fork Reese Creek within the allotment is Functioning-at-Risk with an Upward Trend. Grazing does not appear to negatively influence hydrology. BLM surveys (2008) indicated no active erosion within the allotment. However, active erosion was observed on approximately 30% of streambanks along an unnamed, perennial tributary to the South Fork Reese Creek, immediately upstream from the allotment. Such erosion is likely to contribute sediment and increase turbidity within the allotment. Additionally, an unnamed, perennial tributary of South Fork Reese Creek immediately upstream of the allotment has been

rated nonfunctional due to the stream's high velocity and lack of structure flowing from a failure in an irrigation ditch. While obligate wetland vegetation exists, the stream consists largely of unstable, overland flow. Significant sediment inputs are possible. Due to the wide, shallow and unshaded nature of this stream it is also susceptible to elevated water temperature which flows directly into South Fork Reese Creek.

The road density in the Reese Creek – Rogue River subwatershed is 5.09 $^{mi.}/_{mi.^2}$. Roads within riparian areas can greatly influence aquatic and riparian conditions. Roads contribute to the disruption of aquatic connectivity, large wood and nutrient storage regimes, peak flow routing, aquatic habitat complexity, temperature regimes, channel morphology, and direct sediment inputs from road failures. The Matrix of Pathways and Indicators for the Klamath Province/Siskiyou Mountains considers road densities of less than 2.0 mi./mi.^{2} as properly functioning condition and greater than 3.0 mi./mi.^{2} as not properly functioning (ODFW 2002, 2003).

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 cycle can lead to site degradation as these lands become increasingly deficient in the nutrients that 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. The dry meadows and oak woodland plant communities support a diverse mix of plant species. However, invasive plant species are scattered in patches through out the majority of the non-conifer areas, particularly annual grasses. 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. Medusahead, where it is well established interrupts the nutrient cycle as it forms litter mats on the soil surface which decay slowly due to high silica content and retain nutrients. It also grows early in the season thus outcompeting perennial grass seedlings for early soil moisture and nutrients. In areas where these annual grass species are already well established, the plant community has likely crossed over a threshold into a less desirable stable state. 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.

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. DEQs 2004/2006 303(d) list is the most recent listing of these streams (ODEQ 2006a). Within the Bull Run Allotment there are no known listed streams on DEQs 2004/2006 303 (d) list. However, the lower reaches of Reese Creek (stream mile 0-3) are listed for summer dissolved oxygen limitation and E. coli contamination.

Roads may alter the groundwater and surface flow patterns locally and may create an imbalance in hydrologic systems. Natural and graveled road surfaces, road cuts, fill slopes, and ditch lines are subject to erosion. Ditch lines that are not effectively drained by relief culverts (cross drains) act as extensions of stream networks that deliver fine sediment, as well as intercepted ground and surface water directly into stream channels. Research (Jones and Grant 1994; Wemple 1994; Wemple, et al. 1996) suggests that roads that contribute to the extension of the stream channel network are related to changes in the timing and magnitude of peak flows. Road cuts intercept subsurface flow, effectively increasing the amount of surface flow, and the ditch lines allow the water to move through the stream systems quicker. The road density in the Reese Creek – Rogue River subwatershed is 5.09 $^{mi.}/_{mi.^2}$.

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 or state listed as threatened or endangered, are proposed or are a candidate for listing as threatened or endangered, or are Bureau sensitive. BLM policy is to manage for the conservation and recovery of listed and proposed species and their habitats; ensure that all actions authorized, funded, or carried out by the BLM are in compliance with the Endangered Species Act; evaluate all proposed actions to determine if individuals or populations of listed species or their habitat, including designated habitat, may be affected; and ensure that decisions, standards and guidelines, and best management practices are consistent with meeting recovery plan objectives and terms and conditions of applicable biological opinions. BLM policy for candidate, state listed and sensitive species is to ensure that actions authorized, funded, or carried out by the BLM do not contribute to the need for these species to become listed.

Bureau Special Status terrestrial wildlife:
Special Status species known or likely to be present on the allotment are displayed in Table 1.

Table 1. *Special Status Species (Terrestrial Wildlife)*

Species	**Species Status**
Streaked Horned Lark (*Eremophila alpestris strigata*)	BS
Lewis' Woodpecker (*Melanerpes lewis*)	BS
Foothill Yellow-legged Frog (*Rana boylii*)	BS
Northwestern Pond Turtle (*Actinemys marmorata marmorata*)	BS
Pallid Bat (*Antrozous pallidus*)	BS
Townsend's Big-eared Bat (*Corynorhinus townsendii*)	BS
Oregon Shoulderband Snail (*Helminthoglypta hertleini*)	BS
Chace Sideband Snail (*Monadenia chaceana*)	BS
Traveling Sideband Snail (*Monadenia fidelis celeuthia*)	BS
Siskiyou Hesperian Snail (*Vespericola sierranus*)	BS
Coronis Fritillary Butterfly (*Coronis fritillary*)	BS

BS - Bureau Sensitive

The 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 F displays those species that are known or likely to present on the allotment.

Table 2. *Bird Species of Conservation Concern*

Species	**Species Status**
Band-tailed Pigeon (*Columba fasciata*)	GBBDC
Grasshopper Sparrow (*Ammodramus savannarum*)	BCC
Lewis' Woodpecker (*Melanerpes lewis*)	BCC
Mourning Dove (*Zenaida macroura*)	GBBDC
Olive-sided Flycatcher (*Contopus cooperi*)	BCC
Rufous Hummingbird (*Selasphorus rufus*)	BCC
White-headed Woodpecker (*Picoides albolarvatus*)	BCC

BCC - Bird of Conservation Concern
GBBDC - Game Birds Below Desired Condition

Table 1 lists the Bureau Sensitive terrestrial wildlife species that have a possibility of being found in the Bull Run Allotment, based on the type of habitat at that location. Livestock grazing primarily affects wildlife by changing vegetation composition, structure, and function. Grazing can result in a reduction of forage available to native herbivores, 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 may reduce 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 site-specific behavioral traits. Generally, the extent of impacts to individual T&E species and their habitats are unknown.

Streaked horned larks likely will not be disturbed by grazing in this allotment because they are not known to nest in southwestern Oregon. Horned larks migrate through the Rogue Valley in the spring and fall and have been sighted near Lost Creek Lake during these times (Barrett, personal communication). Horned larks are commonly found in open fields with short (<1 ft), herb-dominated ground cover, and areas of significant sparse vegetation and patches of bare ground (Marshall 2003). Sightings of horned larks on Table Rock were reported in 2007 (Schnoes personal communication). It is unknown if this is the sub-species *strigata*. Lewis's woodpeckers are associated with open woodlands near streams and rivers. They breed sparingly along Bear Creek and areas of the Upper Rogue Valley in Jackson County. Habitat preference is hardwood oak stands with scattered ponderosa pine near grassland shrub communities. Threats not related to grazing include the decline of lowland oak habitat, competition with European starlings, prospects for nest and food storage trees, competition for nest holes, and effects of pesticides. Because grazing does not remove nest and forage trees from the Lewis' woodpecker, there will be no negative impact to the bird within this allotment. Band-tailed pigeons may forage in the Bull Run allotment, but primarily nest in Douglas-fir trees within closed-canopy mixed conifer stands. The short duration and small number of cows in Bull Run will not negatively impact the band-tailed pigeon. In the Rogue Valley, one small colony of grasshopper sparrows has been located outside of land administered by the BLM. They prefer to nest and forage in open grasslands, generally free of woody shrubs. The Bull Run Allotment is not ideal habitat for the grasshopper sparrow. Heavy grazing poses a threat to this species, but it is expected that the short duration of use within this allotment will not totally strip the grasses from this area, even if the sparrows do occur here. Olive-sided flycatchers are often encountered on the Butte Falls Resource Area (BFRA) and occur in coniferous forests where they use tall trees and

snags for nesting and foraging. The white-headed woodpecker likely does not use this area for nesting as it prefers mature forest with large-diameter ponderosa pines. Cattle grazing will not remove habitat for the olive-sided flycatcher or the white-headed woodpecker, which forage on insects, and nest, in trees.

One frog species and one reptile are listed on the Bureau Sensitive list that may be present in the Bull Run Allotment. The foothill yellow-legged frog depends on aquatic environments for their entire life cycle. Foothill yellow-legged frogs are associated with low gradient streams and about 200 feet of Reese Creek is within the boundaries of this allotment. The northwestern pond turtle may occur within the Bull Run Allotment. Northwestern pond turtles spend the majority of their life cycle in aquatic environs, but must leave the water to dig terrestrial nests and lay their eggs. These turtles often over-winter in upland settings as well. Both of these activities may be impacted by heavy grazing and post-holing by livestock. We have not observed evidence of heavy grazing or post-holing by cows in Bull Run, and do not expect that grazing poses a threat to the pond turtle or the yellow-legged frog in this allotment.

Pallid bats roost during the day in rocky outcroppings, buildings, caves, mines, rock piles, and tree cavities, especially near water. They forage on most types of insects on the ground and on vegetation. The short duration of grazing in Bull Run is not expected to interfere with their food supply, nor will it remove any of their roost sites. Townsend's big-eared bats hibernate and give birth to their young in caves or mines and feed mainly on moths. There are no caves or mines in this allotment and it is not expected that grazing here will disrupt any of their colonies.

Species that may be affected by forage removal include rufous hummingbirds, mourning doves, and coronis fritillary. Coronis fritillary may be present, but there is no record of any being observed on the Medford District of the BLM. One of their favorite plants to obtain nectar from is the bull thistle, which livestock will not forage on. They lay their eggs on litter near violets and the hatched caterpillars will feed on violet leaves. Violets used by coronis fritillary for ovipositing may be removed or trampled, and heavy grazing facilitates the invasion of non-native species (Hosten 2007a). Because grazing is light and the duration is short within this allotment, violets adapted to this habitat, like *Viola purpurea*, will not be completely removed. While the mourning dove may also be affected by the removal of seed-producing plants like some grasses, it will also forage on seeds of many other herbaceous plants and trees. Mourning doves are well-distributed throughout the resource area and grazing in Bull Run will not negatively disrupt their ability to survive. The rufous hummingbird may use this allotment for foraging, but it prefers wooded areas with a well-developed understory and high canopy cover for nesting. While it feeds on nectar from flowering plants, it will also forage on insects and take advantage of hummingbird feeders near houses. Because of the short duration of grazing here and nesting habitat will not be removed, it is not expected that grazing will have a negative impact on the persistence of the species.

Each of the mollusk species listed in Table 1 have been found on the Butte Falls Resource Area. No mollusk surveys have been performed in the Bull Run Allotment, but they may be present. The terrestrial mollusk species in Table 1 seek refuge in moist areas under rocks and large woody debris during the summer and late winter seasons, and are generally associated with mixed conifer forests with a high percentage of canopy cover. Oregon shoulderband, Chace sideband, and Siskiyou hesperian snails have been found to be well-distributed across the BFRA, while the traveling sideband has been observed in four different locations, based on protocol mollusk surveys. No impact to the large woody debris or talus areas is expected from grazing and it is not anticipated that grazing in Bull Run with impact the persistence of these species.

Table 3. *Special Status Species (Aquatic)*

Species	**Status**
SONC coho salmon (*Oncorhynchus kisutch*)	FT

FT- Federally Threatened

Special Status Species (Aquatic):
Reese Creek supports populations of Southern Oregon/Northern California (SONC) coho salmon (*Oncorhynchus kisutch*), a "threatened" species under the Endangered Species Act (ESA), downstream of the allotment area. The amount of coho salmon production in Reese Creek is unknown, but is assumed to be fairly low due to limited water quality and warm summer temperatures. Any coho salmon that do get produced in Reese Creek would have to find cool seeps lower down in the Reese Creek drainage or migrate down stream before water quality becomes too poor for survival.

Threatened and Endangered (T&E) Plants
The Bull Run grazing allotment is within the range of and contains suitable habitat for one federally endangered plant, *Fritillaria gentneri* (Gentner's fritillary). This species is endemic to Jackson and Josephine Counties. It grows in the rural foothills of the Rogue River and Illinois River Valleys in grassland and chaparral habitats within, or on the edge of dry, open woodlands. Consultation with the U.S. Fish and Wildlife Service was completed for T&E plants for planned activities in the Fiscal Year 2004-2008 Rogue River/South Coast Biological Assessment (USDA and USDI, 2003) and Biological Opinion (FWS) 1-14-03-F-511 (USFWS 2003). The Project Design Criteria (PDC) requirements for livestock grazing are to survey suitable habitat in the allotments at the appropriate time of year prior to the ten-year allotment renewals, identify sites, and implement protection measures. Surveys are good for five years. Surveys for *Fritillaria gentneri* were conducted in the Bull Run allotment in April 2002 and April 2007. No *Fritillaria gentneri* sites have been documented in the 40 acre allotment.

Special Status Vascular and Nonvascular Plants
Two Sensitive vascular plant sites were documented in the allotment. No Special Status nonvascular sites occur within the allotment.

Table 4. *Special Status Plant Species*

Slender nemacladus (*Nemacladus capillaris*)	BS
Austin's popcornflower (*Plagiobothrys austiniae*)	BS

BS- Bureau Sensitive

One population of *Nemacladus capillaris* (Slender nemacladus) containing 11 plants is located in an open meadow on top of a ridgeline in the southeastern corner of the allotment. There were no signs of livestock at the site in 2007 or 2008; however, it did not appear that cows had used the allotment in 2008 and perhaps not in previous recent years. The meadow itself appears to have been bladed at one time and contains annual non-native grasses and forbs. The plants discovered in 2007 were growing on a small mound in the meadow. It is possible that the population was more extensive at one time, but was impacted when the area was bladed. The habitat for *Nemacladus capillaris,* a small annual forb, is described as dry slopes and burned areas (Hickman 1993, p. 466). It blooms in June or July and was discovered in fruit at the Bull Run site on August 4, 2007. There are 46 known sites of *Nemacladus capillaris* in the Medford District BLM, but this site and two other sites in the Butte Falls Resource Area are disjunct from the rest of the sites in southeastern Jackson County, located in the Cascade-Siskiyou National Monument. While the population in the Bull Run allotment could be negatively impacted if trampled by cows, it does not currently appear to be threatened. It may bloom and set fruit after June 30, in which case the cows would be out of the area before it bloomed. The site should be periodically monitored and caged or fenced if cows begin impacting the site.

The second sensitive plant site is *Plagiobothrys austiniae* (Austin's popcornflower), located on a west-facing slope in the southeastern quarter of the allotment. The site, containing approximately 50 plants, is

located in a small grassy opening surrounded by thickets of wedgeleaf ceanothus and oak woodland. *Plagiobothrys austiniae* is a small, spring-blooming annual that grows in vernally wet meadows and generally blooms and sets seed in April and May. Thirty-two populations have been reported in the Medford District BLM, with all but one located in central Jackson County. The one outlier population is located in the Cascade-Siskiyou National Monument. Although *Plagiobothrys austiniae* plants are not large enough to provide significant forage to livestock, they can be browsed with other grasses and forbs that grow in the same habitat. They can also be trampled and the habitat altered when livestock walk in the wet meadows and their hooves create small depressions in the soil. The population in the Bull Run allotment did not show any impacts from livestock when it was discovered in 2007 and the allotment was not utilized by livestock in 2008. Because the plants bloom in April and May and the cows are turned out from June 1-30, the plants should have set seed before the cows arrive. Another way the population could become impacted as a result of livestock grazing is if noxious weeds increase due to overgrazing in the meadow. However, utilization by five cows over a one month period in June should not result in over-utilization at the site, unless they congregate there the entire time, which is highly unlikely. The population should be periodically monitored to make sure cows do not impact the plants. Protection measures should be implemented if cows begin impacting the site.

Although the open meadows are dominated by annual non-native grasses, few noxious weeds are present in the allotment. Three small populations of yellow star-thistle (*Centaurea solsitialis*), containing a total of 43 plants, were detected in 2007. Most plants were pulled. Yellow star-thistle plants begin growing in June and may be eaten by cows before they develop sharp spines, flower, and set seed. However, in general, cows avoid yellow star-thistle and eat native grasses, giving star-thistle an advantage in spreading to occupy a site. Because the allotment is relatively weed-free, efforts should be made to revisit the noxious weed sites and eradicate the populations. The allotment should be monitored and noxious weed populations treated as discovered.

RANGELAND HEALTH FIELD ASSESSMENT 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 5).

A Rangeland Health Field Assessment was completed at a loamy shrub scabland ecological site on the Bull Run Allotment. This 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 assessment was completed with an interdisciplinary team (IDT).

***Location 1*: Loamy Shrub Scabland Summary**

The overall rating for this location is a slight-to-moderate departure from what would be expected for this site. Fifteen indicators (88 percent) were rated none-to-slight, one indicator (six percent) was rated slight-to-moderate, one indicator (six percent) was rated moderate, and none of the indicators were rated

moderate-to-extreme or extreme-to-total.

Table 5: RHA location 1 indicator summary

Location 1: Loamy Shrub Scabland					
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. Windscoured 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					✓

PREPARED BY:

Dave Roelofs
Dave Roelofs
Wildlife Biologist

Kimberly Hackett 10/16/08
Kimberly Hackett
Rangeland Management Specialist

Shawn Simpson 10/15/08
Shawn Simpson
Hydrologist

Marcia Wineteer 10/9/08
Marcia Wineteer
Botanist

Dulcey Schuster 10/7/08
Dulcey Schuster
Soils/Interdisciplinary Team Leader

Steve Liebhardt 10/14/08
Steve Liebhardt
Fisheries Biologist

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