

## **RANGELAND HEALTH STANDARDS - ASSESSMENT –Rabbit Basin ALLOTMENT #0516**

### **Standards for Rangeland Health and Guidelines for Livestock Grazing Management (BLM, 1997)**

#### **Introduction**

The Range Reform '94 Record of Decision (BLM, 1995a) recently amended current grazing administration and management practices. The ROD required that region-specific standards and guidelines be developed and approved by the Secretary of the Interior. In the State of Oregon, several Resource Advisory Councils (RACs) were established to develop these regional standards and guidelines. The RAC established for the part of the state covering the Rabbit Basin allotment is the Southeastern Oregon RAC. These standards and guidelines for Oregon and Washington were finalized on August 12, 1997 and include:

#### Standard 1 - Upland Watershed Function

Upland soils exhibit infiltration and permeability rates, moisture storage, and stability that are appropriate to soil, climate, and landform.

#### Standard 2 - Riparian/Wetland Watershed Function

Riparian-wetland areas are in properly functioning physical condition appropriate to soil, climate, and landform.

#### Standard 3 - Ecological Processes

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.

#### Standard 4 - Water Quality

Surface water and groundwater quality, influenced by agency actions, complies with State water quality standards.

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

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.

**Standard 1 - Upland Watershed**

**This standard is being met on the allotment.** The indicators used to evaluate this standard are Soil Surface Factor (SSF), which documents accelerated erosion; and plant community composition, which indicates root occupancy of the soil profile.

Soil Surface Factor (SSF) is an indicator of accelerated erosion and is a method of documenting observations regarding erosion. A copy of the form used to document SSF is attached (Appendix A, "Determination of Erosion Condition Class"). With 28% of the allotment being in the moderate class there is some active erosion and evidence of past erosion on these areas. These areas are native range sites with loamy sand and sandy loam soils. These soils are very susceptible to both wind and water erosion. The question is how much of the erosion is caused by the current grazing practices. Under current grazing management most of the utilization appears to be on the crested wheatgrass seedings and not on the native range. The average utilization on the crested wheatgrass since 1990 has been 55%. The authorized use is between December and April, but most of the use is in February and March. It appears from the utilization levels, season of use and the location of the heavy use, that current grazing practices are not responsible for areas being in the moderate erosion class.

	<b>Erosion Condition Classes*</b>				
	Slight	Moderate	Critical	Rockland or Playa	Unknown**
Acres	8,359	8,981	51	808	14,012
Percent of Allotment	26%	28%	0.2%	3%	43%

*\* The erosion condition classes are based on numeric scoring system which considers soil movement, surface litter, surface rock, pedestalling, flow patterns, rills and gullies. Appendix A is an example of the scoring sheet that is used.*

*\*\* The SSF scores are derived from actual transects and these transects were not done in every Site Writeup Area (SWA), but only in enough SWAs to represent the different vegetation types. Therefore the unknown acres result from SWAs where the representative transect was run in a different pasture or allotment. Therefore the SSF score should not be used as it may or may not be represent the SSF score in the #516 allotment.*

Another indicator of Upland Watershed condition is plant composition and community structure. The composition of the vegetation within the allotment can be seen in attached Table 1. There is no single dominant vegetation type in the allotment, with sagebrush/grass being the most common type, making about 39% and Wyoming big sagebrush about 18% of the allotment. However within the sagebrush/grass type there is considerable variation, with basin big sagebrush/grass occupying about 18% and Wyoming big sagebrush/grass about 19% of the allotment. The variation in the herbaceous understory indicates that native vegetation communities appear stable.

Wildfire in 1983 resulted in the conversion of 14% of allotment acreage to either crested wheatgrass seedings (7%) or cheatgrass stands (7%). The crested wheatgrass seedings do provide a stable perennial plant community and a significant forage resource for the cattle. The cheatgrass stands demonstrate what the potential result is if the perennial grass and sagebrush cover is lost because of fire or overgrazing.

The Ecological Site Inventory (ESI) compares the current plant composition to a defined Potential Natural Plant Community for the identified soil type and precipitation zone. Using the 1995-2000 ESI, the percent of public land in the allotment in each seral stage is summarized in the table below.

**Ecological Condition of Allotment #0516, Rabbit Hills as determined by the Ecological Site Inventory in 1995 and 1996.**

	<b>Ecological Condition Classes</b>			
	Early	Mid	Late	Climax
Acres	16,802	5,460	4,625	1,046
Percent of Vegetation (27,933 acres)	60%	20%	17%	4%

About 60% of the vegetation in the allotment is in the early seral stage and this includes all the crested wheatgrass seedings and the cheatgrass stands (4,863 acres). Most of the remaining acres in the early seral stage are in the Wyoming big sagebrush type (5,832 acres), the Wyoming big sagebrush/Thurber's needlegrass type (1,819 acres), the basin big sagebrush/bottlebrush squirreltail type (1,810 acres) and types (1,638 acres) that include either rabbitbrush or cheatgrass as a dominant. The remaining 840 acres in the early seral stage include small portions of different big sagebrush/grass communities. The crested wheatgrass seedings and cheatgrass stands are mono cultures that are automatically in the early seral stage. The Wyoming big sagebrush and rabbitbrush types contain some scattered bottlebrush squirreltail and cheatgrass, but the shrubs occupy enough of the available space and resources to make establishment of new perennial grasses very difficult without new disturbance. The current winter and early grazing does not impact this sagebrush type and the utilization of the cheatgrass when is young and green may actually reduce cheatgrass production in this type.

The remaining vegetation types in the mid and late seral stages are sagebrush types with a perennial grass understory. These types appear stable and are not impacted significantly by the current grazing management.

The vegetation types in the climax class are hopsage/grass types and appear stable and not impacted by cattle grazing.

**Standard 2 - Riparian/Wetland**

**Standard II is being met for Riparian/Wetland function.** There are 318 acres of palustrine wetlands found in the allotment and they are rated at Proper Functioning Condition. Livestock grazing does not appear to be a factor limiting Riparian/Wetland function.

**Standard 3 Ecological Processes**

**This standard is being met.** Following are observations from the interdisciplinary team about the current plant community in the Rabbit Basin Allotment. There are no obvious signs of livestock overuse or damage in areas surveyed. A significant portion of Allotment 516 is composed of a drill-seeded crested wheat (*Agropyron cristatum*) seeding that is dominated by cheatgrass, but also contains pockets of native shrubs and forbs. The higher elevation areas are composed of pockets of big sagebrush with an understory of dense populations of cheatgrass. Livestock use when cheatgrass are greening up may be helpful in reducing cheatgrass populations. Lower elevations are primarily crested wheat and cheatgrass with scattered forbs and grasses. Hilltops and upper elevation areas possess the greatest plant diversity, including grasses, forbs, and shrubs. See Standard 5 for plant species diversity. In the northeast part of the allotment, the plant community changes as soil type changes, into the more salt tolerant species.

The Observed Apparent Trend (OAT) for the vegetation communities on public land was determined during the ESI (1995-2000) and is seen in the Table below. About half the acres in the allotment are either in static or upward in trend. The vegetation types making up the 14% of the allotment with a downward trend include portions of the cheatgrass, crested wheatgrass, sagebrush and sagebrush/Thurber's needlegrass vegetation types. The large amount of unknown acreage (43%) is the result of the survey

procedure, where the actual transect representing a vegetation type was run on a different pasture or allotment and the OAT score can not be accurately transferred.

	<b>Observed Apparent Trend*</b>				
	Upward	Static	Downward	Rockland or Playa	Unknown**
Acres	1,862	11,065	4,464	808	14,012
Percent of Allotment	6%	34%	14%	3%	43%

\* The Observed Apparent Trend (OAT) is a numerical rating which considers vigor, seedlings, surface litter, pedestals and gullies to estimate the trend of a particular site and SWA. An example of how the rating is determined can be seen in Appendix B.

\*\* The OAT scores are derived from actual transects and these transects were not done in every Site Writeup Area (SWA), but only in enough SWAs to represent the different vegetation types. Therefore the unknown acres result from SWAs where the representative transect was run in a different pasture or allotment. Therefore the OAT score should not be used as it may or may not represent the OAT score in the 516 Allotment.

The allotment is supporting the current and proposed number of mule deer and pronghorn antelope identified by Oregon Department of Fish and Wildlife (ODFW) management plans.

#### **Standard 4 - Water Quality Standards**

There are no Oregon listed water quality limited streams in this pasture.

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

**This standard is being met.** The allotment is supporting the current and proposed number of mule deer and pronghorn antelope identified by Oregon Department of Fish and Wildlife (ODFW) management plans.

The Native plant species observed on the allotment include: *Antennaria dimorpha*, *Arabis* sp., *Arenaria aculeata*, *Artemesia arbuscula*, *Artemesia tridentata*, *Astragalus curvicaarpus*, *Astragalus purshii*, *Atriplex spinosa*, *Castilleja* sp., *Chrysothamnus viscidiflorus*, *Crepis* sp., *Crepis occidentalis*, *Distichlis spicata* var. *stricta*, *Elymus elymoides*, *Erigeron bloomeri*, *Erigeron linearis*, *Eriogonum ovalifolium*, *Lewisia rediviva*, *Lomatium nevadense*, *Mentzelia albicaulis*, *Monolepsis* sp., *Penstemon* sp., *Phacelia linearis*, *Phlox hoodii*, *Poa secunda*, *Pseudoroegneria spicata*, *Sarcobatus vermiculatus*, *Sidalcea* sp., *Stipa comata*, *Stipa thurberiana*, and *Zigadenus venenosus*.

Special Status Plants: None found, none suspected.

Locally Important Plant Species: *Lewisia rediviva* and *Lomatium nevadense* are known to have cultural uses.

#### **Current Management and Recent Management Changes**

The allotment has been grazed in the winter and early spring for many years and this management will continue with one recent adjustment. The allotment has been split into two pastures, which will allow

livestock rotation and better animal distribution. The rotation will allow rest during the early spring in part of the allotment each year. This early spring rest will improve the species composition and production around water sources and areas that in the past were grazed heavy during the entire grazing period,

**Team Members**

**Title**

Les Boothe	Range Management Specialist
Alan Munhall	Fishery Biologist
Vern Stofleth	Wildlife Biologist
Lucile Housley	Botantist
Bill Cannon	Archaeologist
Ken Kestner	Supervisory NRS
Robert Hopper	Supervisory RMS
Erin McConnell	Weed Management Specialist

**Determination**

- Existing grazing management practices or levels of grazing use on the Rabbit Basin Allotment promote achievement of significant progress towards the Oregon Standards for Rangeland Health and conform with the Guidelines for Livestock Grazing Management.
  
- Existing grazing management practices or levels of grazing use on the Rabbit Basin Allotment will require modification or change prior to the next grazing season to promote achievement of the Oregon Standards for Rangeland Health and conform with the Guidelines for Livestock Grazing Management.

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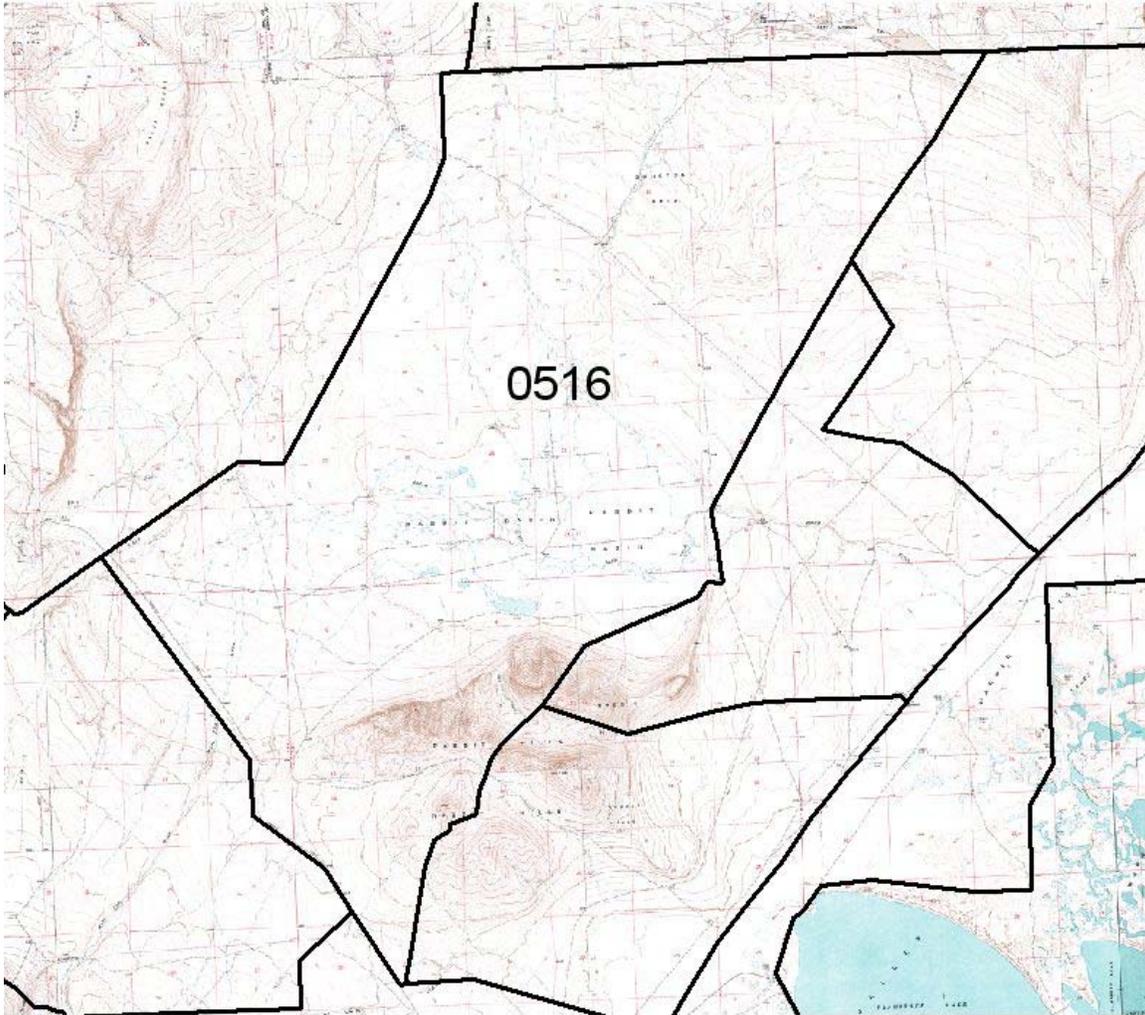
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Date

**Table 1.**  
**VEGETATION TYPES IN RABBIT HILLS ALLOTMENT 0516**

<b>Vegetation Type</b>	<b>Acres</b>	<b>Percent of Allotment</b>
<b>Grasses</b>		
AGCR Crested Wheatgrass	2,552	7%
BRTE Cheatgrass	2,311	7%
STTH Thurber's Needlegrass	421	1
<b>Grasses TOTAL</b>	<b>5,284</b>	<b>16%</b>
<b>Forbs</b>		
DESCU-BRTE Tanysmustard/Cheatgrass	842	3
MEAL Clover	82	T
<b>Forbs TOTAL</b>	<b>924</b>	<b>3%</b>
<b>Shrubs</b>		
ARAR Low sagebrush	114	T
ARTRT big sagebrush	368	1%
ARTRV mountain big sagebrush	157	T
ARTRW Wyoming big sagebrush	5,832	18%
SAVE greasewood	19	T
<b>Shrubs TOTAL</b>	<b>6,490</b>	<b>20%</b>
<b>Shrubs/Grasses</b>		
<b>Big Sage/Grass</b>		
ARSP-SIHY bud sagebrush	52	T
ARTRT-BRTE big sagebrush/cheatgrass	165	T
ARTRT-AGSP big sagebrush/blue bunch wheatgrass	1,313	4%
ARTR-ELCI big sagebrush/basin wildrye	891	3%
ARTRT-ELTR big sagebrush/ creeping wildrye	552	
ARTRT-FEID big sagebrush/Idaho fescue	354	1%
ARTRT-SIHY big sagebrush/bottlebrush squirreltail	1,810	24%
ARTRT-STTH big sagebrush/Thurber's needlegrass	730	2%
<b>Big Sage/Grass TOTAL</b>	<b>5,867</b>	<b>18%</b>
<b>Mountain Sage/Grass</b>		
ARTRV-BRTE mountain big sagebrush/cheatgrass	399	1%
<b>Wyoming Sage/Grass</b>		
ARTRW-ELTR Wyoming big sage/basin wildrye	3,454	11%
ARTRW-SIHY Wyoming big sage/bottlebrush squirreltail	957	3%
ARTRW-STTH Wyoming big sage/Thurber's needlegrass	1,853	9%
<b>Wyoming Sagebrush/Grass TOTAL</b>	<b>6,264</b>	<b>19%</b>
<b>Sagebrush/Grass TOTAL</b>	<b>12,530</b>	<b>39%</b>
<b>Babbitbrush/Grass</b>		
CHNA-AGCR rubber rabbitbrush/crested wheatgrass	71	T
CHVI-AGCR green rabbitbrush/crested wheatgrass	501	2%
CHNA-BRTE rubber rabbitbrush/cheatgrass	26	T
CHVI-SIHY green rabbitbrush/bottlebrush squirreltail	206	1%
<b>Babbitbrush/Grass TOTAL</b>		

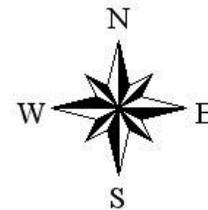
	<b>804</b>	<b>2%</b>
<b>Hopsage/Grass</b>		
GRPS-SIHY hopsage/bottlebrush squirreltail	346	1%
<b>Greasewood/Grass</b>		
SAVE-ELCI greasewood/basin wildrye	799	3%
SAVE-ELTR-DESCU greasewood/creeping wildrye/tanysmustard	700	2%
ARCA-IVAX silver sagebrush/poverty sumpweed	56	T
<b>TOTAL VEGETATION</b>	<b>27,933</b>	<b>87%</b>
Playa	603	2%
Rockland/ Rubble	205	1%
Unknown *	3,470	11%
<b>ALLOTMENT TOTAL</b>	<b>32,211</b>	

# Rabbit Basin Allotment 516



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 Allot Boundary



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