

Standards for Rangeland Health  
and  
Guidelines for Livestock Grazing Management  
for  
Public Lands in Oregon and Washington

for the

Hill Camp Allotment #00215

December 2013

The original Hill Camp Allotment Rangeland Health Assessment was conducted in 2004. This assessment included the Coleman Seeding, Basin, West, Northeast and Southeast Pastures. There are 3,932 AUMs of forage allocated on 32,138 acres of public land and 2,669 lands of private land to two permittees.

There are 23 long term trend photo plots in the allotment. A summary of these trend plots is in Table 2. There is one long term trend plot (HC-01) associated with a vegetation transect consisting of a Nested Frequency transect and photos. This transect was established in 1990 in the West pasture and was read 5 different years since 1990. The vegetation data for HC-01 is summarized in Table 3. There were new vegetation transects established at 21 of the long term trend plots in 2012

In the Rangeland Health Assessment in 2004, standard 2 was not being met. Three specific spring areas were responsible for this failure to meet standard 2. The problems at the springs were corrected by enlarging the existing exclosures and repairing the over flow pipes to return the water back to the riparian areas. Following implementation of these corrective actions BLM determined that all Standards are now being met. A summary of the health assessment of 2004 and an updated assessment is shown in the Table 1.

**Table 1. Summary of Rangeland Health Assessments for Hill Camp Allotment**

Standard	2004	2013	Comments
<b>1. Watershed Function – Uplands</b>	Met	Met	<p>The 2004 RHA found soils in the Hill Camp Allotment exhibited infiltration and permeability rates, moisture storage, and stability appropriate for soil, climate, and land form. Root occupancy for the soil was appropriate. Based on 1987 ESI data, the SSF rating showed 10% of the allotment was in Stable, 65% in Slight, and no acres in the moderate or higher SSF erosion classes; so there is little or no active soil erosion or evidence of past erosion in the area. In 2013, a summary of the vegetation trend plots indicate the vegetation cover is stable and there is still little or no active soil erosion.</p> <p>In 2004, the average actual use for the allotment over 20 years was 2,184 AUMs, compared to the average actual use of 3,472 AUMs in 20 years prior to 1984. The authorized use for the allotment is 3,932 AUMs. In 2004, the low average utilization across the allotment on native species such as bluebunch wheatgrass, bottlebrush squirreltail, Thurber’s needlgrass, and Idaho Fescue was about 37%. These utilization levels indicate that ample plant material was being left behind to protect the soil from erosion.</p> <p>The average utilization levels from 2004 to 2013 were similar to those seen in the 2004 RHA and the average actual use was lower. Therefore, the conclusion that ample plant material is being left behind to protect from soil erosion is still accurate in 2013 and the standard continues to be met.</p>
<b>2. Watershed Function - Riparian/ Wetland Areas</b>	Not Met	Met	<p>In 2004, the allotment contained about 54 acres of palustrine wetlands in PFC. However, the ID team determined that grazing at 3 springs (Game, Hidden, and Tim) was contributing to their failure to function at their site potential and, therefore, Standard 2 was not being met in these specific areas. The problems at these springs were corrected by enlarging the existing exclosures and repairing the overflow pipes to return water back into the riparian area (BLM 2004c). Following implementation, BLM determined this standard was being met or substantial progress towards meeting the standard had been made. In 2013, there is no change in this assessment.</p>

<p><b>3. Ecological Processes</b></p>	<p>Met</p>	<p>Met</p>	<p>In the 2004 RHA, an ID team made the following observations about the current plant communities: overall plant diversity was high with shrubs and grasses in excellent condition. There are 23 trend photo plots scattered around the allotment which began in the 1960s or 1970s and continue today. These photos illustrated the plant communities are either stable or improving across the allotment. The vigor, condition, and composition of the vegetation in the photos were influenced by the amount of moisture, the grazing schedule, and fire. But even taking into account these factors, the ecological condition of these sites has either remained stable or improved over the last 30 years, except that there has been an increase in juniper density at the sites where fire has not been present. Another noticeable trend is that following fire, the mountain big sagebrush returns to the site in 10-15 years. In 2013, an analysis of the 23 photo trend plots since 2004 found the same conclusions apply.</p> <p>In 2004 and in 2013 the allotment is supporting the current and proposed number of mule deer and pronghorn antelope identified by ODFW big game management plans.</p>
<p><b>4. Water Quality</b></p>	<p>Met</p>	<p>Met</p>	<p>No surface water or groundwater within the allotment has been listed for exceeding State Water Quality standards.</p>
<p><b>5. Native, Threatened &amp; Endangered, and Locally Important Species</b></p>	<p>Met</p>	<p>Met</p>	<p>The 2004 RHA found the allotment contained healthy, productive, and diverse plant and animal populations and communities that were appropriate to soil, climate, and landform.</p> <p>In 2004, no conflicts were identified between cattle grazing and wildlife species. There were two known sage-grouse leks in the allotment. In 2013, there are 3 occupied sage-grouse leks in the allotment. Sage-grouse habitat in the allotment has maintained an appropriate mix of suitable to marginal sage-grouse habitat under the current grazing management. It is expected that vegetation trends would remain static or improve slightly and provide adequate habitat for sage-grouse. In the long-term Western Juniper expansion in the Hill Camp Allotment could affect portions of suitable breeding habitat in the allotment.</p> <p>In the Coleman Seeding Pasture there is both Perennial Pepperweed (<i>Lepidium latifolium</i>) and Halogeton (<i>Halogeton glomeratus</i>). These two weeds have invaded from the private land to the west and along the Coleman Lake road. These weed sites are manageable and are currently being monitored and treated. The current grazing management does not appear to have any effect on these noxious weeds.</p> <p>No known sensitive plant species in the Allotment.</p> <p>In 2013, the allotment still contained healthy, productive, and diverse plant and animal populations and communities that are appropriate to soil, climate, and landform. For these reasons, this standard continues to be met.</p>

## Guidelines for Livestock Management

Existing grazing management practices or levels of grazing use on the Hillcamp Allotment are consistent with the Guidelines for Livestock Grazing Management (August 12, 1997). These pastures continue to be grazed under a rest rotation grazing system, and are provided growing season rest every 3<sup>rd</sup> year. The grazing season rest enables the grass species to provide adequate cover for infiltration, moisture storage and maintains diverse plants communities.

### 2013 Determination

Existing grazing management practices and levels of grazing use on the Hill Camp 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 Hill Camp 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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Thomas E. Rasmussen, Field Manager

12/4/13

Date

## Hill Camp Allotment Monitoring Summary 2013 (see Lakeview Resource Area Monitoring Files for Raw Data):

In 2013, Hill Camp Allotment was utilized from April 8 to Sept 30. The Hill Camp Allotment has 3,932 Active AUMs. The average actual use from 2004-2013 is 1,581 AUMs and target utilization level is 50%.

**Table 1. Actual Use and Utilization Hill Camp Allotment**

Year	Coleman Seeding Pasture		Basin Pasture		Southeast Pasture		Northeast Pasture		West** Pasture	
	AUMs	% Utilization	AUMS	% Utilization	AUMS	% Utilization	AUMS	% Utilization	AUM S	% Util
2013	REST		792		183		REST		587	49%
2012	124		61	31%	468	45%	16		298	50%
2011	189	28%	288	32%	436	22%	271	28%	REST	
2010	165	40%	54		REST	NA	947	48%	706	
2009	REST		127	38%*	478	44%	468	39%	557	
2008	137	43%	808		REST	NA	REST		884	
2007	99	37%	REST		863	38%	REST		339	
2006	136		103		581		244		317	
2005	REST		103		REST	NA	425		557	
2004	120		381		666		REST		185	
2003	132		46		REST	NA	463	49%	791	39%
2002	132	31%	371		779		219		656	
<b>Total</b>	<b>1232</b>		<b>3542</b>		<b>4271</b>		<b>3053</b>		<b>5290</b>	
<b>Ave.</b>	<b>112</b>	<b>36%</b>	<b>322</b>	<b>34%</b>	<b>388</b>	<b>37%</b>	<b>278</b>		<b>481</b>	46%

- In the Basin pasture in 2009 utilization was only done in the portion of the pasture (south of Highway 140) that was actually grazed. The majority of the pasture (north of Highway) 140 was rested and therefore no utilization was necessary.
- West pasture was always grazed after seed ripe in Late July, August and Sept and the highest AUM number (884 in 2008) was 68% of the estimated carrying capacity. In five of the eleven years the number of AUMs was 25% or less of the estimated carrying capacity (1,300 AUMs). The 10 year average for AUMs excluding the rest year (2011) was 41% of the estimated carrying capacity and the average of 21 acre/AUMs stocking rate is conservative for this mountain sagebrush community.

Utilization in the Hill Camp Allotment only reached the target utilization rate of 50% in one pasture (West) in one year (2012) and never exceeded the target rate.

The total active AUMs (averaged 1,581) did not exceed the permitted AUMS (3,932) AUMS) for the five pastures. The highest AUMS use was 2,157 AUMs in the 2002 and the lowest was 1,085 AUMS in 2005.

There are 23 permanent long term photo trend plots in the Hill Camp Allotment with one containing a vegetation transect (Table 2). The vegetation transect at trend plot HC-01 had stable to improving vegetation cover and composition since 1990. There was significantly higher vegetation cover in 1998 and the frequency of sagebrush was significantly lower (Table 3). This was only five years after the Hill Camp prescribed burn which removed much of the sagebrush and increased the grass cover. By 2006, the next year the plot was read, the sagebrush had begun to return, being present in 29% of the plots and this results in lower grass cover.

Of the 23 photo plots around the allotment, there are six in NE pasture and the photos show stable to increasing grass cover and significantly more sagebrush since the 1970's. The five photo plots in the SE pasture show similar results with the grass cover being stable but the sagebrush has returned since the pasture was sprayed in 1963 and parts were burned in 1974. The eight photos in the West pasture in general show stable to increasing grass cover and more sagebrush since the 1970's. The exception is the four plots within the 1992 prescribed burn area. These plots had an increase in grass following the 1992 burn and then the return of sagebrush over the next 10-15 years. In the photos in the West pasture, where juniper trees are visible there has been an increase in the number and size of the trees since the 1970's. There are three photo plots in the Coleman Seeding pasture and the seeding appears to be stable with an increase in the vigor and size of the shrubs in the two plots where shrubs have returned. All the photos for the 23 trend plots in the allotment are on file at the Lakeview Resource Area office.

**Table 2. Ecological Trend by Pasture Based on Long-term Monitoring Photos and Plots on the Hill Camp Allotment (00215)**

Pasture	Monitoring plot#	Photo Trend Years Taken	Transect Method Years	Trend
West	HC-01	Photo 17 Years 1969-2011	Nested Frequency 5 Years 1990-2013	Trend Upward 1990-1998 Static 1998-2013
Northeast	HC-02	Photo 18 Years 1968-2012	Photo	Static Trend Sagebrush Treated 1968 Sagebrush returned 1979
Northeast	HC-03	Photo 18 Years 1964-2012	Photo	Static Trend
Northeast	HC-04	Photo 18 Years 1967-2012	Photo	Sagebrush sprayed in 1963 Sagebrush returned by 1980 Trend Static since 1980
Southeast	HC-05	Photo 16 Years 1964-2012	Photo	Sagebrush sprayed in 1963 Sagebrush returned by 1975 Trend Static since 1985
West	HC-06	Photo 8 Years 1964-2012	Photo	Sagebrush Burned in 1992 Sagebrush returned in 2003 Trend Upward
West	HC-07	Photo 10 Years 1964-2012	Photo	Trend Static
West	HC-08	Photo 8 Years 1964-2012	Photo	Trend Static
West	HC-09	Photo 9 Years 1964-2012	Photo	Sagebrush sprayed in 1963 Sagebrush returned by 1971 Trend Static since 1971 Juniper density increasing since 1971
Southeast	HC-10	Photo 18 years 1969-2012	Photo	In drainage upward trend 1969-1994 Static trend 1994-2012
West	HC-11	Photo 8 years 1968-2008	Photo	Sagebrush Burned in 1992 Sagebrush returned in 2008 Trend Upward
Basin	HC-12	Photo 10 years 1970-2012	Photo	Trend Static
Basin	HC-13	Photo 13 Years 1967-2012	Photo	Trend Static
Southeast	HC-14	Photo 13 Years 1972-2012	Photo	Sagebrush Burned in 1972 Sagebrush returned by 1986 Trend Static since 1986
Southeast	HC-15	Photo 14 Years 1972-2012	Photo	Sagebrush Burned in 1972 and 1974 Sagebrush returned by

				1986 Trend Static since 1986
<b>Northeast</b>	HC-16	Photo 16 Years 1972-2012	Photo	Sagebrush sprayed in 1963 Sagebrush returned by 1983 Trend Static since 1983
<b>Coleman Seeding</b>	HC-18	Photo 14 Years 1966-2012	Photo	Seeded to crested wheatgrass in 1963 Shrubs are common by 1969 Trend static since 1986
<b>Coleman Seeding</b>	HC-19	Photo 10 Years 1968-2012		Seeded to crested wheatgrass in 1963 Trend static No Shrubs
<b>Coleman Seeding</b>	HC-20	Photo 10 Years 1986-2012		Seeded to crested wheatgrass in 1963 Shrubs were present by 1986 and common by 1990 Trend static since 1990
<b>West-Southeast</b>	HC-171 A&B	Photo 8 Years 1976-2009	Photo	Sagebrush burned in 1974 Sagebrush returned by 1985 Tends Static since 1985
<b>Southeast</b>	HC-172 A&B&C	Photo 11 Years 1974 -2012		Sagebrush burned in 1974 Sagebrush returned by 1983 Tends Static since 1983
<b>Southeast</b>	HC-173 A&B	Photo 12 Years 1975-2012	Photo	Seeded in 1975 Trend Staitic until 2002 Some Shrubs coming into seeding
<b>West</b>	HC-437	Photo 10 Years 1968-2012	Photo	Sagebrush sprayed in 1963 Sagebrush returned by 1970 Trend Static since 19710

**Table 3. Hill Camp Allotment 0215  
Nested Frequency/ Summary HC-01 West Pasture**

YEAR	1990	1998	2006	2009	2013
BAREGROUND	34%	14%	16%	15%	24%
ROCK	1%	1%	1%	T	1%
LITTER	53%	38%	53%	50%	41%
VEGETATION	13%	46%	29%	26%	33%
SPECIES	PERCENT COVER BY SPECIES				
SIHY	N/A	N/A	4%	1%	1%
POSE	N/A	N/A	3%	7%	9%
STTH	N/A	N/A	1%	1%	T
AGSP	N/A	N/A	2%	0	2%
KOCR	N/A	N/A	0.4%	0	0
FEID	N/A	N/A	9%	7%	8%
ELCI	N/A	N/A	0	0	T
ARTRV	N/A	N/A	9%	9%	11%
CHRY SPP	N/A	N/A	1%	0	1%
Lupine	N/A	N/A	0	1%	0
SPECIES	RELATIVE FREQUENCY BY SPECIES				
SIHY	57%	74%	60%	55%	36%
POSE	78%	27%	61%	68%	81%
STTH	3%	13%	5%	23%	29%
ELCI	0	6%	1%	0	3%
AGSP	6%	14%	10%	23%	20%
KOCR	0	8%	20%	17%	1%
FEID	60%	40%	75%	77%	63%
ARTRV	59%	5%	31%	29%	34%
CArex	N/A	N/A	0	0	5%
Crepis	N/A	N/A	0	0	8%
Lupine	N/A	N/A	42%	36%	33%