

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

for the

Rahilly Gravelly Allotment #00212

December 2013

The original Rahilly Gravelly Allotment Rangeland Health Assessment was conducted in 1999. This assessment included the Coleman Lake, Rahilly, Sucker Creek, Horse Creek, Nevada, and Pederson Pastures. The grazing system is a rest rotation system grazing 3 of 4 main pastures each year. The Horse Creek Pasture is a riparian pasture under consultation with the USFWS and a Biological Opinion related to threatened Warner Suckders, which allow it to be grazed every other year. The Pederson Pasture operates like an FRF pasture and is grazed in the summer and the winter in conjunction with private meadow land. There are 1,781 AUMs of forage allocated on 33,285 acres of public land and 2,031 lands of private land to one permittee.

There are 4 long term trend plots in the allotment with one in Rahilly Pasture, one in Nevada Pasture and 2 in Sucker Creek Pasture. Three of the trend plots (RH-01, RH-02, RH-04) are long term photo plots with associated step-toe vegetation transects. One of the trend plots in the Sucker Creek (RH-03) pasture is simply a long term photo plot. Attached is a summary of the Rahilly Gravelly Allotment Monitoring data.

In the Standards and Guidelines Assessment in 1999 both standards 2 and 4 were not being met, but it was determined that existing grazing management was not a significant factor in not meeting the Standards. It was determined that existing grazing management was promoting achievement of significant progress toward the Oregon Standards for Rangeland Health and conform with the Guidelines for Livestock Grazing Management. A summary of the assessment of the Standards in 1999 and an updated assessment is shown in Table 1.

Table 1. Rangeland Health Assessment for Rahilly Gravelly Allotment

Standard	1999	2013	Comments
1. Watershed Function – Uplands	Met	Met	<p>The 1999 RHA found upland soils in the allotment exhibited infiltration and permeability rates, moisture storage, and stability appropriate for soil, climate, and land form. Root occupancy in the soil was appropriate. 1% of the allotment was rated as stable, 87% was rated as slight, 5% was rated moderate for erosion conditions. The remaining 8% was unknown. OAT was upward on 2%, static on 86%, and unknown on 8% of the allotment. Photo trend stations found a static trend on half of the sites and an upward trend on the other half. The step-toe vegetation transects depicted an upward trend with an increase in the amount of vegetation present versus bare ground.</p> <p>Recent photos and transects (2000-2013) continue to show stable to increasing vegetation cover across all pastures. In 1999, 70% of the allotment was in mid seral and 13% was in the late seral ecological condition. Assessing the photos and transect data collected from 2000-2012, it appears the ecological condition has been stable or improving across the allotment. There is good plant vigor and cover allowing the upland soils to exhibit infiltration and permeability rates, moisture storage, and stability appropriate to soils, climate and landform.</p>
2. Watershed Function	Not Met	Met	In 1999, approximately 1,656 acres of lentic wetlands in the allotment were rated in PFC and 127 acres were nonfunctional (May Lake). This condition appeared to

Riparian/ Wetland Areas			<p>be the result of lakebed pits piercing the clay seal of the playa, allowing de-watering. Livestock grazing was not the causal factor.</p> <p>Lotic PFC site inventories were completed in 1996 on Horse Creek and Horse Creek tributary. Two reaches (about 50%) on Horse Creek were rated as Functional at Risk with an Upward Trend; the remaining reaches were rated as PFC. In 2000, one of those two reaches had improved and was rated as PFC. The uppermost portion of Horse Creek is now believed to be at PFC, based on the field reconnaissance by the Fish Biologist and BLM staff. Photos points established in 1989 that were retaken in 2013 show increases in native riparian vegetation, including willows, sedges and rushes, as well as stream channel narrowing and deepening, and increases in stream bank stability. A riparian scorecard assessment (Riegel, unpublished) was completed in 2013 and showed the site to be in moderate to high ecological status.</p> <p>All available data, photo monitoring on file at Lakeview BLM, and professional judgment indicate improving trends in fish habitat and riparian conditions throughout the allotment. For these reasons, this standard is now being met in the allotment.</p>
3. Ecological Processes	Met	Met	<p>In the 1999 RHA, the OAT (ESI, 1987) was in upward trend on 2% and static on 86% of the allotment. The vegetation transect data showed an increase in vegetation cover between 1986 and 1999, indicating an upward trend. In 2013, recent trend data (2000-2012) indicates vegetation communities in the allotment are stable since 1999.</p> <p>The allotment supports most of the terrestrial animals common to the sagebrush steppe in the Great Basin. The allotment provides habitat for huntable populations of mule deer, pronghorn antelope, elk, and sage-grouse. There are 350 AUMs of forage allocated to wildlife (329 for deer/antelope and 21 for other wildlife) and are adequate to support current wildlife populations. There is currently no major competition between wildlife and domestic livestock for forage, either early green-up grasses and forbs, or winter browse such as antelope bitterbrush and curl-leaf mountain mahogany. The allotment lies within ODFW's Warner Big Game Management Unit. Current populations are slightly below management objectives for deer and substantially below that proposed for elk. The entire allotment contains yearlong habitat for mule deer, and portions of the allotment are used by elk throughout the year. The allotment also contains year-round habitat for antelope and sage-grouse; however, no crucial habitat has been identified for either species.</p>
4. Water Quality	Not Met	Met	<p>In 1999, Horse Creek did not meet state water quality standards for temperature. No temperature data has been collected since and it is unknown whether Horse Creek is currently meeting state water quality standards. However, due to changes in grazing management, including more rest of the pasture and less use in the riparian area, there has been noticeable improvement in stream and riparian conditions. Photos points established in 1989 that were retaken in 2013 show increases in native riparian vegetation, including willows, sedges and rushes, as well as stream channel narrowing and deepening, and increases in stream bank stability. A riparian scorecard assessment (Riegel, unpublished) was completed in 2013 and showed the site to be in moderate to high ecological status.</p> <p>All available data, photo monitoring on file at Lakeview BLM, and professional judgment indicate improving trends in riparian conditions, which should lead to improved water quality throughout the allotment. For these reasons, this standard is now being met.</p>
5. Native, T/E,	Met	Met	<p>In 1999, the diversity of wildlife and plant species was an indication of health and</p>

<p>and Locally Important Species</p>		<p>productivity found in the different habitats within the allotment. The habitat provided within the allotment is crucial to wintering deer, in that it adjoins with winter range on the forest to the west and to BLM-administered winter range to the north and south. It provides habitat connectivity, as well as a spatial distribution of lower elevation range that is critical during high snowfall years. The deer, elk, and antelope populations are healthy and increasing in number within the allotment; habitat quantity and quality do not appear to be limiting population size or health. Coyote predation is thought to be depressing mule deer recruitment; however, populations continue to fluctuate at, or slightly below, ODFW's Management Objective for the unit. A general hunt season is slowing the population expansion of elk within the unit. However, if ODFW is unable to limit future expansion to the proposed Management Objective for the area, competition with domestic livestock could occur, and depredation on private lands could become an issue.</p> <p>The allotment also provides habitat for numerous small, nongame birds and mammals common to the Great Basin, including sage-grouse habitat. In the 1999 RHA there were 7 known sage grouse leks found within the allotment. Sage grouse populations, like the rest of southeastern Oregon, were stable to declining. In 2013 following more intensive sage-grouse studies, there are 3 occupied leks and 6 unoccupied pending leks in this allotment. Sagegrouse populations in Lake County are stable to increasing (ODFW, 2011). 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 could affect portions of suitable breeding habitat in the allotment.</p> <p>The allotment also provides habitat for raptors and some BLM and state sensitive wildlife species and federally listed species. No critical habitat or limitations have been identified for any of these species, which may include wintering bald eagles, pygmy rabbits, and various sensitive bat species.</p> <p>The Warner Sucker is listed as a Threatened Species under the ESA. There is no occupied habitat in the allotment. Because Horse Creek flows into occupied habitat less than a mile below the grazed pasture, it was determined in Section 7 consultation that grazing was having an adverse effect. This effect has been minimized by restrictions placed on riparian grazing and the USFWS issuing a Biological Opinion to authorize incidental take of the species.</p> <p>The Foscett Speckled Dace is listed as a Threatened Species under the ESA. There is occupied habitat in two springs in the Coleman Lake Pasture. Grazing has been excluded from both spring sources. No authorized grazing occurs at Dace Spring as the fish habitat at the site is completely excluded. Some authorized grazing may occur on occupied dace habitat at the lower end of Foscett Spring, near the shore of Coleman Lake, to help maintain the open water habitat conditions preferred by the species; this action is scheduled to be consulted on with USFWS this winter. Warner Redband Trout, a Bureau Sensitive Species, is found in Twelvemile Creek at its confluence with Horse Creek below the allotment.</p> <p>Noxious weeds are known to occur along travel routes, riparian areas, and waterholes. The rest rotation system will allow for control of the current weeds and will minimize the potential of weed populations increasing. The current rest rotation system maintains or improves the native plant community and this reduces the opportunity for the spread of noxious weeds.</p>
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Guidelines for Livestock Management

Existing grazing management practices or levels of grazing use on the Rahilly Gravelly 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. The growing 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 or levels of grazing use on the Rahilly Gravelly 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 Rahilly Gravelly 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.



Thomas E. Rasmussen, Field Manager

12/4/13

Date

Rahilly Gravelly Allotment Monitoring Summary 2013 (see Lakeview Resource Area Monitoring Files for Raw Data):

In 2013, Rahilly Gravelly Allotment was utilized from 4/2-9/16. The Rahilly Gravelly Allotment has 1,781 Active AUMs. The average actual use from 2004-2013 is 1,111 AUMs and target utilization level is 50%.

Table 2. Actual Use and Utilization Rahilly Gravelly Allotment

Year	Coleman Lake Pasture		Sucker Creek Pasture		Rahilly Pasture		Nevada Pasture		Horse Creek Pasture
	AUMs	% Utilization	AUMS	% Utilization	AUMS	% Utilization	AUMS	% Utilization	
2013	215	50%	REST		582	49%	230		REST
2012	243		515	51%	36		REST		REST
2011	247	27%	REST		787	43%	343		REST
2010	232	44%	627	45%	REST		235		REST
2009	REST		263		475		169		REST
2008	197	50%	606	51%	REST		199		REST
2007	232	57%	REST		861		250		REST
2006	293		813		REST		229		REST
2005	317		REST		781		361		REST
2004	293		511		REST		125		REST
2003	346		REST		774		101		REST
2002	316	27%	152	22%	264		112		REST
Total	2931		3487		4560		2354		0
Average	266	43%	436		570		214		

Utilization in the Rahilly Gravelly Allotment exceeded the target utilization of 50% in two pastures during three different years. There was 51% use in the Sucker Creek Pasture during 2008 and 2012, but this is not significantly different from 50%. The 57% use level in the Coleman Lake Pasture in 2007 was the result of reduced grass production as drought conditions existed in the 12 months prior to the 2007 grazing season. During the 12 month period prior to the 2007 grazing season, the precipitation measured at the three nearest weather stations was only 57% of the long term annual mean. This significantly lower precipitation limited grass growth and reduced the amount of forage available to livestock, resulting in higher utilization levels on the grass that was available.

The total active AUMs (averaged 1,101) did not exceed the permitted AUMS (1,647 AUMS) for the four pastures, not including the Pederson Pasture, which is managed like an FRF pasture. There is 134 AUMS

in the Pederson Pasture. The highest AUMS use was 1,459 AUMs in the 2005 and the lowest was 794 AUMS in 2012.

There are 4 permanent long term trend plots in the Rahilly Gravelly Allotment with 1 being photo trend plot and 3 plots having photo plots and vegetation transects. A summary of the 4 plots is shown in Table 3. A summary of the vegetation data for the 3 plots with vegetation transects is shown in Tables 4-6. All the photos for the four trend plots in the allotment are on file at the Lakeview Resource Area office.

The three vegetation transects RG-01 in the Sucker Creek Pasture, RG-03 in Rahilly Pasture and RG-04 in the Nevada Pasture illustrate similar increases in total vegetation cover between 1986 and 2010 (Tables 1,2 and 3). The RG-04 in the Nevada Pasture has seen the biggest increase in perennial grass cover. The rest rotation grazing system and improved management has been responsible for some increase in the vegetation cover as the 4 photo trend plots also show either stable or slightly improved ecological conditions since the 1970's. The three vegetation transects are in different pastures but all have significant increases in vegetation cover since the 1980's. Over half of the significant increase in vegetation cover was shrub cover (sagebrush and antelope bitterbrush). This increase is partially the result of bigger and more robust shrubs as seen in the photos and partially an artifact of the sampling method and the way shrubs were measured. The percent cover of the perennial grass species did increase significantly from 1985 to 2013. At RM-01 the increase in perennial grass cover was from 4% in 1985 to 19% in 2013 (Table 1). At RM-03 the increase in perennial grass cover was from 9% in 1985 to 15% in 2013 (Table 2) At RM-04 the increase in perennial grass cover was from 10% in 1985 to 19% in 2013 (Table 3). Most of these increases in perennial grass cover occurred by 1998 and the cover data has been stable since then. The frequency data reflects a minor change in the species composition as Sandberg's bluegrass is still the dominate grass but there is an increase in the frequency of the shrubs.

The photos at all the trend plots (RG01- 04, show vegetation cover and species composition is stable or improving between 1970 and 2012. There was an increase in the size and density of juniper trees in the backgrounds of photos RG-02 (Sucker Creek Pasture) RG-03 (Rahilly Pasture) and RG-04 (Nevada Pasture) between the 1970's and the present

Table 3 . Ecological Trend by Pasture Based on Long-term Monitoring Photos and Plots on the Rahilly Gravelly Allotment (00213)

Pasture	Monitoring plot#	Photo Trend Years Taken	Transect Method Years	Trend
Sucker Creek	RG-01	Photo 10 years 1983-2013	Frequency Steptoe 9 Years 1985-2013	Vegetation trend Upward 1985-1998 Static 1998-2013
Sucker Creek	RG-02	Photo 11 years 1976-2012	Photo	Photo Trend Stable
Rahilly	RG-03	Photo 10 years 1971-2013	Frequency Steptoe 6 Years 1985-2013	Vegetation trend Upward 1985-1998 Static 1998-2013
Nevada	RG-04	Photo 11 years 1971-2013 More Juniper and Antelope Bitterbrush	Frequency Steptoe 6 Years 1985-2013	Vegetation trend Upward 1985-1998 Static 1998-2013

Table 4. Rahilly Gravelly Allotment 0212

RG-01 Transect Sucker Creek pasture Frequency/Step Toe Point Summary

YEAR	1985	1989	1992	1995	1998	2001	2006	2009	2013
BAREGROUND	5%	16%	10%	31%	10%	10%	6%	10%	11%
ROCK	55%	42%	57%	54%	51%	47%	40%	37%	35%
LITTER	38%	21%	19%	6%	7%	22%	16%	18%	11%
VEGETATION	7%	20%	14%	9%	32%	21%	38%	35%	43%
SPECIES	PERCENT COVER BY SPECIES								
SIHY	1%	0	0	1%	9%	1%	4%	3%	2%
BRJA	1%	0	0	0	2%	0	2%	0	0
AAFF	0	3%	0	0	0	0	0	0	0
POSE	3%	12%	6%	6%	15%	10%	9%	13%	17%
PPFF	0	0	1%		2%	0	0	0	0
MOSS	0	1%	0	0	0	0	0	0	0
ARAR	2%	4%	2%	0	4%	4%	23%	19%	22%
PHLOX	0	0	5%	0	0	0	0	0	0
Eriog	0	0	0	0	0	1%	0	0	0
STTH	0	0	0	0	0	1%	0	0	0
GRSP	0	0	0	0	0	1%	0	0	1
ARTR	0	0	0	0	0	3%	0	0	0
SPECIES	RELATIVE FREQUENCY BY SPECIES								
SIHY	8%	7%	3%	7%	14%	6%	13%	18%	6%
PHLOX	1%	2%	22%	0	0	0	0	0	0
PPFF	3%	13%	5%	23%	18%	3%	0	0	0
POSE	82%	66%	62%	64%	57%	72%	56%	59%	66%
ARAR	6	12	8%	6%	11%	8%	28%	22%	25%
STTH	0	0	0	0	0	3%	2%	0	0
ARTR	0	0	0	0	0	4%	0	0	0
GRSP	0	0	0	0	0	1%	0	0	1%
Eriog	0	0	0	0	0	2%	0	0	0
TECA	0	0	0	0	0	1%	0	0	1%

Table 5. Rahilly Gravelly Allotment 0212 RG-03 Transect Rahilly pasture Frequency/Step Toe Point Summary

YEAR	1985	1998	2001	2007	2010	2013
BAREGROUND	23%	35%	27%	30%	25%	23%
ROCK	13%	15%	9%	3%	3%	9%
LITTER	53%	16%	29%	29%	23%	35%
Mosses	0	0	0	0	0	2%
VEGETATION	11%	34%	35%	32%	49%	31%
SPECIES	PERCENT COVER BY SPECIES					
SIHY	0	6%	1%	1%	5%	1%
Lupine	0	4%	0	0	0	1%
STTH	3%	6%	4%	4%	0	0
POSE	6%	5%	9%	9%	17%	14%
PPFF	0	3%	0	0	0	0
CHNA	0	1%	0	0	0	0
ARAR	0	2%	1%	0	2%	0
ARTR	1%	7%	19%	13%	17%	14%
PHLOX	1%	0	0	0	0	0
ATSP	0	0	1%	0	1%	0
ELTR	0	0	0	1%	0	0
BRTE	0	0	0	0	2%	1%
AAFF	0	0	0	0	5%	0
Species	RELATIVE FREQUENCY BY SPECIES					
SIHY	18%	16%	5%	14%	12%	10%
PHLOX	2%	1%	0	0	0	0
PPFF	0	25%	0	0	0	0
POSE	45%	21%	54%	63%	49%	64%
ARAR	0	7%	0	0	2%	0
ARTR	16%	12%	24%	16%	18%	19%
CHNA	2%	2%	0	0	0	0
STTH	13%	7%	14%	6%	8%	2%
Lupine	0	9%	0	0	0	2%
PONE	2%	0	0	0	0	0
ELTR	2%	0	0	0	0	2%
ELCI	0	0	0	0	0	1%

Table 6. Rahilly Gravelly Allotment 0212 RG-04 Transect Nevada pasture Frequency/Step Toe Point Summary

YEAR	1985	1998	2001	2006	2009	2013
BAREGROUND	15%	31%	10%	11%	7%	11%
ROCK	2%	5%	6%	7%	2%	5%
LITTER	67%	25%	43%	45%	41%	36%
VEGETATION	16%	39%	41%	37%	37%	48%
SPECIES	PERCENT COVER BY SPECIES					
SIHY	4%	5%	3%	0	9%	2%
BRTE	1%	0	0	0	5%	4%
STTH	1%	8%	5%	2%	1%	5%
POSE	5%	9%	6%	6%	9%	9%
FEID	0	0	0	9%	8%	3%
PPFF	1%	2%	1%	0	1%	0
PHMI	1%	0	0	0	0	0
PUTR	1%	3%	12%	7%	7%	9%
ARTR	1%	7%	6%	8%	5%	10%
JUOC	1%	1%	0	1%	1%	0
AGSP	0	2%	0	2%	2%	0
PHLOX	0	1%	0	0	0	0
CHVI	0	1%	1%	1%	1%	5%
TECA	0	0	2%	0	0	1%
MoSS	0	0	3%	2%	0	0
CEMO	0	0	2%	0	1%	0
Carex	0	0	0	1%	0	0
SPECIES	RELATIVE FREQUENCY BY SPECIES					
SIHY	32%	19%	13%	6%	16%	11%
PHLOX	2%	2%	0	0	0	0
PPFF	3%	9%	5%	0	1%	0
POSE	35%	32%	25%	32%	37%	40%
PUTR	4%	4%	12%	7%	7%	10%
ARTR	8%	10%	8%	10%	6%	10%
PHMI	1%	0	0	0	0	0
STTH	8%	12%	23%	8%	2%	12%
Carex	2%	0	0	1%	0	2%
FEID	3%	0	3%	33%	25%	5%
JUOC	2%	0	0	1%	1%	0
AGSP	0	5%	2%	0	2%	0
CHVI	0	2%	3%	1%	1%	5%
Lupine	0	4%	0	1%	0	0
CEMO	0	0	3%	0	1%	0
TECA	0	0	3%	0	0	1
MOSS	0	0	0	0	0	0
Crepis	0	0	0	0	0	3%
ARLU	0	0	0	0	0	1%