

# **Land Health Evaluation Report**

## **Whitehorse and Kimber Diorite Allotments**

Bureau of Land Management

Butte Field Office

December 20, 2012

### **Introduction and Assessment Process**

This report documents whether land health standards were achieved for the Whitehorse and Kimber Diorite grazing allotments administered by the Bureau of Land Management's Butte Field Office. Standards for Rangeland Health were evaluated utilizing an interdisciplinary team (IDT) of resource specialists.

Rangeland Health Standards for Western Montana are described in detail in the Record of Decision (ROD) issued for Standards for Rangeland Health and Guidelines for Livestock Grazing Management for Montana, North Dakota and South Dakota (August 1997). The preamble of the Western Montana Standards states: "The purpose of the S&Gs (Standards and Guidelines) are to facilitate the achievement and maintenance of healthy, properly functioning ecosystems within the historic and natural range of variability for long-term sustainable use." Standards are statements of physical and biological condition or degree of function required for healthy sustainable lands. Achieving or making significant progress towards these functions and conditions is required of all uses of public land as stated in 43 CFR 4180.1.

This report contains an evaluation of each of the five standards:

- Standard #1 Upland Health
- Standard #2 Riparian/Wetland Health
- Standard #3 Water Quality
- Standard #4 Air Quality
- Standard #5 Biodiversity

Available monitoring data from both upland and riparian sites, existing inventories, historical photographs and standardized methodology are used by an IDT to assess condition and function. Condition/function declarations regarding are expressed as:

- Proper Functioning Condition (PFC)
- Functioning at Risk (FAR), which is assigned a trend of up, down, static or not apparent
- Nonfunctioning (NF)

Standards are met when conditions are at PFC or FAR with an upward trend. This is dependent on scope and scale. The BLM will consider the information contained in this report, along with public scoping and other sources of information, to make a determination regarding causal factors and courses of action to be analyzed in a National Environmental Policy Act (NEPA) document.

## **General Allotment Summary**

**Allotment Name/Number:** Whitehorse 20222  
**Current Management Category:** M (Maintain)  
**Location:** Broadwater County, T8N, R1E, Sec. 29, 32  
**Public Acres:** 547  
**Season of Use:** 6/10 – 10/15  
**Public Animal Unit Months:** 87  
**Assessment Date/Period:** July 10, 2012

**Allotment Name/Number:** Kimber Diorite 20227  
**Current Management Category:** I (Improve)  
**Location:** Broadwater County, T8N, R1E, Sec. 19, 20, 28, 29, 30, 31, 32, 34  
**Public Acres:** 2,249  
**Season of Use:** 5/15-10/15  
**Public Animal Unit Months:** 221  
**Assessment Date/Period:** July 11, 2012

The Whitehorse and Kimber Diorite allotments are located between 6-10 miles northwest of Townsend, MT. These allotments are adjacent to each other and are similar in habitat type, so are therefore combined into one report. Elevation on BLM land ranges from about 4,000 feet on the east end of the Kimber Diorite allotment to about 5,200 feet on the west side of this allotment. Vegetation communities are mostly grasslands in the eastern and lower elevation portions, transitioning to more sagebrush and some conifer in the western upper elevations.

The Whitehorse allotment consists of only one pasture, containing about 547 federal acres and 999 private acres. Elevation of this allotment ranges from approximately 4,100 to 4,500 feet. This allotment is grazed in conjunction with another BLM allotment, the Beaver allotment, and allotments on the Helena National Forest (HNF). One year, Whitehorse is used in mid-June as cattle are being moved from private lands up to the HNF, then cattle are moved down from the HNF to the Beaver allotment in early October. The next year the rotation is reversed.

The Kimber Diorite allotment is divided into 11 total pastures. Seven of these include BLM land, one pasture is entirely private, and three pastures are on HNF land. Private lands in the allotment are also in a state conservation easement. In total there are about 2,249 BLM acres, 1,920 HNF acres, and 2,069 private/conservation easement acres. Only the seven pastures with BLM land were included in this assessment. The Section 34 East, Section 34 West, Highway, and Railroad pastures are all BLM land. The Lower Kimber, Upper Kimber, and Kelly pastures are a mix of BLM and private land. (Please refer to attached map.)

Grazing at Kimber-Diorite allotment is managed under a 2001 Allotment Management Plan (AMP). The AMP outlines a set 3-year rest rotation grazing schedule for six

pastures. However, the grazing schedule has never been followed to date because of problems with locoweed infestations in the spring, which prevent use of one or all of the lower elevation pastures. A provision in the AMP, however, allows for changes to the scheduled rotation due to locoweed. As a result, the grazing system has evolved into a variable pasture rotation with grazed pastures usually being rested or used at a different time the following year until the locoweed issue is successfully addressed.

Summary of Standards Achieved --Yes, No, N/A (Not Applicable)--						
Allotment Name	Allot #	1. Upland	2. Riparian	3. Water Quality	4. Air Quality	5. Biodiversity
Whitehorse	20222	Yes	N/A	N/A	Yes	Yes
Kimber Diorite	20227	Yes	Yes	Yes	Yes	Yes

### **Soils Information**

Soils in most of the lower elevations of both allotments consist of the Radersburg very cobbly loam type. In this soil type, slopes are 2-5%; parent material consists of gravelly and cobbly alluvium; organic matter in the surface horizon is about 3%; average annual precipitation is 10-14”; the natural drainage class is well drained and this soil does not meet hydric criteria.

Soils in the upper elevations of the Kimber Diorite allotment consist of the Ess-Cheadle complex. Slopes in this type are 35-60%; parent material consists of cobbly and stony alluvium or colluvium; depth to a root restrictive layer is greater than 60”; organic matter content in the surface horizon is about 3%; average annual precipitation should be 15-19”; the natural drainage class is well drained and the soil does not meet hydric criteria.

Musselshell components make up the remainder of the soil types in the allotments and occur in mid-elevation area and small inclusions. Slopes can range from 2-9%; organic content in the surface horizon is about 2%; average annual precipitation is 10-14”.

### **Rangeland Health Standards Evaluation and Rationale**

The issue of scope and scale must be kept in mind when evaluating each standard. It is recognized that isolated sites within a landscape may be Functioning at Risk (FAR) and not meeting the standards; however, considering broader scope and scale, the area may be deemed in Proper Functioning Condition (PFC). Likewise, isolated sites may be in PFC, but, overall, the resource within the allotment or area could be FAR and not meeting standards. Therefore, no single indicator provides sufficient information to determine rangeland health. Indicators are used in combination to provide information necessary to make rangeland health determinations.

**Western Montana Standard #1**  
***“Uplands are in Proper Functioning Condition”***

**Finding:** Standard is met

**Rationale**

For upland site assessments, a total of 17 indicators are used to rate the following: 1) soil and site stability, 2) hydrologic function, and 3) biotic integrity (Pellant et al. 2005).

Upland assessments were completed in the Whitehorse allotment single pasture, and the Kelly, Upper Kimber, Lower Kimber, and Section 34 East pastures of the Kimber Diorite allotment. Pasture walkthrough surveys were done in the Highway, Railroad, and Section 34 West pastures. This work was done in the second week of July, 2012.

In the Whitehorse allotment, 15 of 17 indicators were rated as none-to-slight departure from what should be expected for the site. *Invasive plants* and *reproductive capability of perennial plants*, indicators in the biotic integrity category, received slight-to-moderate departure ratings. Some cheatgrass, leafy spurge, and knapweed were present in the allotment, but were a minor component. Grasses in this allotment seem to be producing fewer seed heads than expected, possibly due to low utilization stress or lack of precipitation. The Whitehorse Allotment has no established monitoring sites.

The Kimber Diorite allotment is a bit more complex. The following table shows the amount of departure from expected reference site conditions in the pastures where assessment plots were completed:

	<b>Soil &amp; Site Stability</b>	<b>Hydrologic Function</b>	<b>Biotic Integrity</b>
<b>Kelly</b>	S-M	S-M	S-M
<b>Upper Kimber</b>	N-S	N-S	S-M
<b>Lower Kimber</b>	N-S	N-S	S-M
<b>Section 34 E</b>	N-S	S-M	M

(N-S = none-to-slight, S-M = slight-to-moderate, M = moderate)

The S-M ratings for the Kelly pasture were primarily due to an increase over the expected amount of club moss ground cover, which reduces bare ground and moisture infiltration availability for other plants. Plant litter accumulation is correspondingly reduced. There were also some cheatgrass patches and juniper colonization into drainage areas where this would not be expected in a natural disturbance regime.

In the Upper Kimber pasture, biotic integrity was lower than expected due to juniper expansion into grasslands beyond what is expected for the site, and also patches of toadflax, knapweed, and cheatgrass.

In the Lower Kimber pasture, club moss was greater than expected and contributed to lower biological integrity. The increased club moss results in less area and moisture availability for grasses and shrubs, which in turn results in less cover of desirable

perennial grasses and less plant litter than expected. There was very little conifer colonization and weed occurrence in this pasture.

The Section 34 East pasture had good soil and site stability, very little if any club moss, and no noxious weeds were noted. However, several concerns were noted regarding vegetation condition. A cutworm infestation in recent years has resulted in reduced vigor, cover, and composition of perennial bunch grasses. Plant production is low and litter is correspondingly low. Prickly pear is very prevalent in the pasture, and there is more blue grama than expected.

On the pastures where walkthrough surveys were completed, the Highway and Section 34 West pastures were similar to the Section 34 East pasture with increased prickly pear, bunchgrasses reduced in vigor and abundance, more bare ground and less club moss. The Section 34 West pasture also contains a gravel pit that is used irregularly, resulting in increased weeds in this area. The Railroad pasture was in a transition condition between the east pastures and west pastures with moderate amounts of prickly pear and blue grama.

Kimber-Diorite has three established Daubenmire trend study sites:

Daubenmire 1, Railroad pasture:

Most species have been relatively static with the exception of blue grama, which has been increasing. This increase in blue grama has had an inverse effect on bare ground, which has been decreasing.

Daubenmire 2, Section 34 East pasture:

Again, most species have been static except for three: broom snakeweed has decreased in frequency, while bluebunch wheatgrass and blue grama have increased.

Daubenmire 3, Lower Kimber pasture:

All species have been relatively static in this study area.

The Kimber Diorite allotment does have concerns, and isolated portions of the allotment could be considered to be FAR. However, the condition of the allotment as a whole was determined to be PFC.

<p style="text-align: center;"><b>Western Montana Standard #2</b> <b><i>“Riparian and Wetland Areas are in Proper Functioning Condition”</i></b></p>
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**Whitehorse Allotment**

**Finding:** Not Applicable.

**Rationale**

No riparian areas, springs, or wetlands occur within the allotment.

**Kimber Diorite Allotment**

**Finding:** Standard is met.

**Rationale**

A total of 0.83 miles of stream reaches are present on the Kimber Diorite Allotment. The main drainage on the allotment is Kelly Spring Gulch. All of the reaches in the allotment are tributaries of the Missouri River at Canyon Ferry Reservoir. All 0.83 miles of stream reaches were rated as PFC. Another previously rated reach of 0.28 miles was in a dry gulch and determined to not be riparian.

**Kimber Gulch**

Kimber Gulch is divided into two reaches that are separated by private land, and both reaches were previously rated as FAR condition. This rating was based on information provided by the Montana Riparian Wetland Assessment in 1994 and not by ID team assessment. During the assessment this year, the ID team concluded that the upper reach is PFC. This reach consists of a series of lentic areas totaling approximately 1 acre. The soils in these areas are stable and the proper riparian plant communities are present and in healthy condition. The ID team concluded that the lower reach is not riparian and that it is not appropriate to assess it using the PFC assessment criteria. Riparian vegetation, flow patterns, and hydric soils were completely absent from the reach.

**Kelly Spring Gulch and Tributary**

Kelly Spring Gulch was previously rated as FAR condition. This rating was based on information provided by the Montana Riparian Wetland Assessment in 1994 and not by ID team assessment. During the assessment this year, the ID team concluded that the reach is PFC. The reach is spring-fed, and flow is intermittent and interrupted. The proper plant communities are present to stabilize banks, and there are currently no signs of excessive erosion or deposition. The width/depth ratio is somewhat out of balance with the landscape setting in some areas due to historic downcutting, but these areas are currently stable and in the process of coming back into balance.

Kelly Spring Gulch Tributary was previously rated as FAR condition. This rating was based on information provided by the Montana Riparian Wetland Assessment in 1994 and not by ID team assessment. During the assessment this year, the ID team concluded that the reach is PFC. The reach's hydrological characteristics are appropriate for the channel type, and the proper riparian plant communities including willow, aspen, and sedge are present and in healthy condition.

<b>Reach Name</b>	<b>Stream Type</b>	<b>Length (miles/size)</b>	<b>Previous Rating</b>	<b>Current Rating</b>
Kimber Gulch	Intermittent	0.28	FAR	Not Riparian

Kimber Gulch	Intermittent	0.13	FAR	PFC
Kelly Spring Gulch Tributary	Intermittent	0.33	FAR	PFC
Kelly Spring Gulch	Perennial	0.37	FAR	PFC

All of these reaches, with the exception of the lower Kimber Gulch reach, were determined to be PFC. Therefore the ID team concluded that the Kimber Diorite allotment was meeting the riparian standard.

**Western Montana Standard #3:**  
*“Water Quality Meets State Standards.”*

**Whitehorse Allotment**

**Finding:** Not Applicable.

**Rationale**

No surface water is present on BLM land within the allotment.

**Kimber Diorite Allotment**

**Finding:** Standard is met.

**Rationale**

The State of Montana, Department of Environmental Quality (DEQ) has responsibility for implementing the Clean Water Act. This responsibility includes establishing Total Maximum Daily Loads (TMDL) of sediment and contaminants affecting water quality for beneficial uses. Kelly Spring Gulch and Kimber Gulch are not currently listed as impaired waterbodies. However, Canyon Ferry Reservoir, which is located below the Kimber Diorite Allotment, is listed on the State of Montana and EPA 303(b) list of impaired water bodies. TMDLs are not yet in the process of being developed for the Canyon Ferry Reservoir Planning Area.

Canyon Ferry Reservoir was determined by the DEQ to be fully supporting aquatic life. It partially supports agricultural uses but does not support drinking water or primary contact recreation uses.

The primary factors negatively affecting the water quality of Canyon Ferry Reservoir are acid mine drainage, impacts from inactive mine lands, internal nutrient recycling,

municipal point source discharges, on-site treatment systems, site clearance, and agriculture.

No known abandoned or active mines on BLM land are contributing sediment or metals to reaches on the Kimber Diorite allotment. The only known mine located on this allotment is the abandoned Kelly Mine located approximately 400 feet north of Kelly Spring Gulch, but this mine does not discharge to a waterbody. Upland and riparian grazing occur but are not contributing to significant erosion or sedimentation of Kelly Spring Gulch, Kimber Gulch, or any of their tributaries. There are no municipal point source discharges or on-site treatment systems on BLM land that might contribute to excessive ammonia concentrations or algal growth. All stream banks within the allotment were stable and well-vegetated with plant communities that have root masses capable of withstanding high flow events. Excessive erosion was not apparent on the roads of the allotment.

The ID team did not find that the Kimber Diorite allotment is contributing excessive levels of sediment or contaminants to Canyon Ferry Reservoir. Therefore, the ID team concluded that the Kimber Diorite allotment was meeting the water quality standard.

**Western Montana Standard #4**  
*“Air Quality Meets State Air Quality Standards.”*

**Finding:** Standard is met

**Rationale**

Air quality data was not collected within either allotment; however, observed vegetation was not dust covered and there was no impairment of visibility. Visibility impairment, when it occurs in this area, is most frequently due to smoke from fires across the western region and is temporary.

**Western Montana Standard #5**  
*“Provide habitat as necessary, to maintain a viable and diverse population of native plant and animal species, including special status species.”*

**Finding:** Standard is met for both allotments.

**Rationale**

A variety of wildlife species use these allotments. The upper slopes provide winter habitat for elk. Pronghorn antelope are commonly seen in summer. Records indicate use

by long-billed curlew and McCown's longspur, both BLM sensitive species. Coyotes and small burrowing mammals are present. Noxious weeds were noted in some areas during the assessments but were not a significant part of the overall plant community.

Pastures adjacent to the highway are not providing as good a quality of wildlife habitat as the other pastures; vegetation is in less favorable condition and habitat connectivity is reduced by the highway, pasture fencing, and railroad. These pastures adjacent to the highway would be considered FAR for this standard. However, overall the allotments both meet Standard 5.

## **How This Information Will Be Used**

Because the information in this Evaluation Report indicates that the allotments meet the Western Montana Standards for Rangeland Health, BLM will issue grazing decision(s) (subject to protest and appeal) to renew or issue associated grazing authorizations as necessary, with the appropriate level of NEPA documentation and public involvement in accordance with CEQ guidance and BLM direction

## **Involvement of Permittees, Agencies and Interested Publics**

The following groups/individuals were notified of the Allotment Assessments:

- Permittees authorized to graze on the allotments
- Helena National Forest, Townsend Ranger District
- Montana Fish, Wildlife, and Parks, Townsend Area Resource Office
- Rocky Mountain Elk Foundation

## **References**

Pellant, M., P. Shaver, D.A. Pyke, and J.E. Herrick. 2005. Interpreting indicators of rangeland health, version 4. Technical Reference 1734-6. U.S. Department of the Interior, Bureau of Land Management, National Science and Technology Center, Denver, CO. BLM/WE/ST-00/001+1734/REV05. 122 pp.

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USDI-BLM. 2001. H-4180-1 Rangeland health standards.

[http://www.blm.gov/pgdata/etc/medialib/blm/wo/Information\\_Resources\\_Management/policy/blm\\_handbook.Par.61484.File.dat/h4180-1.pdf](http://www.blm.gov/pgdata/etc/medialib/blm/wo/Information_Resources_Management/policy/blm_handbook.Par.61484.File.dat/h4180-1.pdf)

USDI-BLM. 1997. Record of Decision: Standards for rangeland health and guidelines for livestock grazing management for public lands administered by the Bureau of Land Management for Montana and the Dakotas.

<http://www.blm.gov/mt/st/en/prog/grazing.html>

## **BLM Staff Participants**

The following BLM staff participated in the preparation of this report:

<b>Assessment Team Member</b>	<b>Title</b>	<b>Signature</b>	<b>Date</b>
Roger Olsen	Rangeland Management Specialist, Soils		
Scot Franklin	Wildlife Biologist		
Eric Broeder	Riparian Coordinator, Hydrology		
Vickie Anderson	Range Technician		

<b>Review</b>	<b>Title</b>	<b>Signature</b>	<b>Date</b>
Tanya Thrift	Assistant Field Manager, Renewable Resources		
Scott Haight	Butte Field Manager		