

Land Health Evaluation Report
Sugarloaf Allotment
Bureau of Land Management
Butte Field Office

Introduction and Assessment Process

This report documents whether land health standards were achieved for the Sugarloaf Grazing Allotment administered by the Bureau of Land Management's Butte Field Office. Standards for Rangeland Health were evaluated utilizing an interdisciplinary team (ID team) 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 ID team 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:	11040
Current Management Category:	I (Improve)
Location:	~ 2 miles NW of Boulder, MT T6N, R5W; T6N, R4W
Public Acres:	4, 077 acres; 96% public land
Season of Use:	6/01 through 09/20
Public Animal Unit Months (AUMs):	91 cattle (6/1-9/20), 322 AUMs 35 cattle (6/16-9/20), 107 AUMs
Assessment Date/Period:	6/16-6/17/2009, 7/15/2009; June/July

General Setting:

The Sugarloaf Allotment is comprised of open foothills, partially timbered areas, riparian areas, and mountain peaks. Elevation ranges from 5,200 to 6,800 feet. Average annual precipitation is 11 inches from 1948 to 2008 (Western Regional Climate Center, 2009). Vegetation and soils mapping of the area indicates that a variety of soil complexes occur on the allotment as residuum derived from decomposing granite. Topography is moderately steep in some areas. Forested areas contain predominantly Douglas fir (*Pseudotsuga menziesii*), and the forest understory and upland sites are comprised of perennial grasses including rough fescue (*Festuca campestris*), Idaho fescue (*Festuca idahoensis*), bluebunch wheatgrass (*Pseudoroegneria spicata*), pinegrass (*Calamagrostis rubescens*) and several perennial forbs including lupine (*Lupinus spp.*) and pussytoes (*Antennaria spp.*). Mountain sagebrush (*Artemisia tridentata spp. Vasyena*) and Wyoming big sagebrush (*Artemisia tridentata ssp. wyomingensis*), as well as rocky mountain juniper (*Juniperous scopulorum*) are also present on the allotment. In 2000, a fire burned a large portion of the allotment, and a prescribed fire was also completed in the mid-1980s.

The allotment contains a few perennial and ephemeral streams totaling less than 3 miles of streams. Only one of the streams is fish-bearing and contains brook trout (*Salvelinus fontinalis*). The allotment also supports a variety of large and small mammals and birds.

Allotment History:

Historically this area has been grazed by sheep, cattle, and horses, and has been mined since the late 1800's. The majority of the allotment is public land with a few private in-holdings from mining claims. An allotment management plan (AMP) was developed in 1983 in cooperation with the permittee. Several objectives were established to improve

mule deer habitat, the herbaceous components, reduce conifer encroachment, improve riparian condition along Boomerang Gulch and its tributaries, control the spread of Dalmatian and common toadflax, and improve livestock distribution. The allotment is comprised of three pastures and grazed in a deferred rotation.

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
Sugarloaf	11040	Yes	No	Yes	Yes	Yes

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

Three upland sites, one in each pasture, were selected by the ID team to assess the indicators of rangeland health. The first assessment was completed in the Free Enterprise Pasture within the area of the prescribed fire. Two daubenmire trend transects are also located in the vicinity, one within the prescribed fire unit and one outside of the unit. Both the soil and site stability and hydrologic function indicators were as expected compared with the ecological site guide. The overall attribute rating associated with biotic integrity was considered a departure from what was expected for the site, due to the slight shift in functional structural groups related to the amount of bluebunch wheatgrass on the site. The site had less bluebunch wheatgrass than expected, which contributed to lower annual production and less litter. However both trend studies within and outside of the burned area indicate that bluebunch wheatgrass has increased.

In the Sugarloaf pasture, soil and site stability, hydrologic function, and biotic integrity attribute ratings were all as expected except for slight departures in the amount of litter and annual production. The ID team observed less bluebunch than expected, however deep rooted perennial grasses as a structural group were as expected due the amount of Idaho fescue and rough fescue present on the site. Daubenmire trend data within the

Sugarloaf pasture from a transect established in 1984, indicates that frequency of bluebunch has declined from 80% to 25% in 2007. At the same study site, Idaho fescue frequency has increased from 70% to 90%, and rough fescue has increased from 5% to 50%.

In the Boomerang Pasture, the fire appeared to have burned the hottest. Several stands of cheatgrass were apparent and may have been related to the intensity of the burn in portions of the pasture. The area in the pasture where the rangeland health attributes were assessed indicated that the soil and site stability and hydrologic function was as expected for the site, and the biotic integrity attributes indicated that a departure from what was expected for the ecological site had occurred. Litter amount, functional/structural groups, and annual production indicated that a slight shift from the ecological site guide was occurring. The departure observed in each indicator was attributed to the reduced amount of bluebunch wheatgrass present on the site.

Although slight departures in a few attributes were observed compared to the ecological site guides at two sites, the uplands in the allotment as a whole appear to be in good condition. Trend data and data from the rangeland health assessments indicate that the uplands are continuing to improve and that the uplands overall are in proper functioning condition.

Western Montana Standard #2
“Riparian and Wetland Areas are in Proper Functioning Condition”

Finding **Standard is not met.**

Rationale

The Sugarloaf Allotment has two main riparian areas, Peters Gulch and Boomerang Gulch. Only a small portion of Peters Gulch flows through the allotment, and the ID team rated this portion as functional at risk. Signs of historic use are still present in the number and extent of hummocks, however the hummocks had vegetation growing on all sides and appeared to be healing. The main portion of Boomerang Gulch was rated functional at risk and no trend was apparent. A road follows the length of the stream, and the road crossing was of concern. The culvert was clogged with debris and sediment was being deposited into the stream at the crossing. Evidence of placer mining from private land upstream and on BLM was still apparent in some areas, and the stream had been historically downcut. Boulders help maintain the integrity of the streambanks in many areas, particularly the steeper portions, but in the lower gradient areas the riparian herbaceous species may lack the root systems to stabilize banks during high flows. Overall Boomerang Gulch appeared to be improving in some areas, however too much additional sediment is being transported into the stream. Riparian coverboards along the gulch indicate that mesic shrubs such as currant and rose have decreased since 1982, and aspen has increased.

The West Fork of Boomerang Gulch is a steep fairly short reach. The sinuosity, width/depth ratio and gradient are not in balance with landscape setting, and the bottom portion of the stream has only upland vegetation and juniper along the banks. Neither a diverse age-class nor composition of riparian species is present. No riparian shrubs remain along the reach, although decadent willows and aspen are present. Four active headcuts were observed. The decadent aspen meadow at the top of the reach has an abundance of cheatgrass, thistle and hounds tongue. The 2000 fire burned the majority of the reach.

All the reaches on the allotment are still functioning at risk and therefore the riparian standard is not met.

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

Finding **Standard is met.**

Rationale

No quantitative data was collected for water quality during the assessment; however none of the streams within the allotment are listed on the State Department of Environmental Quality 303d list. Because the streams meet state water quality standards, they also meet the requirements for the BLM and the water quality standard is being met.

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

Finding **Standard is met.**

Rationale

Although no quantitative data was collected, visual parameters were assessed during the rangeland health assessment. Vegetation was not dust covered in any areas of the allotment, nor was any impairment of visibility noticeable; therefore the air quality standard is being met.

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.**

Rationale

The following indicators were used to assess whether existing habitat conditions are at a

condition to support viable and diverse populations of native plant and animal species, including special status species.

- Plants and animals are diverse, vigorous, and reproducing satisfactorily
- Noxious weeds are absent or insignificant in the overall plant community.
- Spatial distribution of species is suitable to ensure reproductive capability and recovery.
- A variety of age classes is present.
- Connectivity of habitat or presence of corridors prevents habitat fragmentation.
- Diversity of species (including plants, animals, insects, and microbes) are represented.
- Plant communities in a variety of successional stages are represented across the landscape.

No BLM sensitive plant species were observed during the assessment, nor have any sensitive plant populations been previously identified or documented. Sensitive wildlife species that potentially occur in the area include boreal toads (*Bufo boreas*), multiple species of bats, three-toed woodpecker (*Picoides tridactylus*), and northern goshawk (*Accipiter gentiles*). Mule deer, elk, and black bear have been observed on the allotment, as well as more than one species of frogs during rangeland health assessments.

Cheatgrass and other noxious weeds are present in areas that were intensely burned in 2000, but are not prevalent throughout the allotment. The natural fire and the prescribed fire also produced some beneficial effects, such as opening up the forest canopy, creating more understory vegetation for wildlife forage and cover. The uplands in the allotment are properly functioning and a diversity of habitats is present on the allotment. On several allotment visits, elk cows and calves were present as well as many other species of mammals and birds.

Preliminary Identification of Causal Factors and Recommendations

Based on the field review and observations, it appears the following factors may be contributing to land health standards not being achieved:

- The riparian standard is not met primarily due to historic mining and grazing. Proper grazing management would continue to allow improvements in Boomerang Gulch and Peters Gulch. Developing additional upland water sources may also further reduce grazing pressures in riparian areas.
- Monitoring was already implemented in summer of 2009 on the West Fork of Boomerang Gulch on the headcuts. The 2000 fire appeared to have burned very intensely in this area and likely killed the aspen clone as well as the root crowns in the willows. The soil appeared to have been sterilized due to the intensity of the fire in the upper portion of the reach where the cheatgrass and other noxious weeds were so prevalent. Planting willows and aspen may be necessary to get the woody riparian species back along the stream, as well as using rock and other natural materials to stabilize the headcuts at the same time.
- The road along Boomerang Gulch and the private land upstream is contributing

excess sediment to the system. Since the road is blocked by private land on both sides, reclaiming the road may be an option to reduce the sediment. If road reclamation is completed, removing the culvert and placing boulders along the channel where the crossing is would also help stabilize the channel.

Final determinations will be made upon assessment of further information. It should be noted that if changing current management or use will not result in progress toward meeting the standards, then the current management or use should not be considered a significant causal factor.

The following actions may be necessary in order to make significant progress in achieving the Western Montana Standards for Rangeland Health:

- Extending an existing pipeline may encourage better upland utilization and cattle distribution, and further reduce livestock use of riparian areas.
- Reclaim the road along Boomerang Gulch to reduce the sedimentation, and remove the culvert.

How This Information Will Be Used

If the information in this Evaluation Report indicates that the allotment meets 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. No additional final determinations are necessary.

For allotments not meeting the Western Montana Standards for Rangeland Health, BLM will use the information in this Evaluation Report along with any other relevant data or information, including input from interested parties, to make a final determination whether or not current grazing management or levels of use are a significant causal factor in not meeting rangeland health standards on the allotment. If current grazing management and/or levels of use appear to be a significant causal factor, BLM will use the NEPA process to document the affected environment and develop alternatives to propose changes to grazing management to facilitate achieving rangeland health standards. These changes or actions will be addressed with an appropriate level of NEPA documentation and public involvement in accordance with CEQ guidance and BLM direction. A Final Determination Document will be prepared in concert with the NEPA analysis and associated decision(s). Pursuant to 43 CFR 4180.2(c), the Authorized Officer shall take appropriate action as soon as practicable, but not later than the start of the next grazing year upon determining that existing grazing management practices or levels of grazing use on public lands are significant factors in failing to achieve the standards. Any grazing decisions, however, are subject to protest and appeal.

If current grazing management or levels of use do not appear to be a significant causal factor, changes or activities in other program areas or activities that appear to be significant causal factors may or may not be undertaken through a NEPA process,

dependent on program and office priorities. However, a Final Determination Document will be prepared to document and outline the significant causal factors.

Involvement of Permittees, State Agencies and Interested Publics

The following groups/individuals were notified of the Sugarloaf Allotment Assessment:

Dave Rieder, grazing permittee

Western Watersheds Project

Beaverhead-Deerlodge National Forest
Butte and Whitehall Ranger Districts

Montana Fish, Wildlife, and Parks
Butte Area Resource Office

MT Department of Natural Resources & Conservation
Conservation & Resource Development Division

BLM Staff Participants

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

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