

Land Health Evaluation Report

Quartz Hill Allotment
Bureau of Land Management
Butte Field Office

Introduction and Assessment Process

This report documents whether land health standards were achieved for the Quartz Hill 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: Quartz Hill Allotment # 20343
Current Management Category: I (Improve)
Location: T. 1 S., R. 10 W., Sec. 6, 7
 T. 1 S., R. 11 W. Sec. 1
Public Acres: 1084
Season of Use: 6/1 – 6/15
Public Animal Unit Months: 78
Assessment Date/Period: August 8, 2011

The BLM Quartz Hill and USFS Quartz Hill Allotments are included in a coordinated livestock grazing plan. The BLM Quartz Hill Allotment contains 2 pastures, called the BLM East and BLM West. These pastures are managed in a 2 pasture rest rotation system. Each BLM pasture is authorized for 78 cow/calf pairs from 6/1 to 6/15 every other year. These cattle then move onto the USFS portion of this allotment, and approximately 62 pairs are added to the herd on 7/1. Livestock graze the USFS portion of the Quartz Hill Allotment from 6/16 to 10/5. The USFS portion of the Quartz Hill Allotment is managed as a 4 pasture rest rotation system. This allotment met all standards of the Rangeland Health Assessment completed in 2000.

Eighteen soil map units compose the Quartz Hill allotment. The IDT chose to perform the upland assessment at two locations, most representative of the conditions in the allotment. Pits were dug to verify the soil type and determine the correlated ecological sites. One was a Whitore soil, common in the area, within the Raynesford-Whitore complex, 4 to 15 percent slopes, stony (819D) mapunit, which correlated to a Limy-Droughty ecological site. The second verification pit was dug in a Ratio Peak soil, correlated to a Droughty Steep ecological site, in the Ratiopeak, stony-Tiban, very stony complex, 8 to 25 percent slopes map unit (940E). Mountain sides dominate the allotment. Soils are primarily colluvium derived from limestone and argillite parent material, ranging from shallow to deep. Low lying areas at toeslope positions, or along drainage bottoms that tend to collect runoff and subsurface throughflow tend to have hydric, or saturated soils. Hydric soils tend to be coincident with aspen stands

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
Quartz Hill	20343	Yes	Yes	No	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

Vegetation treatments are occurring throughout this allotment and evaluation areas were placed within a treated area and a non-treated area. Two land health evaluations were conducted on the Quartz Hill allotment. Both evaluations found that all three attributes; Soil & Site Stability, Hydrologic Function, and Biotic Integrity, were at a “none to slight” departure from what would be expected. The interdisciplinary team felt that as a whole between the past and on-going treatments the allotment is meeting the upland health standard.

The first LHE was conducted within a past treatment area that was treated two years ago. The interdisciplinary team (IDT) felt that the area had been set back to the beginning of this fire cycle and regeneration will continue into the grass sage community if there is not disturbance. The older sage within the evaluation area seemed decadent but the new growth was very healthy. The estimated annual production was a little low as a result of the slight increase in sage over grasses. Also houndstongue, yellow sweet clover, and spotted knapweed were found sporadically in the evaluation area and more prevalent along the road.

The second LHE was conducted within an area prior to mastication. The immediate evaluation area was open grass with few trees but surrounded by denser canopies of Douglas fir. The evaluation area was found to have all indicators at a non to slight departure from expected. Vegetation, soils, and hydrology was as desired and note was made that this area could lose these desirable conditions if a natural disturbance regime was not maintained.

Over stocked dry Douglas fir forests dominate the forested uplands. Significant fire activity has been absent on much of this landscape for more than 100 years. In an adjacent drainage, a 9” DBH fir tree was approximately 145 years old. Stands are crowded with numerous small (sapling and pole sized trees) sized trees colonizing interspaces and often developing into thickets. Understory trees are characterized by small flat crowns, and are often dead or defoliated. Vigorous, healthy, immature trees are

uncommon in the understory. Understories are often lush carpets of pine grass with infrequent snowberry and buffalo berry. Shrubs are usually decadent and spindly, lacking a significant live canopy. Numerous mining era timber harvest stumps persist over much of the lower toe-slopes, as well as a few from harvest activities 30 to 40 years ago.

Insect infestation levels are high; defoliation from western spruce budworm and mortality induced by Douglas fir bark beetle activity are adversely affecting the stand characteristics in the area. Approximately 50 acres of thinning and masticating activities have been implemented in the Nez Perce and Triangle Gulch areas. The objective of these activities was to reduce competition and create stand conditions more typical of those formed under mid-severity fire events. Not all treatments have been completed and much of the forested landscape is still outside the expected range of natural variability associated with mid-severity fire conditions.

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

Finding Standard is met.

Rationale

The Big Hole River intersects the north boundary of the allotment. Highway 43 borders the south bank of the river, and the north end of the allotment. The portion of the Big Hole River that intersects the allotment is in Proper Functioning Condition relative to its potential, bordered by a state highway.

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

Finding Standard is not 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. The Middle Big Hole River is listed on the State of Montana and EPA 303(d) list of impaired water bodies. TMDLs have been developed for the Big Hole River and are published in the Middle and Lower Big Hole Planning Area Total Maximum Daily Loads (TMDL) and Water Quality Improvement Plan of 2009.

The Middle Big Hole River was determined by the DEQ to be fully supporting agriculture and industry, and partially supporting contact recreation. It does not support aquatic life,

cold water fisheries, or drinking water uses.

Sediment was noted as a primary factor negatively affecting water quality of the Middle Big Hole River, originating from historic mining, unstable banks, grazing, and roads. The TMDL plan targets an overall 28% reduction in sediment loading for the watershed, which corresponds to target reductions in uplands of 23% reduction from grazing and 56% reduction from croplands. Streamside source target reductions are 36% from streamside erosion and 30% from roads. Mining is noted as contributing excessive levels of lead and copper. No known abandoned or active mines on BLM land are contributing.

No known abandoned or active mines on BLM land are contributing sediment or metals from the Quartz Hill Allotment. Upland grazing is not contributing to upland erosion and sedimentation of the river. Stream banks within the allotment were stable and well-vegetated with plant communities that have root masses capable of withstanding high flow events. Therefore, stream banks are not known to be contributing significant amounts of sediment.

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

Finding Standard is met.

Rationale

Although the actual air quality in the allotment is unknown, there is no evidence to suggest that the current allotment conditions would be contributing to any air quality problems in terms of a source of smoke or dust particulates. No visual impairment was observed.

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.

The majority of the Quartz Hill Allotment is within the Dewey linkage area identified by American Wildlands. The Dewey linkage allows north-south wildlife movement between the Mount Haggin-Fleecer Mountain area into the Pioneer Mountains and east-west movement between the Divide area and Highland Mountains and the Upper Big Hole River Valley.

Conservation issues identified for the Dewey linkage area includes forest insect/disease and conifer colonization of sagebrush/grassland habitats. Spruce budworm is reducing crowns and causing mortality of all size classes of Douglas-fir while a major mountain pine beetle infestation is attacking lodgepole pine throughout southwest Montana. Sagebrush/grassland meadows are being reduced in size and quality by conifer encroachment. Moose populations are declining in this region due to hunting pressure and other environmental factors.

Existing stands of dense Douglas-fir currently provide habitat for those wildlife and avian species that prefer closed canopy, dense forest or forest generalists. The allotment also provides habitat for those species that use sagebrush habitats or the edge of forest and sagebrush/grassland openings. Numerous wildlife species and/or their habitats can be found in the allotment including but not limited to elk, mule deer, moose, red fox, black bear, coyote, bobcat, mountain lion, pine marten and other weasel species, porcupine, badger, red squirrel, flying squirrel, mountain cottontail, snowshoe hare, white-tailed jackrabbit, ground squirrels and other small mammals.

Avian species known or suspected to use the allotment include hairy, downy, pileated and three-toed woodpeckers, brown creeper, grouse, northern flicker, mountain chickadee, red-breasted nuthatch, chipping sparrow, gray jay, Clark's nutcracker, common raven, dark-eyed junco, pine siskin, mountain bluebird, Townsend's solitaire, western tanager, yellow-rumped warbler, Cooper's and sharp-shinned hawks, great-horned, northern saw-whet, and northern pygmy owls, Cassin's finch, red crossbill, red-naped sapsucker, ruby-crowned and golden-crowned kinglets, hermit thrush, and vesper and savannah sparrows.

Although some elk reside in the allotment year-round, most of the use occurs from winter through spring and the allotment provides important elk winter range. The allotment also provides critical mule deer winter range as well as calving habitat for both elk and deer. Although not commonly seen in the allotment, bighorn sheep are known to occur in the area. Moose can be found anywhere in the allotment but use is concentrated within riparian habitats.

Habitat dominated by sagebrush provides important habitat for sagebrush obligates

including BLM sensitive species such as sage grouse and sage thrasher. Other sensitive species known or suspected to occur in the allotment include boreal toad, northern goshawk, Brewer's sparrow, and grey wolf.

The allotment provides habitat for two species listed under the Endangered Species Act, Canada lynx and grizzly bear. Although suitable denning and travel habitat for lynx is found in the area, very limited foraging habitat is provided. Lynx were observed adjacent to the allotment during the 1980s but no recent sightings have been identified. Although the allotment is not within a designated recovery or distribution zone for grizzly bear, it does provide habitat and movement corridors for this species.

Wildlife habitat in the allotment has been impacted by both anthropogenic and natural events. Fire suppression and change in fire frequency has changed open forest "savannah" habitat with upland aspen and Scouler's willow to dense thickets of Douglas-fir. Both upland and riparian aspen have significantly declined throughout the allotment and upland willow has nearly been lost due to shading by conifers. Forest insects are causing damage to all size classes of trees. Spruce budworm is reducing the health of Douglas-fir while epidemic levels of mountain pine beetle have killed nearly all mature lodgepole pine in the allotment.

Conifer colonization is reducing the amount and quality of sagebrush, grass and forbs in the allotment. Although weed infestations are low compared to other areas in the field office, weeds are still having a negative, although negligible, impact on wildlife habitat in the allotment.

To restore and improve habitat conditions in the area, including the Foothills Allotment, the Wise River Forest Health and Habitat Restoration Project is currently removing conifer colonization in sagebrush habitats and will thin and/or burn forest stands to increase overstory and understory vegetation diversity. To date, roughly 115 acres of sagebrush/grassland have been restored in the Triangle Gulch area. In addition, thinning to remove conifer competition has been completed on 20 acres of upland willow and aspen habitat. The Wise River Project has improved habitat conditions in the Triangle portion of the allotment to meet Standard #5. The Wise River Forest Health and Habitat Restoration Project will continue to thin Douglas-fir savannah and remove conifers from sagebrush habitats and to restore and improve the quality of these habitats.

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 Big Hole River is on the 303d list

Final determinations will be made upon assessment of further information. It should be noted that if changing a 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:

- BLM lands are not a contributing factor to the Big Hole River being listed therefore no actions are necessary.

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 Quartz Hill Allotment Assessment:

Permittee authorized to graze on the allotment

Western Watersheds Project

Beaverhead-Deerlodge National Forest
Butte and Whitehall Ranger Districts

Montana Fish, Wildlife, and Parks

BLM Staff Participants

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

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