

Land Health Evaluation Report

Harriet Lou Creek Allotment
Bureau of Land Management
Butte Field Office

Introduction and Assessment Process

This report documents whether land health standards were achieved for the Harriet Lou Creek 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: Harriet Lou Creek Allotment # 20352
Current Management Category: M (Maintain)
Location: T. 1 N., R. 11 W., Sec. 31
Public Acres: 77
Season of Use: 5/15 – 11/14
Public Animal Unit Months: 12
Assessment Date/Period: August 10, 2011

This allotment is grazed every other year with approximately 45 cow/calf pairs for 2 days on average.

Bluebunch wheatgrass, Idaho fescue, elk sedge, pinegrass, and Richardson needlegrass are common species found on the allotment. Conifer species are present and are expanding into mountain big sagebrush and grass communities. Elevation in the allotment ranges from 6,000 feet to 6,400 feet. This area is in the 15 to 19 inch precipitation zone. In the 1990's, a road crossing on Harriet Lou Creek was hardened to narrow the existing crossing and to lessen the impacts to vehicles crossing the creek.

Eight soil map units compose the Harriet Lou Allotment. The ID team conducted an upland assessment within the largest map unit, Sebud-Ratiopeak complex, 4 to 15 percent slopes, stony (71D). A verification pit was dug on the sideslope, east/northeast aspect to determine the ecological site. The soil matched the Ratiopeak soil type, correlating to a Droughty 15-19" precipitation ecological site. Soils within the map unit classified as Mollisols (grassland soils) with a loamy surface texture, and an argillic (horizon of clay accumulation) horizon at 10-13" depth. Soils in the allotment are formed in alluvium and colluvium derived from quartzite. They tend to be deep and well drained. Soils along the lower end of Harriet Lou Creek, which has a wider riparian area, have a hydric soil component.

This allotment met all standards of its 2006 Rangeland Health Assessment.

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
Harriet Lou Creek	50352	Yes	Yes	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

The interdisciplinary team (IDT) found that the Harriet Lou Creek Allotment was meeting the upland standard. The Soil & Site Stability and Hydrologic Function attributes were rated as a none to slight departure from expected. The soils on the site were as expected and indicators suggested that soils were stable. Hydrology was not impaired and no excessive runoff or erosion was observed. The Biotic Integrity was rated as a slight to moderate departure because of the altered Function/Structural groups. The IDT did not see enough evidence that the slight shift from open grass sage parks to a sporadically conifer colonized stand as a large enough shift to warrant not meeting the upland standard. Consensus amongst the IDT was that if this area was left without disturbance, the amount of conifer expansion could be outside the range of natural variability.

The forested portion of this allotment was not examined. However, Douglas fir stands observed on the perimeter of the sagebrush community exhibited significant insect activity (defoliation of Douglas fir by western spruce budworm and mountain pine beetle induced mortality on lodgepole pine). The overall color of the stand was red-casted to gray, indicating decreased vigor and photosynthetic activity related to active insect infestation.

Douglas fir is established and persisting in the sagebrush communities that dominate the allotment. The canopy cover of these colonizing trees is not extensive; an ocular estimation is less than 25%. Open grown Douglas fir in the sagebrush are healthy and vigorous characterized by high live crown ratios, vibrant needle color and pointy crowns indicating good growth rates. Trees range in height from about 3-4 feet upwards to at least 15-20 feet or more. The largest of these trees are developing fire resistant characteristics (thickened bark).

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

Finding Standard is met.

Rationale

A total of 0.25 miles of stream reaches are present on the Harriet Lou Allotment. The only drainage on the allotment is Harriet Lou Creek. Overall, the reach was in Proper Functioning Condition in 1988, 2006, and again in 2011. It is a fish bearing stream that provides habitat for west slope cutthroat trout (BLM sensitive species), and possibly rainbow trout. The stream has a 5-20% gradient, with a Rosgen A-B channel type, located within a narrow V type valley, and side slopes of 15-45%.

In 2006, the upper 0.2 mile was rated as PFC, with the lower portion Functioning at Risk. Loss of beaver dams was thought to have facilitated down cutting and bank erosion in this lower portion of the reach. Trampling from cattle was also noted, browsing of riparian vegetation by wildlife and cattle, and a lowering of the water table was thought to have contributed to a narrowing of the riparian area. A hardened road crossing was installed in the 1990s.

The 2011 riparian assessment indicated that the upper and lower portions of the reach were in Proper Functioning Condition. Recruitment of young aspen and willow is occurring, but a lack of young alder was observed. The heavy browsing noted in 2006 is no longer occurring. The lack of beaver has affected the stream morphology. Banks appear to have stabilized since the 2006 assessment. Considering the historic down cutting observed here, and in reaches in the nearby Foothills allotment, in context with the ages of trees established in the drainage bottom, a large flood event appears to have impacted the area about 30-40 years ago. History of flooding in the area, taken from USGS hydrographs¹, suggests a likelihood of such an event having occurred in this reach, which could have caused the down cutting where the stream now appears to be stable. The reach is possibly subject to down cutting in the future should a similar event occur.

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

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. Harriet Lou Creek is not currently listed as an impaired waterbody on the State of Montana and EPA 305(b)/303(d) list of impaired water bodies. Harriet Lou Creek is a tributary of the Big Hole River, which is listed as impaired. TMDLs have not

been developed for Harriet Lou Creek and is not included in the Middle and Lower Big Hole Planning Area TMDLs and Water Quality Improvement Plan². Excessive sediment or other contaminants that could affect water quality were not observed during PFC assessment.

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.

Fisheries

There is one fish bearing stream within the Harriet Lou Allotment, Harriet Lou Creek. Harriet Lou Creek provides habitat for the native westslope cutthroat trout. Cutthroat

trout were in this stream were found to be 90-100 genetically pure. Overall, Harriet Lou provides good quality habitat for westslope cutthroat trout with the first 0.2 mile dominated by a conifer overstory with riparian species and good quality instream habitat. The loss of beaver and associated beaver dams has resulted in downcutting of the stream for roughly 0.1 mile before the stream enters private land. The drop in water table due to breached beaver dams has affected the size and extent of the riparian habitat in this lower section of the stream but mature willow still dominate the riparian zone. Although some crossings were observed, bank trampling is not excessive along the creek.

Wildlife

The Harriet Lou Allotment is within the Pioneer Mountains linkage area identified by American Wildlands. This linkage area provides year-long core habitat for wolverine, fisher, mountain lion, wolves, and black bear. Elk, mule deer, and moose are also present on seasonal ranges throughout the year, with movements dependent on location, forage availability, and winter snow.

Increasing human presence in the Harriet Lou Mountains linkage area during the summer may be displacing or diverting some wildlife use. Snowmobile use along the Byway and in the West Pioneers may conflict with wolverines and fisher security. Increasing tree mortality in Douglas-fir and lodgepole forest is reducing wildlife cover and security habitat, as well as representing a significant wild fire hazard.

This small allotment, 80 acres, is bordered to the north and east by private land and to the west and south by the Beaverhead-Deerlodge National Forest. The allotment provides for a diversity of habitats with dry Douglas-fir, sagebrush/grassland, and conifer and willow riparian habitats.

Wildlife species and/or their habitats that can be found in the allotment include but are 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, 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, 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 elk winter range. The allotment also provides mule deer summer range as well as calving habitat for elk. Moose can be found anywhere

in the allotment but use is concentrated along Harriet Lou Creek.

Habitat dominated by sagebrush provides important habitat for sagebrush obligates including BLM sensitive species such as sage grouse and sage thrasher. Other sensitive species that have been observed or could use the allotment include westslope cutthroat trout, boreal toad, 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 on Forest Service lands to the west, very limited foraging habitat is provided in or adjacent to the allotment. 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 to dense thickets of Douglas-fir. Riparian aspen has declined along Harriet Lou due to shading by conifers. Forest insects are causing damage to all size classes of trees. Spruce budworm is reducing the health of all size classes of Douglas-fir.

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.

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.

Preliminary Identification of Causal Factors and Recommendations

Based on the field review and observations, it appears the following factors and/or recommendations could improve conditions observed during IDT assessments:

- Reestablishing beaver, adding large wood, or investigating and employing other treatments should be considered to dissipate flood energy and prevent future down cutting or bank erosion.

References

1 http://mt.water.usgs.gov/freq?page_type=site&site_no=06024590
http://mt.water.usgs.gov/freq?page_type=site&site_no=06025100
http://mt.water.usgs.gov/freq?page_type=site&site_no=06025500

² Middle and Lower Big Hole Planning Area TMDLs and Water Quality Improvement Plan, Montana Department of Environmental Quality, 2009.

Involvement of Permittees, State Agencies and Interested Publics

The following groups/individuals were notified of the Harriet Lou Allotment Assessment via public scoping notice:

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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