Land Health Evaluation Report

Leffler Allotment

Bureau of Land Management

Butte Field Office

Introduction and Assessment Process

This report documents whether land health standards were achieved for the Leffler Grazing Allotment administered by the Bureau of Land Management's Butte Field Office. Standards for Land 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 this allotment 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: Leffler # 20340
Current Management Category: M (maintain)
Location: T1N, R10W, Sections 31 & 32; T1S, R10W, Section 5; Silver Bow County
Public Acres: 883 acres
Season of Use: 5/15 to 10/15
Public Animal Unit Months: 32
Assessment Date: August 9 & 10, 2011

The Leffler Allotment is grazed in conjunction with 640 acres of adjacent private property**.** The majority of the cattle use occurs on the adjacent private property, to the Leffler Allotment, owned by the Rafter Ranch. This area is grazed with approximately 127 cattle each spring and early summer (approximately 6 to 7 weeks) before Rafter Ranch cattle move to National Forest lands on the Jerry Creek Allotment on July 16 every year. Some grazing use also occurs on the allotment in the early fall if animals are coming home from the adjacent pasture on the national forest.

This allotment met all standards of the Rangeland Health Assessment completed in 2003.

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
Leffler	20340	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 rangeland health evaluations conducted on this allotment were compared to the Natural Resource Conservation Service's ecological site guides. The sites evaluated on this allotment showed little departure from the soil stability, hydrologic and biotic function indicators.

The first Upland Rangeland Health Evaluation was completed at T1N, R10W, Sec. 32. This evaluation was performed within the soil map unit Sebud-Ratiopeak complex, 20 to 50 percent slopes, very stony (910F). A verification pit was dug on a steep south facing backslope. The verification pit did not match the map unit. The major soil components of 910F are deep calcareous and non-calcareous grassland soils (Mollisols). The verification pit contained secondary calcium carbonates at a depth much higher than the soil map unit predicted. The pit most closely fit a minor component of the 910F map unit, Tiban, very stony and similar soils. These soils are well drained (i.e. not hydric). Minor components are not assigned ecological sites, therefore the ecological site was determined using the Rangeland Ecological Site Key, version 11.1 (National Range and Pasture Handbook, 2011). The verification pit keyed out to a Silty Limy 15-19" ecological site. The ID team concluded that 17 of 17 indicators, on the Rangeland Health Evaluation Worksheet, rated none to slight from departure from that expected.

A second Upland Rangeland Health evaluation was completed at T1N, R10W, Sec. 31. This evaluation was performed in the soil map unit Whitore, rubbly-Poin, rubbly-Rock outcrop complex, 25 to 60 percent slopes (923F). The verification pit was dug on a southeast facing footslope and matched the major component Poin, rubbly and similar soils. No ecological site was assigned to this map component. The ecological site was again determined using the Rangeland Ecological Site Key, version 11.1 (National Range and Pasture Handbook, 2011). The verification pit keyed out to a Silty 15-19" ecological site. These soils occur on mountain sides and form in residuum weathered from quartzite. They are very shallow soils, with lithic bedrock occurring at 10 to 20 inches. They are not hydric and experience no periods of saturation. The ID team concluded that 14 of 17 indicators, on the Rangeland Health Evaluation Worksheet, rated none to slight from departure from that expected. The Functional/structural groups' indicator was rated as slight to moderate, because the composition of the Idaho fescue and Rocky Mountain Juniper was higher than expected for the site. The Annual Production indicator was rated as slight to moderate as Idaho fescue will not have as much plant material produced as compared to Bluebunch wheatgrass. The Invasive/noxious plants indicator was rated as slight to moderate as some Spotted knapweed was present along a closed logging road.

The allotment has excellent ground cover and a good representation of native vegetation. Some small infestations of Spotted knapweed were identified. Conifer encroachment and conifer mortality was also observed. Conifer encroachment was attributed to the lack of fire disturbance. Conifer mortality in the Douglas-fir and lodgepole pine stands was attributed to the spruce budworm/Douglas-fir beetle and mountain pine beetle

respectively. Adequate recruitment and regeneration is expected throughout the forested areas.

Overall, the uplands on this allotment are in Proper Functioning Condition.

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

Finding Standard is met.

Rationale

Approximately 1 mile of stream reaches are present on the Leffler Allotment. Reaches in the allotment are tributaries of the Big Hole River. Both reaches go underground before arriving at the river.

The definition of a hydric soil is a soil that formed under conditions of saturation, flooding or ponding long enough during the growing season to develop anaerobic conditions in its upper part (NRCS Field Indicators of Hydric Soils in the United States, Version 7.0, 2010).

Field Indicators, of a hydric soil, are soil characteristics which are documented to be strictly associated only with hydric soils. Field Indicators are an efficient on-site means to confirm the presence of hydric soil. The Field Indicators are designed to identify soils which meet the hydric soil definition without further data collection. Some hydric soils exist for which no Field Indicators have yet been recorded and documented, and to identify these soils as hydric, evidence must be gathered to demonstrate that the definition is met. Additional Field Indicators are being developed and tested.

If a field indicator is met, the soil is classified as *hydric*.

Stream Reach BHDV-12 was classified as an A4 Rosgan Stream: entrenched, low width/depth ratio, low sinuosity, and gravel bed material. The reach was rated as Functional at Risk with an upward trend. The lower portion of the stream, about half of the reach length was found to be impacted by historic logging activities, possibly harvested logs were skidded out through the streambed. As a result, the streambed has down cut 5 to 6 feet and has subsequently hit bedrock. At the time of the ID team assessment, the streambed in the lower half was vegetated and the banks were continuing to stabilize. The abundance of coniferous trees in the upper portions of this reach was identified as a potential vegetation reduction/improvement project to encourage widening and growth of riparian, bank stabilizing vegetation. Soil textures along the stream channel and in the stream bed were predominately sandy loams and loamy sands. The hydric soils indicator "S5 Sandy Redox" was met throughout the length of the reach. Redox concentrations in the form of distinct iron masses were observed within the top 6 inches of the soil surface, classifying this soil as hydric.

Reach BHDV-13 is a woody draw as evidenced by the lack of water and riparian vegetation present at its lower reaches. No hydric soil indicators were met.

Reach BHDV-15 was previously rated as FAR condition. However, during the assessment this year, the ID team concluded that conditions have improved and the reach is PFC. The previous assessment noted significant erosion from a historic logging road and a lack of riparian woody vegetation. Since the previous assessment, the sediment balance of the stream has stabilized, and the historic logging road does not appear to be adversely impacting the reach. During the assessment this year, the ID team concluded that the stream's lack of consistent flow, the shallow soils, and the extent of conifer canopy cover over the stream limits its ability to support riparian shrubs. Therefore, a lack of shrubs does not impair its proper functioning condition. The reach was determined to have intermittent flows, with a perennial seep. This reach rated as proper functioning condition (PFC). Soils along the stream bed and channel were shallow with little organic matter. No hydric soils indicators were met.

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. The Big Hole River, which is located below the Leffler Allotment, is listed on the State of Montana and EPA 303(d) list of impaired water bodies, but none of the reaches within the allotment are listed. 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. Streams in the Leffler allotment are not listed on the 303(d) or 305(b) list of impaired streams and do not have TMDLs identified.

The Middle Big Hole River was determined by the DEQ to be fully supporting agriculture and industry, and partially supporting contact recreation. This portion of the Big Hole River 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

sediment or metals directly to the Big Hole River or to reaches on the Leffler Allotment. Upland grazing occurs but is not contributing to upland erosion and sedimentation of the allotment's reaches on BLM lands. Big Hole River tributary (BHDV-12) was severely down cut as a result of historic logging practices, and the banks are still sparsely vegetated because of their steepness. Flows are generally very low, being the result of a series of seeps at the top of the reach. Stream banks are stabilizing and the bottom is well-vegetated. Roads on the Leffler Allotment were not found by the ID team to be a source of sediment.

The ID team did not find sediment contributed from sources in the allotment, and reaches were not found by the DEQ to be in non-compliance with clean water goals; therefore, the Leffler Allotment meets the water quality standard.

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 are 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 allotment provides habitat for a variety of native wildlife species. Big game including moose, elk, and deer are present; small mammal burrows were noted; red-tailed hawks, bald eagles, and numerous passerine species were seen during the allotment evaluation; numerous insect and arachnid species were seen. During the evaluation no factors that would prevent native species from using the allotment were noted. Wildlife appears to be healthy, diverse, and reproducing satisfactorily. This allotment provides elk and deer winter habitat. Although the allotment is too small to sustain healthy and diverse wildlife communities on its' own, it is connected on all sides to USFS and undeveloped private land. There are no significant barriers to wildlife movement in and out of the allotment.

Noxious weeds are a concern and are significant in portions of the allotment; however native plant species dominate the majority of the allotment. Conifer species are expanding into sage, grass, and riparian areas due to alteration of historic disturbance but have not become dominant in these areas. Native vegetation in the allotment is diverse in age class and species.

Preliminary Identification of Causal Factors and Recommendations

All land health standards are being met under current management of the Leffler Allotment, and the ID team recommends continuing this management. Although the riparian standard is being met, further improvement to Stream reach BHDV-12 could be made by removing conifers from the reach to promote more riparian vegetation.

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 Leffler Allotment Assessment:

An adjacent property owner

Livestock grazing permittee authorized on this allotment

Western Watersheds Project

BLM Staff Participants

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

Assessment Team Member	Title	Signature	Date
John Sandford	Natural Resource Specialist		
Michael O'Brien	Forester		
Chris Robinson	Range Technician, Riparian and Soils		
Scot Franklin	Wildlife Biologist		
Gwen Davies	Range Technician, Soils		

Review	Title	Signature	Date
Tanya Thrift	Assistant Field Manager, Renewable Resources		
Scott Haight	Butte Field Manager		