

**Land Health Evaluation Report**  
**Granite Creek Allotment**  
Bureau of Land Management  
Butte Field Office

## **Introduction and Assessment Process**

This report documents whether land health standards were achieved for the Granite 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:** Granite Creek #07824  
**Current Management Category:** I (Improve)  
**Location:** (Identify County and Township, Range (probably not all the sections). Include a map at back.  
**Public Acres:** 1,628 acres  
**Season of Use:** June 1 – October 30  
**Public Animal Unit Months:** 333  
**Assessment Date/Period:** 7/27-7/28/2011

The Granite Creek Allotment is located northwest of Helena, MT near the Fort Harrison. Historically the allotment was heavily grazed and often grazed too early in the growing season for many consecutive years. In recent years, the permittee has implemented management to reduce the number of AUMs grazed annually, reduced the amount of spring grazing, and increased livestock distribution by running yearlings. The operator has also taken advantage of the fall use authorized with their current grazing permit. In addition to livestock grazing, the allotment has both active and inactive mine claims, is used intensely by the MT Army National Guard for training exercises and until recently received heavy use via motorized vehicles until access was restricted by private landowners.

Fifteen different soil mapping units compose the BLM owned portion of the Granite Creek allotment. The ID team chose to perform the upland assessments within the largest, most representative mapping units, Hilger-Farnuf stony loams, 8-35 percent slopes (567D) and the Hauz-Sieben-Tolman channery loams, 8-45 percent slopes (263E). Mapunit 567D is primarily found on hillsides, formed in slope alluvium and colluvium, and soils in the 263E are formed in alluvium, colluvium and residuum, found on hillslopes and upper elevation saddles. The range of topographic positions and parent material create a variety of soils ranging from shallow to deep and well drained, with the majority being deep and classified as mollisols. These well-developed soils are rich in organic matter and support grass and shrubland vegetation. Shallower soils are generally found adjacent to rock outcrops on ridges, and are associated with juniper, limber pine, and scattered Douglas fir. Soil pits were dug to verify soil type and ecological sites, and to assess dynamic soil properties.

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
Granite Creek	07824	No	No	Yes	Yes	No

## 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 not met.

**Rationale**

While the majority of the allotment was visited by the IDT, only two sites were selected that were representative of the allotment to complete more detailed evaluations due to topography soils, ecological site, representative vegetation, and distance from water. Other data including trend data on upland sites was also used to identify changes in plant composition, cover and frequency, as well as changes in bare ground.

The first evaluation was completed within a silty-droughty, 15-19” ecological site, correlated to a Hilger soil type, and the second was completed on a silty-droughty, 10-14” ecological site, correlated to a Seiben soil type, both within sagebrush-grassland habitats. Soils were verified by digging soil pits.

All soil and site stability and hydrologic function indicators on the silty-droughty, 15-19” ecological site were as expected and no departures were observed. Departures from expected in the biotic integrity indicators were the result of presence of noxious weeds including hounds tongue, leafy spurge, and knapweed, and annual production which was less than expected given the precipitation for this spring.

All soil and site stability indicators on the silty-droughty, 10-14” ecological site were as expected and there were no departures, however there were departures in the Hydrologic and Biotic Integrity indicators including plant community composition relative to infiltration, functional/structural groups, amount of litter, and annual production. Deep rooted perennial grasses, such as bluebunch wheatgrass, should have comprised the largest portion of the functional structural groups, and although there signs that new seedlings were becoming established the lack of bluebunch wheatgrass also caused a substantial decrease in annual production. Data collected at the daubenmire trendy study plot within the evaluation area indicated that litter cover was increasing as was cover, composition, and frequency of bluebunch wheatgrass. In 1987 cover of bluebunch wheatgrass was 12% and in 2008 cover was 23%.

Several species of noxious weeds are scattered throughout many areas of the allotment,

including hounds tongue, knapweed, leafy spurge, musk and Canada thistle, and common mullen.

Although there are indicators that show that upland conditions are improving, due to noxious weeds and more limited areas of highly vigorous deep rooted perennial grasses expected throughout the allotment, the allotment as whole is not meeting the upland standard.

<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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**Finding**            Standard is not met.

**Rationale**

The Granite Creek Allotment has three perennial streams including Sevenmile Creek, which is located along the northern border of the allotment, Granite Spring Creek, which is an interrupted/intermittent stream, and Cherry Creek, which is an interrupted stream that in most years is also ephemeral. All three streams were rated as functioning at risk with no apparent trend.

Sevenmile Creek is bordered by an active railroad grade, and subsequently has large amounts of weeds along the edges of the riparian zone including: hounds tongue, knapweed, leafy spurge, yellow sweetclover, cheatgrass, musk thistle and Canada thistle. Although there are many weeds, the reach also supported a very diverse riparian woody and herbaceous plant community that provided excellent streambank stability. On one portion of the stream, the meander had previously cut into the railroad grade, and had been reinforced and stabilized with rock rip-rap.

Granite Creek, has two exclosures and a livestock water development, in addition to an old dike structure which restricts flow and has altered the stream channel. The middle portion of the stream had a poorly defined channel, while the upper and lower portions maintained well defined channels. Several species of noxious weeds were present near the more disturbed portions of the reach, while aspen and other desirable woody species such as willows were present in many other areas. Herbaceous species consisted of Kentucky bluegrass with smaller portions of sedges and other riparian grasses.

Cherry Creek, which is most likely an ephemeral stream most years, was a very stable system due the bedrock. Very little vegetation was present, or expected, along the reach. Only two yellow willows were found along the reach, with a predominance of upland vegetation in the areas where soil was observed. Vegetation does not play a role in the stability of this bedrock dominated system. Heavy cover of noxious weeds was present along the entire reach, including leafy spurge, spotted knapweed, mullein and thistle.

The most substantial threat to all three reaches was the presence of noxious weeds that in Sevenmile and Granite Creek, will continue to compete with desirable riparian species, such as bluejoint and sedges. The amount of noxious weeds is a significant contributing factor to the condition of streams in the allotment.

**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. Although TMDLs are not completed for reaches within the allotment, draft findings for two of the three reaches assessed were completed by the DEQ. Granite Creek and Sevenmile Creek were listed on the DEQ’s 303(d)/305(b) list at the time reaches were assessed. Water quality information is accessible online from the Montana Clean Water Act Information Center (<http://cwaic.mt.gov/>). Cherry Creek, which was also assessed, was not listed on the 303(d)/305(b) list.

Granite Creek has not been assessed by the DEQ for uses including industrial, contact recreation, cold water fishery, aquatic life, and agriculture. It is listed by the DEQ as not supporting use for drinking water due to the presence of arsenic and cadmium from abandoned mines. Evidence of historic mining within the stream and on adjacent hillsides is evident which have impacted natural channel morphology including sinuosity and width to depth ratios. The channel is incised and straightened as a result. TMDLs would address specific contributing sources that negatively impact water quality. Recommendations for stream restoration and reclamation from historic mining would be addressed outside the scope of this assessment. Grazing exclosures previously constructed along the reach appear to be functioning well, illustrated by the vigorous riparian vegetation present.

Sevenmile Creek was assessed by the DEQ to fully support agricultural, drinking water, industrial and contact recreation uses. It was found to partially support aquatic life and cold water fisheries due to impacts from agriculture and grazing that have altered streamside vegetative cover, channelized the stream, and contributed sedimentation. Abandoned mines were found to contribute lead and zinc. The portion of Sevenmile Creek that flows through BLM land does not have abandoned mines, or altered vegetation or sedimentation from grazing. Channelization was not found; however, the railroad borders the stream to the north and constrains channel migration at points. Overall riparian vegetative vigor was high and stream banks were stable. Weed populations pose

a risk of future destabilization should they outcompete native, bank stabilizing vegetation. Evidence of high 2011 flows demonstrates that the stream can access its floodplain and deposited fine sediment.

Cherry Creek is not listed on the DEQ 303(d)/305(b) list. It had very low interrupted flow, but evidence of early spring floods indicated that the stream was able to seek its floodplain and deposit sediment. Cobble 3-8” in diameter that was deposited in point bars are indicative of the flashy nature of the stream. It is relatively steep and bedrock controlled in the section on BLM lands, which coupled with typical low flows does not lend itself to support much riparian vegetation. However, willow that was present was found heavily browsed. The upland vegetation, including large ponderosa pine, juniper and blue bunch wheatgrass, Idaho Fescue and Pine Grass, which dominates the system is important to dissipate energy in high flow events that could impact water quality downstream. Unauthorized cross country motorized travel on the south aspect above the stream, if continued, could be source of sediment to the reach.

**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 not 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 Granite Creek Allotment is outside of any linkage areas identified by American Wildlands but is located between the Rogers Pass to McDonald Pass and Townsend Flats linkage corridors. Although outside of a designated linkage corridor, this area dominated by open grasslands with scattered pockets of limber pine and juniper does provide isolated habitat for some wildlife species as well as a small movement corridor between the Scratchgravel Hills (BLM lands) and the Helena National Forest.

Although limited in size, the allotment provides habitat for those species that use grassland habitat, especially those with small home ranges, or animals moving through the area. Wildlife species and/or their habitats that could be found in the allotment include but may not be limited to elk, mule deer, red fox, coyote, bobcat, Columbia spotted frog, badger, white-tailed jackrabbit, ground squirrels and other small mammals.

Avian species known or suspected to use the allotment include hairy and downy woodpecker, northern flicker, chipping sparrow, gray jay, common raven, dark-eyed junco, mountain bluebird, western tanager, yellow-rumped warbler, red-naped sapsucker, swallows and vesper and savannah sparrows.

Elk and mule deer can be found in the allotment year-round and the entire allotment is considered winter range for these species.

The surrounding country is threatened by development, affecting the long-term viability of some species. Sprawl from Helena is fragmenting much of the surrounding habitat and has had a detrimental impact on pronghorn antelope habitat.

Habitat for BLM sensitive species is also limited in the allotment but golden eagle and grey wolf could be observed in the area. There is no habitat available in the Granite Creek allotment for wildlife species listed under the Endangered Species Act.

Loss of habitat from roads, adjacent development, the railroad, weeds, historic mining, historic livestock grazing and habitat loss and disturbance from National Guard activities have led to a decline in the quality and quantity of wildlife habitat in the allotment. In dry landscapes, such as the Granite Creek Allotment, riparian areas provide critical habitat for the life history needs of different species. The three riparian reaches assessed in the allotment were all Functioning at Risk. All of the reaches were experiencing a loss of riparian vegetation due to weeds and historic mining had significantly altered another reach. Disturbance and loss of riparian habitat due to weeds and mining have substantially reduced the quality and quantity of riparian habitat in the allotment.

Although the vegetative condition of the uplands are recovering due to greatly improved

grazing practices, the poor condition of riparian habitats, continued disturbance and habitat alteration by the National Guard and lack of plant diversity have create conditions that do not maintain a viable and diverse population of native plant and animal species, including special status species.

## **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:

- Historic livestock grazing
- Noxious weeds dispersed in uplands and riparian zones
- Disturbances associated with training exercises conducted by the national guard, including off-road driving and low flights over aspen stands that disturb migratory birds

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:

- Increase biological and chemical control of noxious weeds
- Electric fencing to increase livestock distribution
- Enforce stipulations for National Guard training exercising that reduce the occurrence of off-road driving and driving while roads are wet and muddy.
- Enforce and/or develop stipulations on flights over aspen stands that may impact migratory birds

## **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 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**

Letters were mailed in early spring to notify other agencies, interested publics, and permittees, in addition to a public notice provided by the BLM. The permittee and his ranch manager participated in upland and riparian assessments.

### **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>
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Tanya Thrift	Assistant Field Manager, Renewable Resources		
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