

# **Land Health Evaluation Report**

## **Deep Creek Allotment**

Bureau of Land Management

Butte Field Office

### **Introduction and Assessment Process**

This report documents whether land health standards were achieved for the Deep 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 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:** Deep Creek 20339

**Current Management Category:** I (Improve)

**Location:** T2N, R12W, Sections 20, 28, 32, 33, 34; Deer Lodge County

**Public Acres:** 2,074 acres

**Season of Use:** 05/15 to 09/30

**Public Animal Unit Months:** 146

**Assessment Date:** July 21, & 22, 2010

The Deep Creek Allotment lies about 15 miles northwest of Wise River, MT, about 27 miles northwest of Divide, MT and about 35 miles southwest of Butte, MT. The Wise River weather station reports 11.22 inches of precipitation on average. The average daily temperature at Divide is 41 degrees Fahrenheit. There are no recorded average temperatures at the Wise River Station. The Deep Creek Allotment is located at a higher elevation than either the Wise River or Divide weather stations, and receives more precipitation and cooler weather than is recorded at either weather station.

Two soil map units represent the majority of the soil types on the allotment:

54E – Libeg graveley loam, 15 to 35 percent slopes. Mean annual precipitation: 15 to 23 inches. Frost-free period: 30 to 70 days.

54F – Libeg graveley loam, 35 to 60 percent slopes. Mean annual precipitation: 15 to 23 inches. Frost-free period: 30 to 70 days.

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
Deep Creek	20339	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**

The rangeland health evaluation conducted on this allotment was 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. There is some scattered Douglas fir and Lodge pole pine expansion. No signs of over-grazing were apparent during the assessment, however utilization measurements were not collected.

A range site evaluation was completed in T2N, R12W, Sec. 28. The soil type for this site is Libeg graveley loam, 15 to 35 percent slopes (54E), which was verified by digging a soil pit and evaluating the soil texture. The soil type corresponded to a silty 20+” precipitation zone ecological site. From the evaluation, the ID team concluded that 16 of 17 indicators rated none to slight from departure. The Functional/structural groups indicator was rated as slight to moderate, because sagebrush has increased and herbaceous species had slightly decreased affecting the annual production for the site.

A line-point intercept transect was completed near the evaluation site during the allotment assessment. The cover at the evaluation site was 14% Bluebunch wheatgrass, 12% Idaho fescue, 20% Richardson needlegrass, 2% Kentucky bluegrass, 22% sagebrush; 22% buckwheat, 96% litter, and 2% bare ground. The site had a good representation of native vegetation.

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

**Finding** Standard is met.

**Rationale**

Approximately 3.7 miles of stream reaches and approximately 4 acres of springs and ponds are present on the Deep Creek Allotment. All streams, springs, and ponds were rated as proper functioning condition (PFC) with the exception of Connor Gulch, which was rated as functioning at risk. Many species of willows, carex, and riparian grasses and forbs were present along all stream reaches, ponds and springs.

The upper portion of Connor Gulch was rated as functioning at risk with a slight upward

trend, and the lower portion was rated the same however the trend was not apparent. The streambank and multiple crossings have impacted the channel characteristics, even though much of stream had high cover of willows. Evidence of historic beaver activity was present in several areas, and it appeared that after the beaver left the area the water table dropped, which may have impacted channel morphology many years earlier. Canada thistle was commonly found along Connor Gulch as well.

Deep Creek was rated as functional at risk during previous assessments; however the ID team rated during this assessment as proper functioning due to the desirable channel characteristics, and vigor and diversity of riparian vegetation. However, spotted knapweed was present in patches along the stream primarily near the road corridor. Still Gulch, Ralston, and Bear Creek were all rated PFC. Still Gulch and Ralston were steep, conifer dominated systems with channel armoring primarily from rock. Native herbaceous vegetation occurs along the stream and down wood plays an important role in energy dissipation during spring run-off. Bear Creek was one of the few streams that still has active beaver dams that allow the stream to support vigorous woody and herbaceous species along the entire length of stream.

Table 1: Streams, springs, and ponds on the Deep Creek Allotment rated

<b>Name</b>	<b>Type of System</b>	<b>Previous Rating</b>	<b>2010 Rating</b>
Ralston	Intermittent	FAR	PFC
Still Gulch	Intermittent	FAR	PFC
Bear Creek	Perennial	PFC	PFC
Deep Creek	Perennial	FAR	PFC
Conner Gulch	Perennial	FAR	FAR
Ski Hill	Intermittent	PFC	PFC
Ski Hill Spring	Perennial	Not Rated Prior	PFC
Conner Gulch Ponds	Perennial	Not Rated Prior	PFC

One spring and multiple ponds were evaluated during the allotment assessment, which had not previously been evaluated. Ski Hill Spring, which is in close proximity to one the reaches, was rated as proper functioning condition due to the vigor and species diversity of willows, sedges, and other riparian obligates. Several ponds were also evaluated near Connor Gulch, which were all rated as properly functioning.

**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. Deep Creek is listed on the State of Montana and EPA 303(d) list of impaired water bodies. TMDLs have been developed for Deep Creek and its tributaries and are published in the Middle and Lower Big Hole Planning Area Total Maximum Daily Loads (TMDL) and Water Quality Improvement Plan of 2009.

Deep Creek was determined by the DEQ to be fully supporting agriculture, drinking water, industry and recreation, but only partially supporting aquatic life and cold water fisheries. Sediment was noted as a primary factor negatively affecting water quality, originating from historic mining, unstable banks, grazing and roads. The TMDL plan targets an overall 17% reduction in sediment loading for the watershed, allocated to a 35% reduction from roads and a 21% reduction from grazing.

Based on the above evaluation and DEQ determinations, the water quality standard is not met on this allotment.

**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**

Deep Creek and Bear Gulch are tributaries to the Big Hole River, a world renowned trout fishery and one of only a few free flowing rivers left in the west. The lower Big Hole River is classified as a Blue Ribbon Fishery and hosts rainbow, brown, westslope cutthroat and brook trout. Rocky Mountain whitefish, burbot, longnose dace, longnose suckers, mottled sculpin and white sucker are also present. The river is refuge for the last wild population of fluvial arctic grayling (BLM sensitive species), a trout species now limited to the Big Hole River in the lower 48 states.

Deep Creek provides good quality habitat for arctic grayling, brook, brown, and rainbow trout, burbot, longnose dace, longnose sucker, mottled sculpin, and white sucker. Bear Gulch, located along the southern edge of the allotment, provides good quality habitat for brook trout and sculpin on BLM and genetically pure westslope cutthroat trout are found upstream on the Beaverhead-Deerlodge National Forest.

Connor Gulch is a tributary to Deep Creek and is also a fish bearing stream found in the allotment. Fish species using the stream, however, are unknown at this time. Riparian vegetation and aquatic habitat have been impacted by historic cattle grazing in this drainage and current livestock and wildlife use continue to prevent regeneration of aspen and willow as well as cause localized bank trampling. To protect the stream and allow recovery of riparian vegetation, the BLM is proposing a project to exclude livestock grazing from Connor Gulch.

### **Wildlife**

The Deep Creek Allotment is within the Fleecer linkage area identified by American Wildlands. This linkage area provides connectivity between the Pintler Mountains, the Pioneer Mountains and the Mount Haggin Wildlife Management Area.

The Deep Creek Allotment provides a diversity of habitats from dense forests of Douglas-fir and/or lodgepole pine, open lodgepole pine forest, sagebrush and grasslands, and

riparian vegetation. The allotment provides suitable habitat for those wildlife and avian species that prefer closed canopy, dense forest or forest generalists. The Deep Creek forest restoration project thinned insect damaged lodgepole pine adjacent to Deep Creek and created more open stand conditions in lodgepole pine forests. These stands are used by both northern goshawk and great grey owls.

The allotment also provides habitat for those species that use sagebrush and/or grassland habitats or edges along 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, Columbia spotted frog, pine marten, long-tailed and short-tailed weasels, porcupine, badger, red squirrel, flying squirrel, mountain cottontail, snowshoe hare, white-tailed jackrabbit, ground squirrels and other small mammals.

The allotment provides year-round elk and mule deer habitat but winter use is limited to lower elevations and along windswept slopes. Moose can be found anywhere in the allotment but use is concentrated within riparian habitats.

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, great-horned, northern saw-whet, and northern pygmy owls, yellow-rumped warbler, Cooper's and sharp-shinned hawks, Cassin's finch, red crossbill, red-naped sapsucker, ruby-crowned and golden-crowned kinglets, hermit thrush, vesper and savannah sparrows, and spotted sandpiper.

BLM sensitive species suspected or known to be found in the allotment include Brewer's sparrow, northern goshawk, great gray owl, boreal toad, and grey wolf.

A limited amount of habitat for two species listed under the Endangered Species Act, Canada lynx and grizzly bear, is found throughout the allotment. The allotment provides some suitable denning and travel habitat for lynx but very limited foraging habitat. Although the allotment is not within a designated recovery or distribution zone for grizzly bear, the allotment does provide habitat and movement corridors for the grizzly bear and grizzly bear sightings do occur in the area.

Wildlife habitat in the allotment has been impacted by both anthropogenic and natural events. Development of neighboring private lands has reduced the quality and quantity of wildlife habitat adjacent to and within the allotment. Lodgepole pine is experiencing high mortality due to epidemic levels of mountain pine beetle and spruce budworm is reducing the health of Douglas-fir. Aspen has declined, especially in Connor gulch.

Conifer colonization is not a major threat in the allotment but some sagebrush/grassland meadows are experience a decline in quality due to conifer establishment. 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.

Riparian vegetation is heavily browsed in Connor Gulch which is impacting recruitment of willows and aspen. The loss of beaver has resulted in fewer pools and willow thickets that would have been provided by beaver dam complexes in Connor Gulch. Both Deep Creek and Bear Gulch, however, still provide high quality, productive riparian vegetation for a variety of wildlife species.

Although the allotment is impacted by adjacent private lands and roads, the uplands are still providing adequate habitat for many wildlife species. The quality of riparian habitat along Connor Gulch has experienced a decline, but Deep Creek and Bear Gulch still provide excellent riparian habitat, willow dominated riparian areas and good quality aquatic habitat for fish and other species. Overall, the allotment is providing habitat necessary to maintain a viable and diverse populations of native wildlife 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:

- Trampling from cattle in Connor Gulch was identified as contributing excessive erosion and deposition.
- Browsing by wildlife and livestock is also affecting aspen and willow recruitment.

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:

- Fence off the portions of the stream reach in Connor Gulch, and leave a hardened water gap for livestock and wildlife to access water. Access to young willows and aspen will also be limited by the fence and recruitment would be expected to improve for both species.

## **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 Deep Creek Allotment Assessment:

The permittee authorized to graze on the allotment

Western Watersheds Project

Beaverhead-Deerlodge National Forest  
Wise River Ranger District

Montana Fish, Wildlife, and Parks  
**Butte Area Resource Office**

## BLM Staff Participants

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

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