

# **Land Health Evaluation Report**

## **Oxbow Allotment**

Bureau of Land Management

Butte Field Office

### **Introduction and Assessment Process**

This report documents whether land health standards were achieved for the Oxbow 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

<b>Allotment Name/Number:</b>	07704
<b>Current Management Category:</b>	I (Improve)
<b>Location:</b>	~ 25 miles N of Helena, MT T14N, R3W; T14N, R4W; T13N, R3W; T13N, R4W
<b>Public Acres:</b>	11,322 acres; 86% public land
<b>Season of Use:</b>	5/15 through 11/15
<b>Public Animal Unit Months:</b>	72 cattle; 377 Animal Unit Months (AUMs)
<b>Assessment Date/Period:</b>	7/26-7/29/2009, 8/5/2009, 8/11/2009; July/August

### *General Setting:*

Elevation ranges from 3,578 to 6,792 ft and is rugged and mountainous. Average annual precipitation is 12.8 inches from 1908 to 2008 (Western Regional Climate Center, 2009).

Vegetation and soils mapping of the area indicates that a variety of soil complexes occur on the allotment ranging from those found on alluvial fans, mountain tops, and foothills. Forested areas contain ponderosa pine (*Pinus ponderosa*), Douglas fir (*Pseudotsuga menziessii*), whitebark pine (*Pinus albicaulus*), and Rocky Mountain Juniper (*Juniperus scopulorum*), while uplands contain perennial grasses including rough fescue (*Festuca campestris*), Idaho fescue (*Festuca idahoensis*), bluebunch wheatgrass (*Pseudoroegneria spicata*), Columbia needlegrass (*Stipa columbiana*), several perennial forbs including lupine (*Lupinus spp.*) and blanket flower (*Gaillardia spp.*).

The allotment contains several perennial and ephemeral streams totaling 22 miles of stream. Only a few of the streams are fish-bearing and contain rainbow trout (*Oncorhynchus mykiss*), brook trout (*Salvelinus fontinalis*), and brown trout (*Salmo trutta*). The allotment also supports a variety of large and small mammals and birds. Historically bighorn sheep and mountain goats were present on the allotment, although in recent years few sightings have been documented.

The Sleeping Giant Wilderness Study Area (WSA) was established in 1981 as a result of the unique landscape, wildlife, and recreational values the area contains. Recreational use is extensive on the Missouri River shoreline and Holter Lake during late spring, summer and early fall. Most of the recreational use is water-based as there are few other access points.

*Allotment History:*

Historically this area has been grazed by sheep, cattle, and horses. Since 1966, cattle have been the primary species of livestock utilizing the allotment, with minimal use by horses. An allotment management plan (AMP) was created in 1986, which detailed resource concerns that livestock grazing management would emphasize, including elk, bighorn, and mountain goat winter range, and improving the composition of desirable native species in two areas along the power line.

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
Oxbow	07704	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**

At two trend monitoring sites in the Falls Gulch Pasture, cheatgrass has increased at the monitoring sites in frequency, canopy cover, and composition. However, after visiting many sites throughout the allotment, cheatgrass (Table 1) as whole did not appear to be increasing. The areas on the allotment that appear to have received extensive use historically, particularly along Holter Lake appear to be improving. The rangeland health assessment conducted at one site along the lake indicated that short interrupted water-flow patterns were still present and historic pedestals were also still apparent. Active erosion around the plant pedestals was not occurring. Overall, all of the attributes associated with soil and site stability were as expected. A departure in the overall rating for hydrologic function was detected. Indicators of concern were related to the water-flow patterns not expected for the site, a shift in the functional structural groups, and the plant community composition relative to distribution. Mid-height perennial grasses were the dominant structural group followed by forbs and tall perennial grasses. Tall perennial

bunchgrasses such as bluebunch wheatgrass should have been the dominant species for this ecological site. A departure in the overall rating for hydrologic function was also detected for the same reasons as the hydrologic function.

Table 1. Cheatgrass frequency, canopy cover, and composition at two daubenmire trend study sites on the Oxbow Allotment.

Study #	Year	Species	% Frequency	% Canopy	
				Cover	% Composition
Oxbow 1	1990	Cheatgrass	20	2	2
	2008	Cheatgrass	50	24	24
Oxbow 2	2002	Cheatgrass	10	0.2	0.4
	2009	Cheatgrass	95	48	39

The second site the ID team conducted a more detailed rangeland health assessment was located the foothills. The soil and site stability, hydrologic function, and biotic integrity attributes were as expected for the ecological site. In the majority of the allotment, the upland sites are healthy, with the exception of the flats directly near Holter Lake, which are still exhibiting signs of historical use. These sites along Holter Lake are also exhibiting signs of improvement. Some evidence of spruce budworm and mountain pine beetle activity is apparent, but overall the forested sites exhibit healthy conditions. Overall the uplands on the Oxbow Allotment are properly functioning; therefore Standard 1 is being met.

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

**Finding**      **Standard is met.**

**Rationale**

The Oxbow Allotment has ~20 miles of stream reaches on the allotment, and 15 miles are rated as properly functioning. Towhead Gulch (1.25 miles) is the only reach rated as non-functional, and Holter Lake (4 miles) is rated as functional at risk. The majority of the upland springs flow into small, often ephemeral draws, and augments water flows in perennial streams. Holter Lake will always be rated functional at risk, related to the water flow regulation by the dam. One of the Sheep Creek tributaries that the ID team assessed was previously rated as functional at risk and has improved to proper functioning condition.

The ID team also assessed Falls Gulch, which is a unique intermittent system with sandstone and shale as the bed material. The type of bed material allows a high degree of disturbance of the channel, which also supports cottonwood. The main concern noted was the incidental use by cattle that are able to go over and around the electric drift fence towards the bottom of the gulch. Browsing of young cottonwoods is a concern, as there is

limited cottonwood regeneration.

Towhead Gulch was rated as non-functioning. The channel morphology has been altered and the flow also altered. The stream should be a perennial continuously flowing system, but is currently an interrupted system. Cottonwoods and other desirable riparian species have been limited and in some areas completely eliminated. Towhead Gulch has been mined and some reclamation was completed.

Overall, the riparian areas on the allotment are properly functioning with the exception of a few miles in Towhead Gulch and the riparian habitat overall is in very good condition.

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

**Finding**        Standard is not met.

**Rationale**

No quantitative data was collected for water quality during the assessment, however Holter Lake is listed on the State Department of Environmental Quality 303d list indicating that the water in the creek is impaired and unable to support the beneficial uses. Water quality in Holter Lake is impaired due to the amount of mercury in the lake. The point source has not been identified, because the Total Maximum Daily Load (TMDL) assessment has not been completed for the area. Holter Lake does not meet state water quality standards, and therefore the allotment does not meet the BLM water quality standard.

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

**Finding**        Standard is met.

**Rationale**

Although no quantitative data was collected, visual parameters were assessed during the rangeland health assessment. Vegetation was not dust covered in any areas of the allotment, nor was any impairment of visibility noticeable; therefore the air quality standard is being met.

**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.

Noxious weeds were very limited and did not appear to be expanding. Cheatgrass is present at two trend monitoring sites, and is increasing in these two areas but was not prevalent in other areas visited by the ID team. Weed spraying efforts by the Butte Field Office have reduced weeds directly along the Holter Lake shoreline.

No BLM sensitive plant species were observed during the assessment, nor have any sensitive plant populations been previously identified or documented. Sensitive wildlife species that likely occur in the area include boreal toads (*Bufo boreas*), multiple species of bats, three-toed woodpecker (*Picoides tridactylus*), and northern goshawk (*Accipiter gentiles*).

The Oxbow Allotment is critical elk winter habitat and the condition and diversity of the upland and riparian habitat on the allotment continues to provide adequate forage and cover. Historically the allotment also supported populations of big horn sheep and mountain sheep. Both species have drastically declined on the allotment; however the habitat that they occupied is still intact and capable of supporting both species. The Oxbow Allotment does provide a diverse habitat, with open upland areas, riparian areas, and forested habitats capable of supporting many species of wildlife, invertebrates, and a variety of plant 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:

- Holter Dam regulates the flow, and as a result alters the streambanks and shoreline of Holter Lake. Holter Lake is also on the MT DEQ 303d list, as an impaired stream resulting from the amount of mercury in the lake. The cause and sources of the elevated mercury are unknown.
- Placing a permanent fence at the bottom of Falls Gulch in place of the existing electric fence would better keep cattle out of Falls Gulch prior to scheduled use.

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

- Continuing to assist the Montana DEQ with future TMDL planning on Holter Lake to determine point sources for mercury contamination and address any contamination issues where the point source is on BLM lands.

## **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 Oxbow Allotment Assessment:

Oxbow Ranch, Ken Cook, grazing permittee

Western Watersheds Project

Helena National Forest  
Helena Ranger District

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

MT Department of Natural Resources & Conservation  
Conservation & Resource Development Division

**BLM Staff Participants**

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

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