East Otter Hazardous Fuels Project

Rangeland Management Specialist Report
Ashland Ranger District, Custer National Forest, Region 1
Contract Information:

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I. Introduction

- **Location of Project**

The East Otter Hazardous Fuels Project encompasses three grazing allotments north of East Fork of Otter Creek which include Whitetail Allotment, Deer Creek Allotment and Beaver Creek Allotment. The project is in Powder River County. **(*1.1 – East Otter Project Area and Allotment Map*)**

- **Purpose and Need for the Proposed Action**

The purpose and need for the East Otter Fuels Reduction Project is to reduce hazardous fuel conditions in the project area by changing condition classes 2 and 3 (described as having high, unnatural fuel loads) towards condition class 1 (described as a more natural, balanced fuel load and setting). The purpose and need can be achieved through the use of prescribed fire, thinning, commercial and pre-commercial forest vegetation management treatments.

- **History**

Prior to 1957, the whole area north of East Fork of Otter was open as one allotment called Beaver-Liscom. There were thirteen (13) permittees allowed to graze 2515 head of cattle from May 1st to November 30th on the Beaver-Liscom Allotment. In 1957, the Beaver-Liscom Allotment was fenced into two allotments the second being the Ash Creek Allotment. In 1974, the Ash Creek was further divided into the Ash Creek and Deer Creek Allotments. In 1970, the Beaver-Liscom Allotment was further fenced into three (3) smaller allotments, the Coyote Allotment, Liscom Butte Allotment and the Beaver Creek Allotment. Then in 1971, the Beaver Creek Allotment was split again into the Beaver Creek and Whitetail Allotments. In 1973 the Beaver Creek Allotment was divided by cross fences into three pastures and a rotation system was initiated (Beaver Creek Allotment Management Plan, June 1980). The Whitetail Allotment was divided and placed into two pasture rotations systems during the 70's.

- **Custer National Forest Plan**

The Forest Plan states for rangeland management: The goal of rangeland management is to achieve a diversity of beneficial uses of rangeland resources, including harvest of surplus production through a cooperative and integrated management approach designed to attain healthy and productive soil and vegetation and clean air and water. Briefly stated our rangeland goal is to have the range resource in good condition.

The Forest Plan states for woody draws and riparian areas: The goal for riparian areas and woody draw management is to manage for water quality, provide diverse vegetation, and protect key wildlife habitat in these areas from conflicting uses. Riparian areas are critical for the maintenance of water quality and woody draws provide valuable wildlife habitats. Uses and activities that adversely impact these areas will be mitigated.

II. Background
Existing Condition

In general, vegetation occurring on the Ashland Ranger District is typical of southeastern Montana.

- **Whitetail Allotment**

The Whitetail Allotment is 3,917 acres and is divided into a two-pasture deferred rotation grazing system. The project area includes 3,233 acres of the allotment which is approximately 85% of the total acres. Both pastures of the allotment will be affected by the project. (***1.1 – East Otter Project Area and Allotment Map***)

The grazing season for this allotment starts May 20th and ends September 30th. The cattle are moved once around the middle of July in the rotation system. The cattle in this allotment are watered by springs, reservoirs, wells, and a pipeline system. There are 9 springs in the project area and 1 reservoir. There is approximately 2.6 miles of functioning pipeline with 6 water tanks connected to the line in the project area. The Whitetail-Beaver Creek Allotment division fence in the project area is 1.4 miles in length. These water improvements and fences are maintained by the permittees. (***1.1 – East Otter Project Area and Allotment Map***)

In 1995 the Whitetail Allotment went through a Livestock Grazing Analysis. This analysis analyzed the condition of woody draws, lower fan terraces and uplands in the allotment.

The woody draws in the Whitetail allotment were not analyzed extensively in the 1995 Livestock Grazing Analysis. The existing condition in the 1995 Livestock Grazing Analysis extrapolates statistics from other allotments in the close proximity and assumes typical grazing patterns of domestic livestock, which would conclude that some woody draws in the Whitetail Allotment would be meeting Forest Plan standards and others would not be.

The existing condition of the upland vegetation in the 1995 analysis showed that range condition plots were in fair condition. Range condition was analyzed using the Parker Three Step inventory method.

Monitoring continues on a yearly basis for the allotment with ocular utilization levels. Range condition and trend data are monitored by analyzing the established plots.

- **Deer Creek Allotment**

The Deer Creek Allotment is 10,095 acres in size and is divided into three pastures. The grazing management for this allotment will be changing from a season long grazing system to a deferred pasture rotation in the 2009 grazing season. The project area includes approximately 972 acres of the allotment which is approximately 9% of the total acres. (***1.1 – East Otter Project Area and Allotment Map***)

The grazing season for this allotment starts May 20th and ends November 30th. A new fence was constructed in 2008 in the lower pasture to better manage livestock grazing. The cattle management will be change in the grazing season of 2009 to increase management on cattle grazing intensity and timing. The cattle in this allotment are watered by springs, reservoirs, and wells. There are 2 springs and one reservoir in the project area. (***1.1 – East Otter Project Area and Allotment Map***)

In 1995 the Deer Creek Allotment went through a Livestock Grazing Analysis. This analysis analyzed the range condition of woody draws, lower fan terraces and uplands in the allotment.

The existing condition of the upland vegetation in the 1995 analysis showed that range condition plots were in fair condition to good condition. Range condition was analyzed using the Parker Three Step inventory method.

Monitoring continues on a yearly basis for the allotment with ocular utilization levels. Range condition and trend data are monitored by analyzing the established plots.

- **Beaver Creek Allotment**

The Beaver Creek Allotment is 9,559 acres and is divided into a three pasture deferred rotation grazing system. The project area includes 50 acres of the south pasture in the allotment which is approximately 1% of the total acres. (***1.1 – East Otter Project Area and Allotment Map***)

The grazing season for this allotment starts May 20th and ends November 15th. The cattle are moved during the grazing season around the middle of June and the middle of September in the rotation system. The cattle in this allotment are watered by springs, reservoirs, wells, and three pipeline systems. No improvements are in the project area. (***1.1 – East Otter Project Area and Allotment Map***)

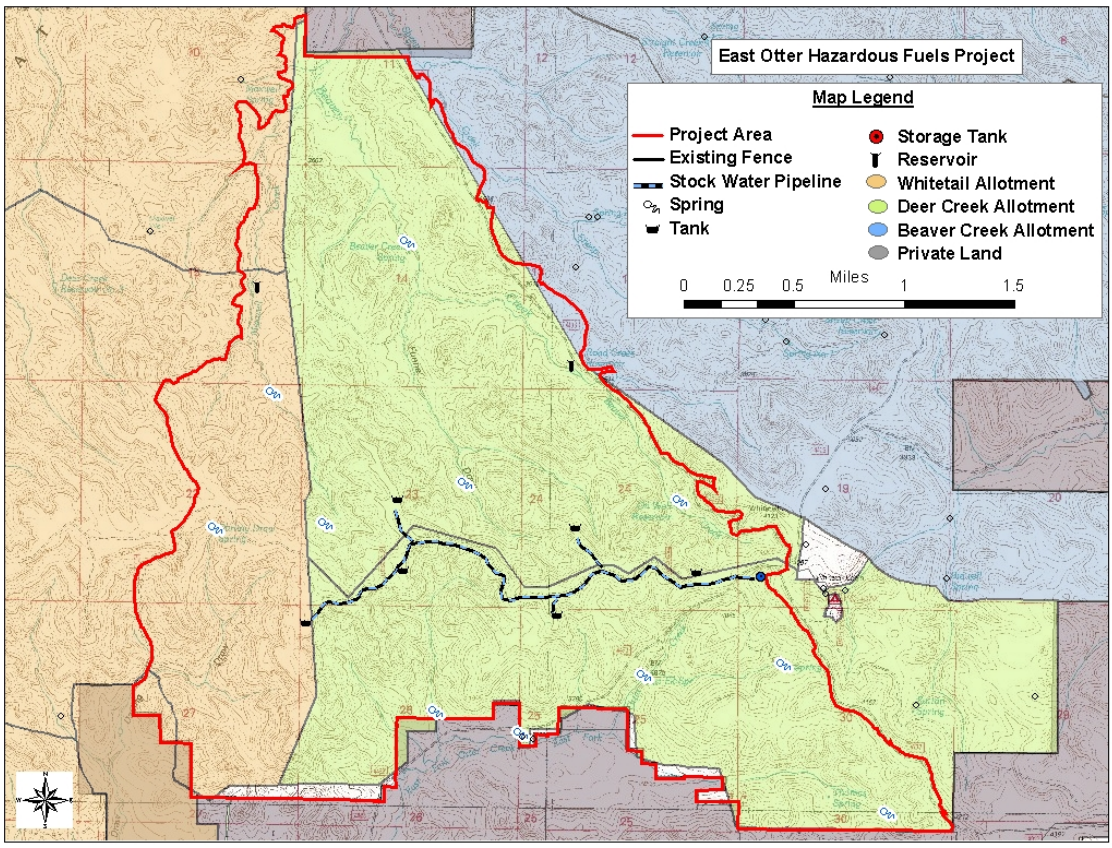
In 1995 the Beaver Creek Allotment went through a Livestock Grazing Analysis. This analysis analyzed the range condition of woody draws, lower fan terraces and uplands in the allotment.

The existing condition in the 1995 analysis showed that in some areas in the Beaver Creek Allotment the condition of the woody draws are not meeting the desired condition. Woody draws in the Sheep Creek area where of specific concern with some areas being "at risk" or "unhealthy". The woody draw condition was analyzed using the 1194 BLM/Montana Riparian and Wetlands Association Health and Function Evaluation Form.

The existing condition of the upland vegetation in the 1995 analysis showed that the majority of the upland sites were at their potential vegetation community. The transects in the Beaver Creek allotment read range condition at fair to good condition. Range condition was analyzed using the Parker Three Step inventory method.

Monitoring continues on a yearly basis for the allotment with ocular utilization levels. Range condition and trend data are monitored by analyzing the established plots. On a yearly basis grazing utilization continues to be higher in the draws and lower fan terraces whereas the upland usually receives lighter use.

1.1 – East Otter Project Area and Allotment Map



III. Environmental Effects

The proposed action was designed to respond to the purpose and need of the area. The proposed action has been analyzed for its effects to the rangeland resources.

- **Prescribed Fire**

Observations from past prescribed burns on the Ashland Ranger District indicate livestock are attracted to burned areas for 1 to 2 years post burning. These burns have changed the grazing distribution in some areas for the first couple of years were the livestock are attracted to the more palatable and nutritious feed. Fire increases the palatably of plants by eliminating old grown (Vallentine1989). This elimination of old growth allows the grazing animal more access to new tender growth. The burning of plant material incorporates nutrients into the soil. This nutrient flush is utilized by the plants, which in turn offers a more nutritious feed to the grazing animal. After the initial flush of nutrients, livestock tend to defer to previous distribution patterns.

- **Fire Effects**

These species listed below are dominant species in the project area. The *Fire Effects Information System* was used to determine and evaluate effects of practices and fire on specific plant species.

– Western Wheatgrass

Western wheatgrass is adapted to fire because of its rhizomatous growth form. Fire moves through stands of western wheatgrass quickly with minimal heat being transferred to the meristematic tissues.

Western wheatgrass can be burned throughout the year will have little effect to the density or productivity. Spring burns before new growth has begun growing in most cases are found to increased density and productivity of western wheatgrass.

Livestock will be attracted to the postfire western wheatgrass areas. Western wheatgrass recovers rapidity without grazing. Deferred livestock grazing until plants are able to recover or monitor grazing to ensure plants are not over utilized.

– Threadleaf Sedge

Threadleaf sedge is generally able to survive fire due to basal meristems protected by soil and/or damp litter. The low, dense growth habit allows for good continuity of fuel, which enhances fire spread.

After burning, careful grazing management should be implemented to ensure full recovery of the plants. Deferred livestock grazing until plants are able to recover or monitor grazing to ensure plants are not over utilized. To maintain a good stand, plants should not be burned during periods of drought, and burn severity should be light to moderate.

– Idaho Fescue

Idaho fescue can survive low or moderate severity fires if its basal buds are not severely damaged. It grows in a dense, fine-leaved tuft. Grasses with a similar life form appear to burn hotter than more coarse-leaved grasses. Fire removes foliage as it passes over, but smouldering may continue in the bunch 2 to 3 hours after the flame front passes. Fire can kill individual fescue plants or it may reduce their basal area. Idaho fescue is generally considered to be a fire-sensitive species that can be severely damaged by summer and fall fires. Plants burned in the fall may suffer reduced yields if the soil is moist. Water added to the soil stimulates growth at a time when frost injury is likely. Burning Idaho fescue in late summer causes more damage than in the fall. Plants may appear to be dormant, but low energy reserves and increased transpiration in hot summer temperatures stresses plants. This stress is reduced with cooler fall weather

– Silver Sagebrush

Silver sagebrush is not as susceptible to fire mortality because silver sagebrush has a strong sprouting response after top-kill by fire. Postfire sprouting is the main means of regeneration after fire however seedling can establish if postfire conditions are wet.

– Beaked Sedge

Beaked sedge is resistant to damage from fire. Root crowns are rarely damaged, even by hot, intense fires. However, repeated burning of this type favors rhizomatous species such as Kentucky bluegrass and bearded wheatgrass. Burning should be postponed if livestock are present to avoid attracting animals to young.

– Kentucky Bluegrass

Because Kentucky bluegrass is a cool-season grass, active in the spring and fall, it is most susceptible to fire damage at those times. Late spring fires, after plants have been growing for about a month or more, are the most damaging to Kentucky bluegrass.

o **Rangeland Management Conclusion – Rx Fire**

From past experience of prescribed fire on the Ashland Ranger District and the information given above, prescribed fire conducted during the spring and fall will not have an adverse affect on the rangeland recourse. Rangeland plant communities on the Ashland Ranger District are adapted to fire and are in some cases renewed by fire. It is recommended that plant communities are given time to recover before livestock grazing occurs. It will be important for the rangeland management specialist to be involved in the planning of the burn to ensure livestock grazing does not have adverse effects to the burned area by allowing for plant recovery by deferring placement of cattle in the burned area. The allotments that are effect by the fuels project are in pasture systems that would allow deferment to burned areas. Other tools (e.g. electric fencing, herding and salting) are available if greater lengths of time are needed for deferment in burned area for plant recovery.

▪ **Commercial Treatments**

Using past timber harvest activities on the Ashland Ranger District and scientific literature as a guide, there is the potential for timber actives to have an effect on the rangeland recourse.

o Vegetation Response

Ponderosa pine is the dominate over-story species in the project area, and it is the targeted species to be removed by mechanical thinning (e.g. commercial harvest) and prescribed fire. Shepperd and Battaglia (2002) indicate that with an increase in canopy cover of ponderosa pine, under-story production decreases. In closed canopy stands of ponderosa pine little to no under-story vegetation is found. Decreasing the canopy cover/basal area of a site will decrease the competition for nutrients, water and sun light between the under-story plant community and the over-story plant community. Shepperd and Battaglia (2002) state that in general species richness increase when ponderosa pine canopy cover is decreased. Studies have shown when ponderosa pine canopy cover increase graminoid production decrease. Herbaceous production does not respond

equally through sites when the canopy cover is decrease. Soils affect the productivity of a plant community when the over-story is reduced (Shepperd and Battaglia 2002).

Forage under forested area is less palatable than plants in meadows. McEwen and Dietz (1964) recorded a 34% increase in utilization in meadows verses utilization under forested areas. This difference was attributed to the higher amounts of nitrogen-free extract in the grasses in the meadows. They infer that with the higher amounts of nitrogen-free extract that these plants also had a higher level of sugar which in turn made the plant more palatable. This difference was attributed to shading by the over-story community.

With the reduction of ponderosa pine in the project area it can be assumed sites will have an increase in forage for the grazing animal. The amount of forage that will be utilized by cattle in the project area will be determined by distance to water and the slope of the terrain. On flat terrain a grazing animal (cattle) will utilize forage a mile from water (Roth and Krueger 1982). Utilization sharply decreases in distance greater than a mile. (Cook 1966 and Mueggler 1965) studies indicate that slope and distance to water are the greatest factors to influence utilization patterns. These factors will influence the distribution of the cattle on the allotments effect by the fuels project.

- Livestock Management Considerations

In the short term aspect (during commercial activity), there is the potential for adverse effects to livestock watering improvements and fences (***1.1 – East Otter Project Area and Allotment Map***). Examples of these effects could be breaking of livestock water pipeline during hauling of timber or cutting of wire along fence lines. These improvements are vital to the livestock grazing management programs that are in place. These effects can be mitigated by communicating with the rangeland management specialist assigned to the allotments to gain the knowledge of the range improvements located in the area of harvest. It is expected that after commercial harvest has taken place, all livestock watering improvements and fences that were affected by the harvest will be replaced or repaired to the condition that it was found.

During timber activities there is the potential for the commercial activities to affect the livestock pasture rotations of the three allotments affect by the project (***1.1 – East Otter Project Area and Allotment Map***). Pasture rotations are used to manage livestock by controlling the season of use, and the amount of forage utilized by the grazing animal. The goal of the grazing systems as described in the Grazing Response Index is to utilize the forage lightly/moderately, not to use the pasture in the same season year after year and allow the plants time to recover before dormancy. Mitigation for the potential effect to the pasture rotations is for the sales administrator to be in contact with the rangeland management specialist to insure harvest actives plans are known so the rangeland management specialist can make decisions for the livestock management.

- **Cumulative Effects**

The cumulative effect for the rangeland resources was analyzed within the allotment boundaries. Past, present and future projects were taken into consideration.

The Whitetail Allotment, Deer Creek and the Beaver Creek Allotment went through an environment assessment in 1995. There will be no cumulative effect because the 1995 decision is the reason for the exciting condition.

The East Otter Creek Hazardous Fuels project could have cumulative effects on the Whitetail Allotment. The East Otter Creek Hazardous Fuels project adjoins the Whitetail Hazardous Fuels project. The Whitetail grazing allotment is affected by both of these projects. The East Otter Creek Project is taking place on 85% of the Whitetail Allotment where the Whitetail Hazardous Fuels project is taking place on 15% of the allotment. The Whitetail Allotment as a whole will be within the boundaries of a fuels project. Activities effecting the grazing rotations (e.g. prescribed burning) need to be planned with the range specialist to ensure effective management.

References

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