U.S. Department of the Interior
Bureau of Land Management
Kemmerer Field Office **Date: April 2010**

ENVIRONMENTAL ASSESSMENT: WY-090-EA10-117

AUTHORIZATION OF LIVESTOCK GRAZING: MILBURNE ALLOTMENT (#11404)

The Bureau of Land Management is responsible for the balanced management of the public lands and resources and their various values so that they are considered in a combination that will best serve the needs of the American people. Management is based upon the principles of multiple use and sustained yield; a combination of uses that take into account the long-term needs of future generations for renewable and nonrenewable resources. These resources include recreation, range, timber, minerals, watershed, fish and wildlife, wilderness, and natural, scenic, scientific, and cultural values.

CHAPTER 1: INTRODUCTION

Environmental Assessment	WY-090-EA10-117
Title: Authorization of Livestock Grazing: Milburne Allotment (#11404)	
Allotment Category: Milburne Allotment: M – Maintain – The objective is to maintain resource conditions on the allotment.	
Location: Uinta County, Wyoming Milburne Allotment (#11404) *(see maps in Appendix A for details)	**Environmental Assessment Prepared by:** Bureau of Land Management Kemmerer Field Office 312 Highway 189 North Kemmerer, WY 83101

1.1 Background

The Milburne allotment is located in the center of Uinta County, Wyoming, about 5 Miles west of the town of Mountain View. Land ownership within the allotment is described in Table 1-1. Bureau of Land Management (BLM) records show that livestock grazing has been occurring on the allotment since the 1950's. However, it is likely that livestock grazing occurred in this area prior to the 1950's.

The BLM manages livestock grazing on public land by issuing grazing permits, with specified terms and conditions. These permits are issued to qualified applicants, and contain stipulations that promote the principles of multiple use and sustained yield. Permit #4904024 expired on December 15, 2009. The livestock operator who held this permit has applied for the permit to be renewed. This environmental assessment has been prepared to analyze potential impacts from prospective management actions on the Milburne allotment.

Table 1-1. Ownership information for the Milburne allotment

Allotment Name	Allotment Number	Public Acres	Private Acres	Total Acres
Milburne	11404	240	183	423
	Percent:	57%	43%	100%

1.2 Purpose and Need

Need: In order to graze on public land within the Milburne allotment, a livestock operator must hold a valid grazing permit.

Purpose: The purpose of the action is to apply appropriate terms and conditions to grazing permits for the Milburne allotment (#11404), in a manner that will provide for multiple use and sustained yield.

Decision to be Made: The BLM will determine what (if any) changes need to be made to grazing management on the Milburne allotment. These changes will be reflected on any grazing permits authorizing grazing on this allotment.

Background for Purpose and Need:
Livestock grazing is allowed on public land under the direction of the Taylor Grazing Act (1934), the Federal Land Policy and Management Act (1976), and the Public Rangelands Improvement Act (1978). The Record of Decision and Approved Kemmerer Resource Management Plan [RMP] (BLM 2010) allows livestock grazing within the Milburne allotment. In accordance with these acts and regulations, livestock grazing management must follow the principles of multiple use and sustained yield.

1.3 Scoping and Identified Issues

Scoping:
On May 12, 2009, a scoping letter was sent to the livestock operator on the Milburne allotment, all appropriate state organizations, and all other interested parties. This letter requested that any information, comments or concerns with livestock grazing on the Milburne allotment be submitted to the BLM for consideration. BLM received one letter from the Wyoming Game and Fish Department, dated June 12, 2009, stating they have no terrestrial wildlife or aquatic concerns related to livestock grazing on this allotment.

CHAPTER 2: PROPOSED ACTION AND ALTERNATIVES

2.1 Alternative 1 – Proposed Action

The Proposed Action is to issue/renew livestock grazing permits for the Milburne allotment (#11404). In accordance with 43 CFR 4130.2 the term of these grazing permits shall be for 10 years or less. Table 2-1 shows total available grazing use for this allotment.

Table 2-1. Summary of Total Available Grazing Use by Allotment

Allotment	Allotment #	Season of Use	Maximum # of Livestock	Livestock Kind	Active AUMs
Milburne	11404	06/01 to 06/30	45	Cattle	30

- **Season of Use**: Livestock will only be authorized to graze on the allotment during the season of use. Livestock may graze throughout the entire season of use, or for shorter periods of time within the season of use. Livestock will not be authorized to graze for any period of time outside the season of use. Dates given are month/day (mm/dd).
- **Maximum # of Livestock:** The maximum number of livestock allowed on the allotment at one time. Note that AUM limitations apply.
- **Livestock Kind**: The kind of livestock that will be authorized to graze on the allotment. See Active AUMs for total number of AUMs allocated to each kind of livestock.
- **Active AUMs**: The total number of Animal Unit Months available for livestock use on public land within the allotment.

Grazing permits for this allotment will not exceed the season of use given in Table 2-1. The total number of active AUMs for all permits on the allotment will not exceed the Active AUMs given in Table 2-1. The total number of AUMs associated with a specific livestock kind for all permits on a given allotment will not exceed the AUMs associated with a specific livestock kind in Table 2-1.

The following mandatory terms and conditions will be included in every grazing permit issued for this allotment:

- **Term:** The period of time during which the grazing permit will be valid. The terms will not exceed 10 years.
- **Allotment:** Name and number of the allotment where livestock grazing is being authorized.
- **Number of Livestock:** The number of livestock authorized to graze on the allotment. For a given permit, this number may vary depending on the season of use, so long as the number of AUMs allocated to the permit is not exceeded. The maximum number of livestock on the allotment at one time shall not exceed the number given in Table 2-1 (Maximum # of Livestock).
- **Kind of Livestock:** The kind of livestock authorized to graze on the allotment.
- **Season of Use:** The time of year during which livestock will be authorized to graze on the allotment. This must be within the time frame specified in Table 2-1 (Season of Use).
- **AUMs:** Total forage authorized for livestock consumption. Total AUMs for all permits on an allotment shall not exceed the number given in Table 2-1 (Active AUMs).

Grazing permits for the Milburne allotment will also include all of the Standard Terms and Conditions listed in Appendix B.

2.2 Alternative 2 – Current Management (No Action Alternative)

The No Action alternative is to issue/renew livestock grazing permits for the Milburne allotment (#11404). In accordance with 43 CFR 4130.2 the term of these grazing permits shall be for 10 years or less. Table 2-2 shows total available grazing use for this allotment.

Table 2-2. Summary of Total Available Grazing Use by Allotment

Allotment	Allotment #	Season of Use	Maximum # of Livestock	Livestock Kind	Active AUMs
Milburne	11404	05/01 to 10/30	30	Cattle	30

- **Season of Use**: Livestock will only be authorized to graze on the allotment during the season of use. Livestock may graze throughout the entire season of use, or for shorter periods of time within the season of use. Livestock will not be authorized to graze for any period of time outside the season of use. Dates given are month/day (mm/dd).
- **Maximum # of Livestock:** The maximum number of livestock allowed on the allotment at one time. Note that AUM limitations apply.
- **Livestock Kind**: The kind of livestock that will be authorized to graze on the allotment. See Active AUMs for total number of AUMs allocated to each kind of livestock.
- **Active AUMs**: The total number of Animal Unit Months available for livestock use on public land within the allotment.

Grazing permits for this allotment will not exceed the season of use given in Table 2-2. The total number of active AUMs for all permits on the allotment will not exceed the Active AUMs given in Table 2-2. The total number of AUMs associated with a specific livestock kind for all permits on a given allotment will not exceed the AUMs associated with a specific livestock kind in Table 2-2.

The following mandatory terms and conditions will be included in every grazing permit issued for this allotment:

- **Term:** The period of time during which the grazing permit will be valid. The terms will not exceed 10 years.
- **Allotment:** Name and number of the allotment where livestock grazing is being authorized.
- **Number of Livestock:** The number of livestock authorized to graze on the allotment. For a given permit, this number may vary depending on the season of use, so long as the number of AUMs allocated to the permit is not exceeded. The maximum number of livestock on the allotment at one time shall not exceed the number given in Table 2-2 (Maximum # of Livestock).
- **Kind of Livestock:** The kind of livestock authorized to graze on the allotment.
- **Season of Use:** The time of year during which livestock will be authorized to graze on the allotment. This must be within the time frame specified in Table 2-2 (Season of Use).
- **AUMs:** Total forage authorized for livestock consumption. Total AUMs for all permits on an allotment shall not exceed the number given in Table 2-2 (Active AUMs).

The following terms and conditions will also be included in every grazing permit issued for this allotment:

- Use on the Milburne allotment will be in accordance with the mitigation measures listed in the EA on the sheep to cattle conversion written for the allotment. The mitigation measure section will be considered as the management plan for the allotment. The federal acreage will be used as a pasture in a deferred rotation system.

Grazing permits for the Milburne allotment will also include all of the Standard Terms and Conditions listed in Appendix B.

2.3 Alternative 3 – No Grazing Alternative

Under the No Grazing alternative, livestock grazing would not be authorized on the Milburne allotment (#11404). The Kemmerer RMP (BLM 2010) would be amended to exclude livestock grazing on this allotment. No grazing

permits would be issued, and existing grazing permits would be cancelled. All AUMs associated with this allotment would be permanently retired. Livestock grazing would be excluded in order to enhance the other land uses in BLM's multiple use mandate (see Federal Land Policy and Management Act of 1976).

CHAPTER 3: AFFECTED ENVIRONMENT

The Milburne allotment is located in the center of Uinta County, Wyoming, about 5 Miles west of the town of Mountain View. Annual precipitation ranges from 8 – 12". Elevation on the allotment ranges from ~6900 feet to ~7100 feet.

3.1 Elements of the Human Environment

Table 3-1 lists the critical elements of the human environment. Table 3-2 lists other elements of the human environment that are considered in this EA. Only elements determined to be potentially impacted by one or more of the alternatives (PI) will be assessed in the Environmental Effects portion of this document (see Chapter 4).

Table 3-1. Critical elements of the human environment considered in this EA PI – Potential Impact. One or more of the alternative may have an impact on the element; NI – No Expected Impact. No impact on the element is expected from any of the alternatives; NP – Not Present. The element is not present within the allotment(s).				
PI	**NI**	**NP**	**Element**	**Information/Rationale**
	✓		Air Quality	"While there is limited ambient air quality-monitoring data available for the study area, air quality is generally considered good, with no regions designated as non-attainment for National Ambient Air Quality Standards (NAAQS) or Wyoming Abmient Air Quality Standards (WAAQS)." (BLM 2008, pg 3-5).
		✓	Areas of Critical Environmental Concern	There are no ACECs within or near the Milburne allotment.
	✓		Cultural Resources	A cultural resource review was completed for the Milburne allotment on January 22, 2008. The following is quoted from the review document: "Previous inventory coverage within the allotment boundaries is minimal; therefore previous inventory coverage provides a limited representation of the cultural resource types and densities within the allotment boundaries. This review found portions of two (2) Class III inventories conducted between 1998 and 1999… These inventories documented the Blacks Fork Archaeological Landscape (48UT1582) occurring throughout the allotment area. It is not eligible for National Register of historic Places listing." "Domestic livestock grazing has occurred for over 100 years in southwestern Wyoming. No impact to significant cultural resources has been reported in the area as a result of authorized, dispersed livestock grazing within the allotment boundaries."
	✓		Environmental Justice	None of the alternatives would have a disproportionately adverse affect on persons of any race, color, national origin or income level.
		✓	Farmlands (Prime or Unique)	No Prime or Unique Farmlands (as defined by 7 CFR 657.5) are present on the Milburne allotment.
✓			Floodplains	Approximately ¼ mile of Threemile Creek runs through the northwest portion of the Milburne allotment. Due to the limited stream length on BLM administered land, Threemile Creek has not been formally assessed. Therefore, information on the stream and its floodplain are limited.
		✓	Native American Religious Concerns	No areas of Native American Religious Concern have been identified within or near the Milburne allotment.
✓			Non-native or Invasive Plant Species	When the Standards for Healthy Rangelands assessment was conducted on the Milburne allotment, the following was found: "A few, individual Musk Thistle (*Carduus nutans*) plants were present on the allotment. Cheatgrass (*Bromus tectorum*) was found in very small, isolated groups. Neither of these species appeared to be actively spreading through the allotment." Note that Musk Thistle is designated as a noxious weed by the Wyoming Weed and Pest Council.

Table 3-1. Critical elements of the human environment considered in this EA PI – Potential Impact. One or more of the alternative may have an impact on the element; NI – No Expected Impact. No impact on the element is expected from any of the alternatives; NP – Not Present. The element is not present within the allotment(s).				
PI	**NI**	**NP**	**Element**	**Information/Rationale**
✓			Threatened, Endangered, or Candidate Species	A wildlife clearance was completed for the Milburne allotment on September 2, 2009 based on the BLM GIS database and a field visit. This clearance identified that there is no habitat present on the Milburne allotment for the following Threatened or Endangered (T&E) species or candidate species: black-footed ferret, Canada lynx, ute ladies-tresses, blowout penstemon, and yellow-billed cuckoo. Individual gray wolves dispersing in the area may be impacted but as no known denning sites are located on the allotment, the gray wolf population will not be affected. The allotment is not located in a sage grouse core area, nor is it within 2 miles of a known lek, but it does contain suitable sage grouse nesting and brood rearing habitat throughout the entire allotment.
		✓	Wastes, Hazardous or Solid	There are no known hazardous or solid wastes present on the Milburne allotment. Livestock grazing is not expected to produce or contribute any hazardous or solid wastes.
✓			Water Quality, Drinking or Ground	There are two water sources on the Milburne allotment: Threemile Creek and the Bridger Butte Canal. Neither of these water sources are currently on the Wyoming Department of Environmental Quality's 303(d) list. This list describes water sources that do not currently meet state water quality standards. No other water quality concerns have been identified for these water sources.
✓			Wetlands/Riparian Zones	Approximately ¼ mile of Threemile Creek runs through the northwest portion of the Milburne allotment. Due to the limited stream length on BLM administered land, Threemile Creek has not been formally assessed. Therefore, information on the stream and its floodplain are limited. Nebraska Flat is on the south side of the Milburne allotment. Because Nebraska Flat is flood irrigated, some seepages have formed on the allotment. Where these seepages occur on the Milburne allotment, there is some wetland/riparian vegetation present. When the Standards for Healthy Rangelands assessment was conducted on the Milburne allotment, the following was found: "Riparian vegetation in the allotment is diverse and dense, providing soil stability, helping maintain the water table, allowing for sediment capture, and allowing appropriate recovery from disturbance."
		✓	Wild and Scenic Rivers	No Wild and Scenic Rivers are present within the Milburne allotment.
		✓	Wilderness	No designated wilderness areas are present within the Milburne allotment.

Table 3-2. Other elements of the human environment considered in this EA
PI – Potential Impact. One or more of the alternative may have an impact on the element;
NI – No Expected Impact. No impact on the element is expected from any of the alternatives;
NP – Not Present. The element is not present within the allotment(s).

<table>
<tr><th>PI</th><th>NI</th><th>NP</th><th>Element</th><th>Information/Rationale</th></tr>
<tr><td></td><td></td><td>✓</td><td>Fluid or Solid Minerals</td><td>No fluid or solid mineral development has taken place on the Milburne allotment.</td></tr>
<tr><td></td><td></td><td>✓</td><td>Forested Area/Products</td><td>No timber stands are present on the Milburne allotment.</td></tr>
<tr><td></td><td></td><td>✓</td><td>Geology</td><td>No identified geological resources are present on the Milburne allotment.</td></tr>
<tr><td></td><td>✓</td><td></td><td>Land Resources</td><td>The BLM land within the Milburne allotment has been identified for disposal in the 2010 Kemmerer RMP (BLM 2010).</td></tr>
<tr><td>✓</td><td></td><td></td><td>Livestock</td><td>Currently, there is one livestock grazing permit on the Milburne allotment. Information for this permit is given below.
<table>
<tr><th>Permit #</th><th>Number</th><th>Kind</th><th>Begin</th><th>End</th><th>%PL</th><th>AUMs</th></tr>
<tr><td>4904024</td><td>5</td><td>Cattle</td><td>05/01</td><td>10/31</td><td>100</td><td>30</td></tr>
</table>
Use on the Milburne allotment will be in accordance with the mitigation measures listed in the EA on the sheep to cattle conversion written for the allotment. The mitigation measure section will be considered as the management plan for the allotment. The federal acreage will be used as a pasture in a deferred rotation system.
From the time the Milburne allotment was established to 1985 cattle utilized the allotment. Then, from 1986 to 1991 the livestock operator ran sheep on the allotment. In 1991 the sheep use was converted back to cattle use on the allotment. As a result of the sheep to cattle conversion in 1991, the Milburne allotment became a pasture in a deferred rotation system that included some of the operator's private land. This schedule called for cattle to be used in the Milburne allotment early (May 1 – May 31) for two years, then late (October 1 – October 31) the third year. During each use period, the operator would turn out ~30 head of cattle for one month.

A Standards for Healthy Rangelands assessment was conducted on the Milburne allotment in September 2009 (Field Visit: September 2, 2009; Conformance Review Summary: September 17, 2009). This assessment found that resource conditions on the Milburne allotment are currently meeting all of the Wyoming Standards for Healthy Rangelands.</td></tr>
<tr><td></td><td>✓</td><td></td><td>Paleontology</td><td>There are no known Paleontological resources on the Milburne allotment.</td></tr>
<tr><td></td><td>✓</td><td></td><td>Recreation</td><td>Because the Milburne allotment is entirely surrounded by private land, and has no road access to it, there is little to no public recreational activities taking place on the allotment.</td></tr>
</table>

Table 3-2. Other elements of the human environment considered in this EA PI – Potential Impact. One or more of the alternative may have an impact on the element; NI – No Expected Impact. No impact on the element is expected from any of the alternatives; NP – Not Present. The element is not present within the allotment(s).				
PI	**NI**	**NP**	**Element**	**Information/Rationale**
✓			Social & Economic Resources	Livestock grazing is a substantial element of the agricultural industry in Wyoming. Moline *et al.* (1991) found that agriculture plays an important role in Wyoming's economy for several reasons: • Agricultural expenditures tend to be consistent, even during periods of general economic instability. • Many of the resources required for production in the agricultural industry are provided by the local resource pool. • Most agricultural operations in the state are locally owned and operated, thereby providing more money and jobs within the state. Uinta County, Wyoming contains 344 active farms and ranches that span 742,809 acres (USDA 2009a). These ranching operations sustain 44,517 cattle and 41,231 sheep (USDA 2009a), currently valued at ~$50,891,063 (based on values of $1,020 per head of cattle, and $133 per head of sheep, USDA 2008). In 2007 these farms and ranches spent $20,582,000 on production costs, with the average operation spending $59,830 (USDA 2009a). As stated above, many of the resources required for production can be provided by the local resource pool (Moline *et al.* 1991), therefore it is likely that much of the capital spent on production costs went to local communities. Many of these ranching operations utilize federal land in and around Uinta county as part of their annual operation. Current grazing fees on public land are $1.35 per Animal Unit Month (AUM), compared to $5.13/AUM on Wyoming State Land, and ~$15.70/AUM on private, non-irrigated grazing land (USDA 2009b). Grazing fees on the Milburne allotment currently generates ~$40 annually. Money generated from public land grazing fees on the allotment is distributed as follows: • 50% - Range Improvement Fund. This money is used to implement range improvements (i.e. water developments, fence construction, spring developments, etc…) in the area where the grazing fees were generated. • 12.5% - State of Wyoming • 37.5% - U.S. Treasury The Wyoming Economic Analysis Division (2010a) estimates that the population of Uinta county increased by 6.0% between April 1, 2000 and July 1, 2009. In response to this population growth, the number of housing units in Uinta county increased from 8,011 in 2000 to 8,927 in 2009 (an 11.4% increase) (Wyoming Economic Analysis Division 2010b). Some of this housing development is occurring in rural settings, on or near lands previously used for ranching and farming.

Table 3-2. Other elements of the human environment considered in this EA PI – Potential Impact. One or more of the alternative may have an impact on the element; NI – No Expected Impact. No impact on the element is expected from any of the alternatives; NP – Not Present. The element is not present within the allotment(s).				
PI	**NI**	**NP**	**Element**	**Information/Rationale**
✓			Soils	Most soils on the Milburne allotment are described as Typic Torriorthens, which are part of the soil order Entisols. However, there are also some segments of Typic Torrifluvents (also in order Entisols) in the southern portion of the allotment, near the top of Nebraska Flat. There are some areas of soil on the allotment that are highly alkali. When the Standards for Healthy Rangelands assessment was conducted for the Milburne allotment, it was determined that there was adequate vegetation present to protect and stabilize soils. There were no signs of excessive erosion on the allotment. Presence and abundance of biological soil crusts on the Milburne allotment is unknown as no data has been collected for biological soil crusts on the allotment. However, while biological soil crusts play a crucial role in stabilizing soils and facilitating nutrient cycling in lower elevation desert environments (such as the Mojave Desert or the Great Basin), they are less abundant and less crucial in higher elevation ecosystems (such as the High Desert, where the Milburne allotment resides). In these higher elevation environments, vegetation is more abundant and provides the same ecosystem benefits that biological soil crusts provide in lower elevation environments.
✓			Special Status Species – Animal	According to a wildlife clearance based on the BLM GIS database and a field visit completed September 2, 2009, the Milburne allotment contains potential habitat for the following Special Status Species: sage thrasher, Brewer's sparrow, sage sparrow, and pygmy rabbit. The Milburne allotment does not contain potential habitat for BLM sensitive raptors such as burrowing owls, ferruginous hawks, northern goshawks, peregrine falcons or bald eagles. It also does not contain potential habitat for the mountain plover, white-tailed prairie dog, long-eared myotis, Idaho pocket gopher or any BLM sensitive amphibians or wetland birds.
		✓	Special Status Species – Vegetation	There are no known Special Status Plant Species occurring on the allotment. There is no known potential habitat for Special Status Plant Species on the allotment.
✓			Vegetation	When the Standards for Healthy Rangelands assessment was conducted on the Milburne allotment, the following was found: "Riparian vegetation in the allotment is diverse and dense, providing soil stability, helping maintain the water table, allowing for sediment capture, and allowing appropriate recovery from disturbance… "In the uplands, vegetation is comprised of *Artemisia tridentata* (Sagebrush) and a variety of perennial grasses and forbs, including *Achnatherum hymenoides* (Indian Ricegrass) and some members of the Poa (*Poa spp*.) and Phlox (*Phlox spp*.) genera. Vegetation is relatively sparse, with a good amount of bare ground in the interspace. Vegetation density is appropriate considering limitations imposed by soils and precipitation."

Table 3-2. Other elements of the human environment considered in this EA PI – Potential Impact. One or more of the alternative may have an impact on the element; NI – No Expected Impact. No impact on the element is expected from any of the alternatives; NP – Not Present. The element is not present within the allotment(s).				
PI	**NI**	**NP**	**Element**	**Information/Rationale**
	✓		Visual Resource Management	The Kemmerer Resource Management Plan (BLM 2010) designated the area within and around the Milburne allotment as Class III Visual Resources. "The objective of this class is to design proposed alterations so as to partially retain the existing character of the landscape. Contrasts to the basic elements (form, line, color, and texture) caused by a management activity may be evident and begin to attract attention in the characteristic landscape; however, the changes should remain subordinate to the existing characteristic landscape." (BLM 2008, pg Glossary-21). None of the alternatives are expected to alter the landscape to the point where it would attract the attention of the casual observer. Therefore, there are no expected impacts to Visual Resource Management.
		✓	Wild Horses	There are no Wild Horse Herd Management Areas within the BLM Kemmerer Field Office resource area.
✓			Wildlife	According to a wildlife clearance based on the BLM GIS database and a field visit completed September 2, 2009, the Milburne allotment does not contain elk calving grounds or potential habitat for non-sensitive raptors. It does, however, contain potential habitat for the following wildlife species: • Pronghorn antelope Allotment contains yearlong range for the Uinta-Cedar Mountain Herd, Unit 411 (population objective of 10,000, but at 8,800 as of 2006) • Mule deer Allotment contains crucial winter range and yearlong range for the Uinta Herd, Unit 423 (population objective of 20,000 but at 18,536 as of 2006) • Elk Allotment contains winter range in the southwest corner for the Uinta Herd, Unit 423 (population objective of 600 but at 750 as of 2006) • Moose Allotment contains winter and yearlong range for the Uinta Herd, Unit 415 (population objective of 900 but at 900 as of 2006) • Small mammals (ground squirrels, jack rabbits, cottontail rabbits) • Migratory bird habitat

CHAPTER 4: ENVIRONMENTAL EFFECTS

4.1 Alternative 1: Proposed Action

4.1.1 Floodplains

The Proposed Action alternative will benefit soils on the Milburne allotment, but may not benefit streamside vegetation as well as the No Action alternative. Therefore, this alternative will benefit floodplains in some ways, while it may hinder floodplain development and maintenance in other ways. Under this alternative livestock grazing would begin in June, rather than May. This will allow soils more time to dry prior to grazing which will limit soil compaction and bank shearing. Because livestock would only be on the allotment for one month (June 1 – June 30) there will be adequate time for riparian plants in the floodplain to re-grow. This will ensure that there is adequate vegetation present to protect the soils, and thereby the floodplain, during spring runoff or other high stream flow events.

However, livestock may tend to spend more time near riparian areas under this alternative than they would under the No Action alternative. In June, warmer temperatures, and less palatable upland forage may encourage livestock to make more use of riparian areas. This may lead to greater utilization rates on riparian vegetation. Also, this alternative would not include a deferred grazing period every third year as described in the No Action alternative (see section **4.2.1**for more details on the benefits of deferred rotational grazing).

4.1.2 Non-native or Invasive Plant Species

The presence and abundance of invasive plants is not expected to be considerably different under this alternative, than under the No Action and No Grazing alternatives.

Like birds and other wildlife, livestock can potentially transport invasive plant seeds on their coat and feet or in their digestive tract. Livestock may carry the seeds of invasive plants that are already present on an allotment, or they may carry seeds of invasive plants they were exposed to on private pastures. They have the potential, therefore, to disperse and introduce non-native or invasive plant species to an allotment. However, Stohlgren *et al* (1999) found that exotic species richness and frequency were basically the same on both grazed and ungrazed sites, suggesting that livestock grazing may not have a significant impact on the abundance of exotic plant species at a landscape scale.

The BLM coordinates with county weed and pest agencies to treat invasive plant species and limit their spread and abundance, as well as to educate ranchers and the general public of precautions they can take to limit the spread of invasive plants. This effort has proven successful in limiting the abundance of invasive plants within the Kemmerer Field Office planning area.

Because invasive plant species may be introduced and distributed in a variety of ways (including wind dispersion, water dispersion, animals (domestic and wild), vehicles, hikers and other recreationists), and because of the efforts the BLM and county agencies are taking to control invasive plant populations within the area, the presence, or absence, of livestock within the Milburne allotment is not expected to have a substantial impact on the presence or abundance of invasive plant species.

4.1.3 Water Quality, Drinking or Ground

The BLM expects the Proposed Action alternative will provide the same water quality protection as the No Action alternative, but less protection than the No Grazing alternative.

Livestock tend to spend a disproportionate amount of time near riparian areas, and other water sources, especially later in the grazing season when temperatures are warmer, and upland forage decreases in quantity and quality (McInnis & McIver 2001, Marlow & Pogacnik 1986, Belsky *et al* 1999). Spending more time near water sources, means that cows tend to urinate and defecate near those water sources more frequently. Cattle excrement contains nutrients and pathogens that could potentially impact water quality. However, scientific evidence linking livestock grazing on rangelands to impaired water quality is lacking (Nader *et al* 1998).

Both the Proposed Action and No Action alternatives would allow livestock grazing on the Milburne allotment. Due to the small size of the allotment, it is impractical to require mineral supplements to be placed a sufficient distance from water to prevent livestock from loitering near water sources. Although livestock distribution is better during colder months, this would be undesirable since colder months are also typically wetter months, when livestock are more likely to impact stream banks, and compact soil.

The primary water source on the Milburne allotment is the Bridger Butte Canal, which is used primarily for irrigation purposes, and does not provide water for fisheries or municipal purposes. Therefore, impacts to water quality under this alternative are expected to be minimal.

4.1.4 Wetlands/Riparian Zones

Livestock tend to spend a disproportionate amount of time near riparian areas, and other water sources, especially later in the grazing season when temperatures are warmer, and upland forage decreases in quantity and quality (McInnis & McIver 2001, Marlow & Pogacnik 1986, Belsky *et al* 1999). While grazing in riparian areas there are a number of direct and indirect impacts livestock may have on stream systems. Direct impacts to riparian systems from livestock grazing include: removal of riparian vegetation and soil disturbance from livestock hoof action. Some indirect effects livestock grazing may have on riparian systems include: impacts to channel morphology, change in shape and quality of the water column and alteration of streamside soil structure (Fleischner 1994).

The Proposed Action alternative will benefit riparian soils, but may not benefit riparian vegetation as well as the No Action alternative. Under this alternative, grazing would be deferred until June each year. This will allow more time for soils to dry prior to grazing each year, which will minimize soil compaction and bank shearing. However, livestock would likely spend more time in riparian areas under this alternative than they would under the No Action alternative, as warmer weather, and less palatable upland forage would encourage higher utilization of riparian vegetation. Also, the Proposed Action alternative does not provide for early season rest every third year, as the No Action alternative does.

4.1.5 Livestock

The Proposed Action alternative will provide a greater benefit to the livestock operation on the Milburne allotment than the No Action and No Grazing alternatives. Because the No Grazing alternative would exclude all livestock grazing from the allotment, it would have a deleterious effect on the livestock operation. The Proposed Action alternative is preferred over the No Action alternative by the livestock operator on the allotment, as they are the ones who made the request to change their season of use to June 1 – June 30. This will work into their private pasture rotation system better than the No Action alternative. However, under this alternative, livestock distribution may not be as good as it would under the No Action alternative.

4.1.6 Social & Economic Resources

Impacts of the Proposed Action alternative will be the same as the No Action alternative. These alternatives will allow the continuation of livestock grazing on the Milburne allotment. This will provide a positive economic benefit for the livestock operator. Local communities also benefit from these alternatives because livestock operators often purchase necessary equipment from local retailers (Moline *et al.* 1991). Proceeds from BLM grazing fees on the Milburne allotment would help provide funds for the State of Wyoming and the United States Treasury (see grazing fee distribution in **Table 3-2, Social & Economic Resources**). Grazing fees also help provide funds for completing range improvement projects (such as water developments, fencing projects, fuel treatments, etc.) in the local area.

4.1.7 Soils

The BLM expects the Proposed Action alternative to provide more protection for soils within the Milburne allotment than the No Action alternative. In comparison to the No Grazing alternative, this alternative would provide less soil protection.

Livestock grazing can impact the soil profile by reducing aboveground biomass, thereby exposing more of the soil surface to splash and wind erosion, and by compressing the soil surface (Holechek *et al* 2004, pp. 379). This has been shown to lead to lower infiltration rates (Taylor *et al* 1993), which leads to more surface runoff (Liacos 1962), which can lead to increased sediment production (Pluhar *et al* 1987), indicating an increase in the amount of erosion occurring in the area. Soil compaction and erosion is likely to be most noticeable near fences, livestock trails and other areas of concentrated movement. The Proposed Action alternative would benefit soils by delaying grazing until later in the year when soils are less prone to soil compaction.

Some other potential impacts from livestock grazing include: improved nutrient recycling, improved availability of some nutrients, changes in carbohydrate fixation, integrating mulch into the soil, and increasing the rate of humus development (Holechek 1981). Livestock grazing may also improve carbon sequestration in some plant communities (Reeder & Schuman 2002).

4.1.8 Special Status Species - Animals

A wildlife clearance completed for the Milburne allotment on September 2, 2009 based on the BLM GIS database and a field visit did not find potential habitat available for any threatened or endangered species and thus, formal consultation with the USFWS was not initiated. Individual gray wolves dispersing in the area may be impacted by grazing activities if they are seen as potential threats by livestock operators. Since there are no known denning sites located on the allotment, grazing on this allotment and general human disturbance would not contribute to population declines under the Endangered Species Act (ESA). Potential habitat does occur for the greater sage grouse, a candidate species under the ESA. The Milburne allotment is not located in a greater sage grouse core area, nor is it within 2 miles of a known lek, but it does contain suitable sage grouse nesting and brood rearing habitat. Grazing has the potential to degrade sage grouse nesting habitat, or improve it under some circumstances (late brood rearing and fall) by changing the composition, quantity, or quality of vegetation and litter. The potential negative impacts from cattle grazing under the Proposed Action on sage grouse could include trampling of nests, reduction in food quality or quantity, and reduction of vegetative cover exacerbated by the timing of cattle grazing coinciding with peak chick mortality during early brood rearing. Chick survival is dependent upon an abundant prey source consisting of insects such as beetles and grasshoppers and an abundant plant community of forbs to provide both food and prey habitat (Cagney et. al. 2010).

There is potential habitat available for several BLM Special Status Species such as pygmy rabbits and sage-obligate species such as sage thrasher, Brewer's sparrow, and sage sparrow. The potential negative impacts from cattle grazing on these species could include trampling of nests/burrows, competition for forage, reduction in food quality or quantity, and reduction of vegetative cover (Taylor 1986). The BLM does not apply timing limitation stipulations to grazing permits because adhering to the Standards and Guidelines should maintain the range for multiple uses. Implementation of the Proposed Action would alter the season of use for cattle from May in years one and two and October in year three to June of every year. BLM biologists have concluded that renewal of the grazing permit under the Proposed Action analyzed in this EA will not contribute to the listing of any BLM sensitive species under the ESA.

4.1.9 Vegetation

The Proposed Action alternative will likely benefit upland vegetation, while being deleterious to riparian vegetation. Most key riparian species reproduce vegetatively (via rhizomes or similar features) as well as by seed production. Given appropriate utilization levels and adequate rest periods, these species can recover from herbivory and still reproduce vegetatively. However, most key upland vegetation (such as Indian Ricegrass) reproduces solely by seed. Therefore, it is important for these plants to produce a seed crop regularly. Early season grazing can harm upland vegetation by defoliating the plant when it is trying to produce a seed crop. This is when these plants are most vulnerable to defoliation.

The Proposed Action alternative will benefit upland vegetation by allowing most of the key species time to produce a seed crop for the year, prior to grazing. Also, livestock are likely to spend more time near riparian areas under this alternative, thereby minimizing utilization of upland vegetation. However, this will cause riparian vegetation to be more highly utilized. This can impact the fecundity and vigor of riparian vegetation, making it more susceptible to future disturbance.

Under this alternative 30 AUMs on the public land within the Milburne allotment would be removed from the system each year. Livestock may impact vegetation by removing it, or trampling it. Some of the impacted plants may recover and still be able to set seed. Some plants will not be able to recover sufficiently to produce a seed crop during that growing season.

Grazing impacts will influence different plant species in different ways, depending on their resistance and tolerance to herbivory. Over time, plants that are resistant to grazing tend to become more dominant, while plants that are sensitive to grazing tend to become less abundant.

The interactions between grazers and grazed plants are complex and difficult to study and understand (Holechek 2004, pp. 140). Table 4-1 compares some of the ways livestock grazing may benefit vegetation, with some of the ways livestock grazing may be deleterious to vegetation.

Table 4-1. Ways in which livestock grazing may be beneficial or deleterious to vegetation resources.

Potentially Beneficial	Potentially Deleterious
Grazers reduce the amount of excess vegetation that can have a negative effect on net carbohydrate fixation (Holechek 2006).	Livestock grazing may alter species composition within vegetation communities (Fleischner 1994).
Grazers may help maintain an optimal leaf area index (Holechek 2006).	Livestock grazing may alter ecological succession (Fleischner 1994).
Livestock grazing may reduce water loss to transpiration (Holechek 2006).	Livestock grazing may change vegetation stratification (Fleischner 1994).
Grazing removes excess accumulations of dead material that may inhibit net growth (Holechek 2006, Holechek 1981).	Livestock grazing may decrease water availability for plants, by increasing soil compaction (Fleischner 1994).
Grazing may promote tillering in some grass species (Holechek 2006).	Forage removal may allow soil temperatures to rise, which could increase evaporation (Fleischner 1994).
Grazers may stimulate plant growth by inoculating plant parts with their saliva (Holechek 2006).	Livestock grazing alters the nutrient cycle (Fleischner 1994) which may affect nutrient availability for plants.
Livestock can help trample seeds into the ground, which may improve germination rates (Holechek 1981).	Herbivores modify the growth form of plants by consuming terminal buds thereby promoting lateral branching (Fleischner 1994).
Livestock grazing may reduce the frequency of wildfires (Holechek 1981). Note: may be beneficial or detrimental.	Livestock grazing may reduce the frequency of wildfires (Holechek 1981). Note: may be beneficial or detrimental.
Some plants increase the flow of growth hormones following herbivory (McNaughton 1979).	
Some plant species may be more productive and more fit as a result of being grazed (McNaughton 1979, Paige and Whitham 1987).	

When considering the impacts listed in Table 4-1, it is important to remember that the specific impacts, and the degree to which the plants are affected, are directly influenced by the intensity and season of grazing. For example, species composition may not be altered under a conservative stocking rate (~35% forage utilization), but may be altered under a heavy stocking rate (forage utilization >50%).

Overall, response to herbivory is influenced by a number of factors, including (Holechek *et al* 2004, pp. 141, McNaughton 1979):

- Genetic potential of the plant
- Which plant tissues are removed
- Developmental stage of the plant at the time of defoliation
- Growth promoting features
- Intensity and frequency of herbivory
- Environmental constraints (i.e. light, nutrients, temperature, water availability, etc…)

4.1.10 Wildlife

The effects of livestock grazing under the Proposed Action on general wildlife may be minimal because actions undertaken to improve rangeland and riparian habitat (livestock water developments, exclosures, fencing, and conversions) must meet the Wyoming Standards for Healthy Rangelands. The Wyoming Game and Fish Department, in a letter dated June 12, 2009, stated that they have no terrestrial wildlife or aquatic concerns related to livestock grazing on this allotment. A wildlife clearance based on the BLM GIS database and a field visit completed September 2, 2009, showed that the Milburne allotment does contain potential winter and yearlong range for pronghorn antelope, mule deer, elk and moose. The presence of livestock could temporarily displace some wildlife from preferred habitats (behavioral avoidance) and create competition for forage (Kraussman 1996). Studies of elk and mule deer have demonstrated that these species will avoid or decrease use of areas that are simultaneously being grazed by cattle (Frisna 1992; Griffith and Peak 1989; Wallace and Kraussman 1987). Pronghorn antelope may be impacted by grazing via alteration of vegetation structure and from a reduction in fawn production in modified/degraded habitat (Ellis 1970). Under the Proposed Action, however, competition would be minimal due to limited time overlap between livestock and wildlife and the lack of any overlap during winter when forage is scarcer. Adverse impacts of fences on wildlife, especially big game species, would be minimal because of location requirements that would not impede wildlife movement and because fences may be removed, modified, or reconstructed where documented conflicts with wildlife occur.

In addition to the impacts on big game species, grazing may also impact migratory birds and small mammals such as rodents and lagomorphs. Currently there are 836 bird species that are protected under the Migratory Bird Treaty Act which makes it illegal for people to "take" migratory birds, their eggs, feathers or their nests. Take is defined as any attempt at hunting, pursuing, wounding, killing, possessing or transporting birds, nests, eggs or parts thereof and includes incidental take as a result of human activities including livestock grazing. Cattle grazing under the Proposed Action may impact migratory birds by alteration of habitat structure

and community composition, reduction in cover, reduction in food quality or trampling/destruction of nests. Likewise, cattle grazing has been shown to decrease rodent species diversity and richness (reviewed in Jones 2000) as well as abundance (Rosenstock 1996) and to create competition for forage between cattle and jackrabbits (Sparks 1968). Since it has been well documented that a significant positive relationship exists between maternal body mass and the mean mass of both individual progeny and entire litters (Huxley 1927; Leitch et al. 1959; Rahn et al. 1975; Millar 1977; Blueweiss et al. 1978), cattle grazing may ultimately result in lower reproductive success and infant survival for birds and mammals as a result of lower maternal body mass due to competition with cattle for forage. Since reproduction takes place for both birds and small mammals in the spring and summer, these impacts would be similar under both the Proposed Action and the No Action Alternative. However, under the Proposed Action more forage would be available in June than in May due to warmer temperatures and higher precipitation levels which may decrease the amount of competition between cattle and wildlife and thus decrease negative impacts to reproductive success.

4.2 Alternative 2 – Current Management (No Action Alternative)

4.2.1 Floodplains

The No Action alternative will provide some benefits for vegetation, but will likely be deleterious to soils. Under this alternative, grazing would occur in May, two out of three years. Early season grazing can improve livestock distribution, because colder weather, presence of insects and more palatable upland forage encourages livestock to spend more time in the uplands than they do during the warmer months of the year. Early season grazing also allows plenty of time for riparian vegetation to recover after defoliation from herbivory. However, in this area soils typically contain more moisture in May than in June, making them more susceptible to compaction and bank shearing from livestock use.

This alternative does provide for early season rest every third year, when the allotment is grazed in October (when most grasses are dormant) instead of May. This provides plant communities an opportunity to go through an entire growing season without disturbance, every third year. By doing so, this system allows some plants (especially highly palatable plants) an opportunity to store carbohydrates and set seed every third year. Over time this can improve the overall health and vigor of plant communities within the Milburne allotment.

4.2.2 Non-native or Invasive Plant Species

Impacts from Non-native or Invasive Plant Species are expected to be the same as under the Proposed Action alternative (see section **4.1.2**).

4.2.3 Water Quality, Drinking or Ground

Impacts to water quality are expected to be the same as under the Proposed Action alternative (see section **4.1.3**).

4.2.4 Wetlands/Riparian Zones

The No Action alternative will provide some benefits for vegetation, but will not be as beneficial to riparian soils as the Proposed Action alternative (see discussion in section **4.2.1** for more details).

4.2.5 Livestock

The No Action alternative is not as beneficial to the livestock operator on this allotment as the Proposed Action alternative would be. This alternative would be more beneficial than the No Grazing alternative, as that alternative would exclude all livestock grazing in the Milburne allotment. The livestock operator requested the changes specified in the Proposed Action alternative because current grazing management on the allotment doesn't fit in with the rotational schedule they use on their private lands, which surround the Milburne allotment. However, this alternative may promote better livestock distribution than the Proposed Action alternative.

4.2.6 Social & Economic Resources

Impacts of the No Action alternative would be the same as the Proposed Action alternative (see section **4.1.6**).

4.2.7 Soils

The No Action alternative will not benefit soils as much as the Proposed Action or No Grazing alternatives. Under this alternative, the Milburne allotment would be grazed one month earlier (May rather than June). Soil moisture content is likely to be higher at this time of year, which makes soils more susceptible to compaction and bank shearing. However, this alternative would promote better livestock distribution, which may minimize soil compaction. Impacts to soils may also be alleviated by the early season rest every third year that this alternative would provide.

4.2.8 Special Status Species - Animals

Renewal of the existing grazing permit with the same terms and conditions would maintain conditions of plant communities within the Milburne allotment analyzed in this EA that are capable of sustaining viable populations and diversity of native plant and animal species appropriate to the area. Renewal of the existing grazing permit would produce no additional negative impacts to the sage-obligate species utilizing the allotment. Therefore, continuation of the existing grazing permit would not produce any additional negative impacts to threatened, endangered, candidate or BLM sensitive species. General impacts of cattle grazing for special status species were previously discussed in **4.1.8**.

4.2.9 Vegetation

The No Action alternative will likely benefit riparian vegetation, while impacting upland vegetation (see discussion in section **4.1.9**). Because this alternative would promote better livestock distribution on the Milburne allotment, it will limit utilization levels on riparian areas. It will also provide for early season rest every third year. However, it will cause upland plants to be grazed during their most susceptible time, as they try to produce a seed crop for the year.

4.2.10 Wildlife

Renewal of the existing grazing permit with the same terms and conditions would maintain conditions of plant communities within the Milburne allotment analyzed in this EA that are capable of sustaining viable populations and diversity of native plant and animal species appropriate to the area. Renewal of the existing grazing permit would produce no additional negative impacts to species utilizing the allotment such as big game species and small mammals such as ground squirrels and jack rabbits. General impacts of cattle grazing on general wildlife species were previously discussed in **4.1.10**.

4.3 Alternative 3 – No Grazing Alternative

4.3.1 Floodplains

The No Grazing alternative provides the greatest amount of protection for floodplains, as livestock would not be allowed to graze on the Milburne allotment under this alternative. This would limit defoliation of streamside vegetation to insects and wildlife. Soil compaction and bank shearing would also be minimal and limited to natural events under this alternative.

4.3.2 Non-native or Invasive Plant Species

This alternative would eliminate one of the potential mediums for transportation of invasive plant seeds on this allotment. However, Stohlgren *et al* (1999) found that exotic species richness and frequency were basically the same on both grazed and ungrazed sites, suggesting that livestock grazing may not have a significant impact on the abundance of exotic plant species at a landscape scale.

Because invasive plant species may be introduced and distributed in a variety of ways (including wind dispersion, water dispersion, animals (domestic and wild), vehicles, hikers and other recreationists), and because of the efforts the BLM and county agencies are taking to control invasive plant populations within the area, the presence, or absence, of livestock within this allotment is not expected to have a substantial impact on the presence or abundance of invasive plant species.

4.3.3 Water Quality, Drinking or Ground

By removing livestock from this allotment, this alternative would reduce the amount of animal waste deposited in or near water sources. Waste contains nutrients and pathogens that could potentially impact water quality. Some nutrients found in animal waste stimulate algal growth and may lead to algal blooms (Belsky *et al* 1999). However, scientific evidence linking livestock grazing on

rangelands to impaired water quality is lacking (Nader *et al* 1998).

The BLM expects that the No Grazing alternative would provide more water quality protection than the No Action and Proposed Action alternatives. Water quality would be expected to remain the same, or improve under this alternative.

4.3.4 Wetlands/Riparian Zones

Total rest is likely the best method for showing rapid improvements in riparian and wetland areas that are in need of improvement. Total absence of domestic herbivores eliminates many of the impacts that are detrimental to riparian systems. However, no issues where identified with riparian communities within the Milburne allotment when the Standards for Healthy Rangelands assessment was completed for the allotment in 2009.

4.3.5 Livestock

The No Grazing alternative would entirely eliminate livestock grazing on public land within the Milburne allotment. The current permittee would then need to find other private or public pastures on which to graze their livestock. If acquisition of other pasture is not possible, or is not financially sustainable, the permittees would then have to reduce their number of livestock. This alternative would also require herding and/or fence modifications to keep livestock off of public land. All of these factors would place additional financial stress on the current permittee.

4.3.6 Social & Economic Resources

As mentioned in section **4.3.5** the No Grazing alternative would place a financial burden on the livestock operator who would have to fence their private land and/or find alternative pasture for their livestock. Many ranchers would be forced to sell their ranches if they lost their ability to graze on their public land allotments (Sulak & Huntsinger 2002, 2007 as cited in Brunson & Huntsinger 2008). Even if the livestock operator was able to find private pasture to compensate for losing their public AUMs, the increased cost would be considerable (almost 12 times more per AUM, see **Social & Economic Resources** in **Table 3-4**).

Like much of the rural west, Uinta County Wyoming has experienced a population influx over the past few years (see **Social & Economic Resources** in **Table 3-4** for details). Private land that borders public land is at a high risk of being developed, due to its amenity values and recreational opportunities (Talbert *et al* 2007, Hansen *et al* 2002). The No Grazing alternative could provide substantial incentives for livestock operators to sell their private land to housing developers. Housing developments, and their associated roads and utilities, would further fragment the landscape, and impact soil, vegetation, invasive and non-native plant species, wildlife, riparian areas and water quality. The degree of impact would be directly related to the degree of development in the area.

4.3.7 Soils

The No Grazing alternative would provide the most protection to soils within the Milburne allotment. The lack of large domestic herbivores would limit impacts to soils to those caused by wildlife and other natural events. Soil compaction would be minimized, as would loss of soils to wind and water erosion.

4.3.8 Special Status Species – Animals

The No Grazing alternative would provide the most protection to special status species within the Milburne allotment as compared to the Proposed Action or the No Action Alternatives. The absence of livestock would eliminate or reduce deleterious impacts from habitat alteration, reductions in cover and forage quality, or inadvertent nest or burrow destruction due to trampling.

4.3.9 Vegetation

The No Grazing alternative would eliminate the impacts listed in **Table 4-1** (both potentially beneficial impacts, and potentially deleterious impacts). Vegetation would be entirely devoted to wildlife and ecosystem functions (such as nutrient cycling, sediment filtration, etc.). However, West *et al* (1984) found that total exclusion of livestock does not always lead to an improvement in forage production. Other studies have also shown that removal of livestock grazing can lead to lower forage production, an increase in shrub cover, and a decrease in species richness and plant diversity (Manier & Hobbs 2007, Patton *et al* 2007).

4.3.10 Wildlife

The No Grazing alternative would provide the most protection to general wildlife within the Milburne allotment as compared to the Proposed Action or the No Action Alternatives. The absence of livestock would eliminate or reduce deleterious impacts from habitat alteration, behavioral avoidance on the part of big game animals, reductions in cover and forage quality, inadvertent nest or burrow destruction due to trampling and reductions in species richness and diversity.

4.4 Cumulative Effects

4.4.1 Cumulative Effects Common to All Alternatives

4.4.1.1 Landscape Grazing

Much of the land in this region is grazed on a regular basis. Therefore, many of the impacts listed in section **4.1** and **4.2** are also occurring throughout the area. Therefore, grazing throughout the landscape has a cumulative effect on a landscape scale. This is especially important when considering things like wildlife and water quality, as these resources may be impacted more by landscape scale impacts, than site specific impacts.

4.4.1.2 Oil & Gas

Considerable oil and gas development has been taking place in southwest Wyoming over the past few years. No oil and gas developments have occurred within the Milburne allotment. Some oil and gas development has occurred within 1 mile of the allotment, but areas of more concentrated development are at least 10 miles away. Most of the development around this allotment has occurred over the last 20-30 years.

Development of well pads and associated pipelines and roadways has the potential to displace vegetation, and fragment habitat. The degree and duration of disturbance is directly associated with the intensity and duration of development, and the success of reclamation. Oil and gas development, along with the other effects listed in this chapter, may act together to impact livestock grazing, wildlife habitat (including sage grouse), water quality, soil stability, the presence of invasive plants, the condition of riparian and wetland systems, and the presence and abundance of desirable vegetation.

Especially considering the current push for America to become more energy independent, it is likely that oil and gas development will continue around this allotment.

4.4.1.3 Wind Development

Wind energy development has been on the rise throughout Wyoming over the last few years. Two large wind energy developments have been established within 20 miles of the Milburne allotment, one on Bridger Butte (~5 miles from Milburne) and one on the Bear River Divide (~20 miles from Milburne). Recent governmental policy has pushed for more wind energy development in the United States. However, impacts and interactions between these wind farms and sensitive wildlife species (such as Sage grouse) are not yet fully understood. Therefore, the future of wind energy development in the area is unknown at this time.

4.4.1.4 Wildlife

Minor landscape-level negative cumulative impacts to vegetation and wildlife could occur from the combined influences of grazing and other past, present, and future land uses in this allotment. However, implementation of the Proposed Action, in combination with other past, present, and future land uses, is expected to maintain the physical structure and ecological function of plant communities. For example, the allotment consists of a mixture of sagebrush with perennial grasses and forbs. These plant communities provide habitat for a variety of small mammals such as ground squirrels and various other rodents, rabbits, and burrowing species. In addition, a variety of small bird species, both migratory and year-round residents, may also occur in the area. These species are, in turn, preyed upon by larger carnivores such as fox, coyote, mountain lion, bear, badger, skunk, and by raptor species such as golden eagles and various hawks. Proper management of the multiple uses of BLM owned lands, including grazing, could improve the biodiversity of both plant and animal communities at the landscape level. Livestock grazing and in particular, water developments, could be beneficial to wildlife by opening areas for forage consumption that are currently not available due to lack of water or distance from water. Effects from vegetation treatments, such as prescribed burns, could benefit most wildlife species through an increase in grass and forb species and vegetation production from conversion of high-density sagebrush to sagebrush/grass communities.

The majority of cumulative effects on wildlife habitat would result from surface disturbing and disruptive activities, such as mineral development and associated wells, roads, pipelines, and facilities; rangeland improvements; and other such activities (e.g., geophysical exploration). Effects would be in the form of habitat fragmentation and animal displacement. Vegetation treatments in the form of prescribed burns could also affect wildlife resources, particularly greater sage-grouse. If private land currently used for grazing were sold for residential or commercial development, the loss of connectivity between habitats and the loss of vegetation could result in a reduction in the availability and quality of forage and could result in increasing competition among grazing animals. Habitats could be made unavailable to wildlife because of human disturbance factors such as traffic, noise, or increases in livestock during sensitive time periods such as winter, parturition, nesting, and early rearing of young. Impacts on wildlife could be significant if activities were concentrated in areas of sensitive wildlife habitat and/or if increased development and surface disturbance altered existing migration corridors to the extent that access to important habitat areas was greatly reduced. Habitat fragmentation occurs when a contiguous habitat is broken up (fragmented) by disturbing activities, causing a reduction in usable ranges and the isolation of smaller, less mobile species; a loss of genetic integrity within species or populations; and an increase in the abundance of habitat generalists that are characteristic of disturbed environments (i.e., competitors, predators, and parasites). The primary fragmentation factor affecting wildlife species (especially big game) is the reduction in usable habitat and the disruption of migration corridors. Transportation routes tend to fragment habitats and can act as barriers to some species, especially in severe winter conditions. Fragmentation factors affecting wildlife in this allotment analyzed in this EA may include state highways, rural roads, mineral development infrastructure, and rivers.

4.4.1.5 Irrigation

Flood irrigation on Nebraska Flat, just above the Milburne allotment, has caused seeps to form on the Milburne allotment. Also, an irrigation ditch (Bridger Butte Canal) runs through the allotment. Therefore, irrigation activities in the area around the Milburne allotment have an impact on ecosystem processes within the allotment.

4.4.2 Cumulative Effects - Alternative 1: Proposed Action

As mentioned in section **4.4.1.1** livestock grazing is occurring throughout the area that surrounds this allotment. The combination of landscape scale grazing, and other human activities that disturb soils and vegetation (such as roads, irrigation, oil and gas development, housing development, recreational activities, etc…) may have a cumulative impact on the human environment. The combination of these disturbances may further displace wildlife, impact water quality, degrade riparian habitat, and impact nutrient cycling and other important ecosystem functions.

Overall, the cumulative effects of the Proposed Action alternative are expected to be fewer, and less substantial than the cumulative impacts of the No Grazing alternative. Because of the abundance of private land in the area around the Milburne allotment, the removal of grazing from the 240 acres of BLM land in the allotment will not provide a landscape scale benefit to the human environment. Additionally, cumulative impacts from livestock grazing can be minimized through proper grazing management. Cumulative effects of the No Action alternative are expected to be the same as the Proposed Action alternative.

4.4.3 Cumulative Effects - Alternative 2 – Current Management (No Action Alternative)

Cumulative effects under the No Action alternative would be the same as those described under section **4.4.2**.

4.4.4 Cumulative Effects - Alternative 3 – No Grazing Alternative

As mentioned in section **4.3.6**, the No Grazing alternative may provide an incentive for the private land owner to sell their private lands. Studies have shown that as many as 45% of ranches are being sold every decade in the United States (Gosnell & Travis 2005 as cited in Brunson & Huntsinger 2008). When sold, private ranchland is often subdivided and used for housing developments, or their associated amenities. When this happens, the private ranchland looses most of its ecological values. Such developments not only eliminate habitat for plants and wildlife, but they also act to fragment the landscape, making it more difficult for wildlife to move from one block of suitable habitat to another.

The loss of habitat from development may combine with other impacts, such as landscape scale grazing, oil and gas development, recreational activities and other disturbances to have a cumulative impact on the human environment. The combination of these disturbances may further displace wildlife, impact water quality, degrade riparian habitat, and impact nutrient cycling and other important ecosystem functions. Some of these impacts may be offset, to some degree, by the removal of livestock grazing from the BLM land within the Milburne allotment. However, as this allotment only contains 240 acres of BLM land, the potential offset is not

expected to be substantial.

Overall, the cumulative effects of the No Grazing alternative are expected to be more substantial than the cumulative effects of the Proposed Action alternative. See section **4.4.2** for details on the differences in cumulative effects between these two alternatives. These differences are expected to be the same as those between the No Grazing and the No Action alternatives.

CHAPTER 5: REFERENCES

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