



ENVIRONMENTAL ASSESSMENT

PROPOSED LIVESTOCK USE AUTHORIZATION ON PUBLIC LANDS NORTHWEST OF DUBOIS, IDAHO in CLARK COUNTY

DOI-BLM-ID-I010-2013-0015-EA

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CHAPTER 1 - INTRODUCTION

Background

There are several authorities which mandate or allow the Bureau of Land Management (BLM) to authorize livestock grazing on public lands as part of multiple-use management of natural resources. Livestock grazing is an accepted and valid use of public lands under the Taylor Grazing Act of 1934, the Federal Land Policy and Management Act (FLPMA) of 1976, and the Public Rangelands Improvement Act (PRIA) of 1978. This Environmental Assessment (EA) is prepared, pursuant to the National Environmental Policy Act (NEPA) of 1969, to address an application to graze livestock on two public land parcels located 4 miles northwest of Dubois, Idaho in Clark County.

A livestock grazing application was received in the fall of 2011 for two public land parcels located 4 miles northwest of Dubois, Idaho in Clark County (Figures 1 and 2). The two small BLM parcels total 45 acres and are unfenced from approximately 483 acres of adjacent private land. The parcels of public and private land totalling approximately 528 acres are coupled by a fence on the perimeter of the area. The general relief of the area is characterized by nearly level lava plains, terraces, and benchlands, with some rolling foothills. The average elevation in the allotment is 5,300 feet above sea level. Average annual precipitation in the area ranges from 8 to 12 inches with roughly 50 percent occurring during the plant growing season from April to July.

Purpose and Need for Action

The Medicine Lodge Resource Management Plan (RMP, 1985) identified the public lands specified in the application as available for domestic livestock grazing. Where consistent with the goals and objectives of the RMP and Idaho Standards for Rangeland Health and Guidelines for Livestock Grazing Management (ISRH), the BLM authorizes allocation of forage for livestock grazing to qualified operators. The purpose of the proposed action is to authorize livestock grazing consistent with BLM policy and in a manner that maintains or improves resource conditions and achieves the objectives and desired conditions described in the Medicine Lodge RMP. The analysis is needed to address the application for grazing authorization on the public land parcels located northwest of Dubois, Idaho.

The Evaluation Report (USDI-BLM 2012) for the public parcels northwest of Dubois, Idaho concluded that the area was meeting Standard 1 (Watersheds), Standard 5 (Seedings) and Standard 8 (Threatened and Endangered Plants and Animals). Standards 2 (Riparian Areas/Wetlands), 3 (Stream channels/Floodplains), 4 (Native Vegetation), 6 (Exotic Plant Communities) and 7 (Water Quality) were not applicable in the area.

Location

The parcels proposed for livestock use are located in Clark County northwest of Dubois, Idaho (Figures 1-2).

Figure 1 – General location of the parcels proposed for livestock use.

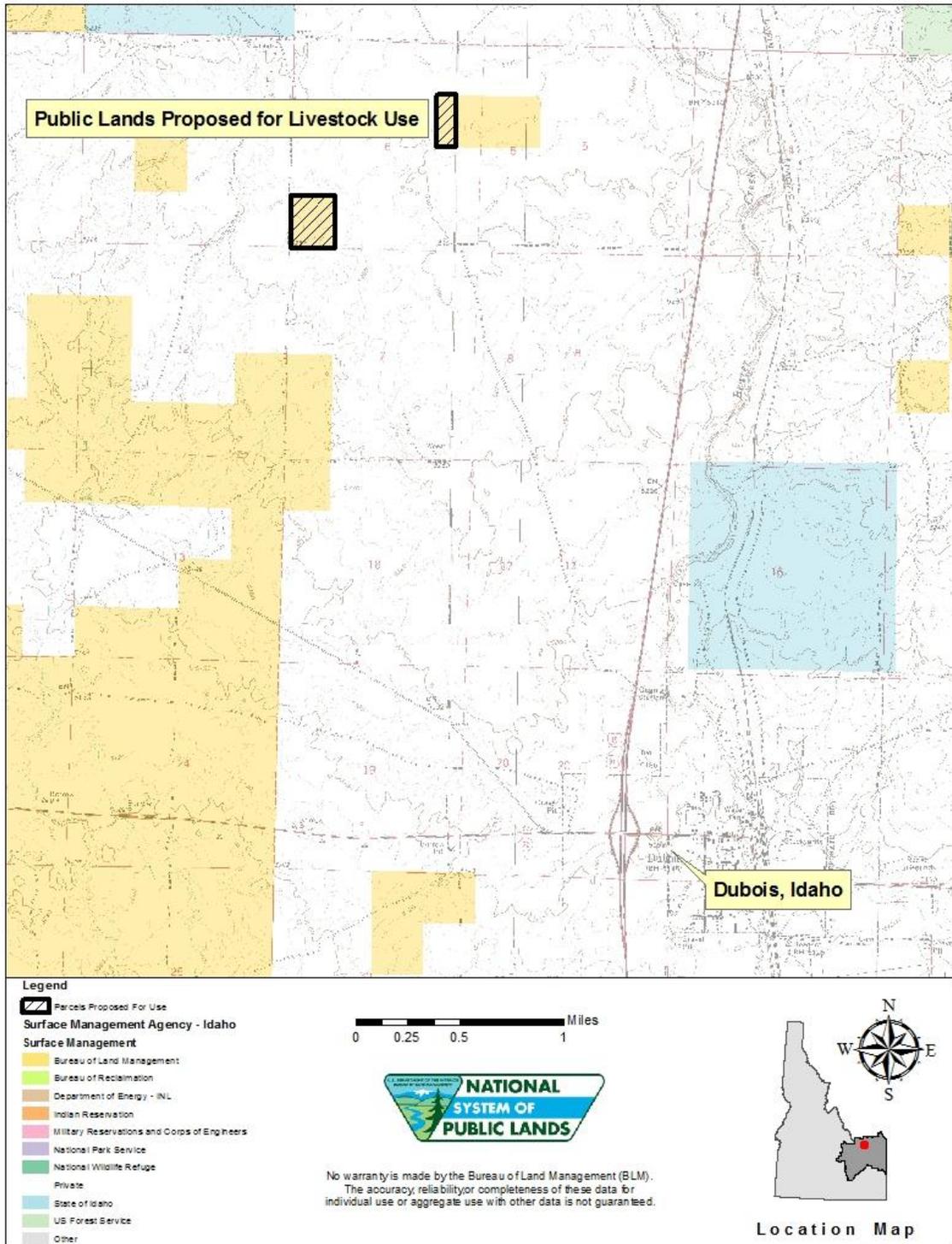
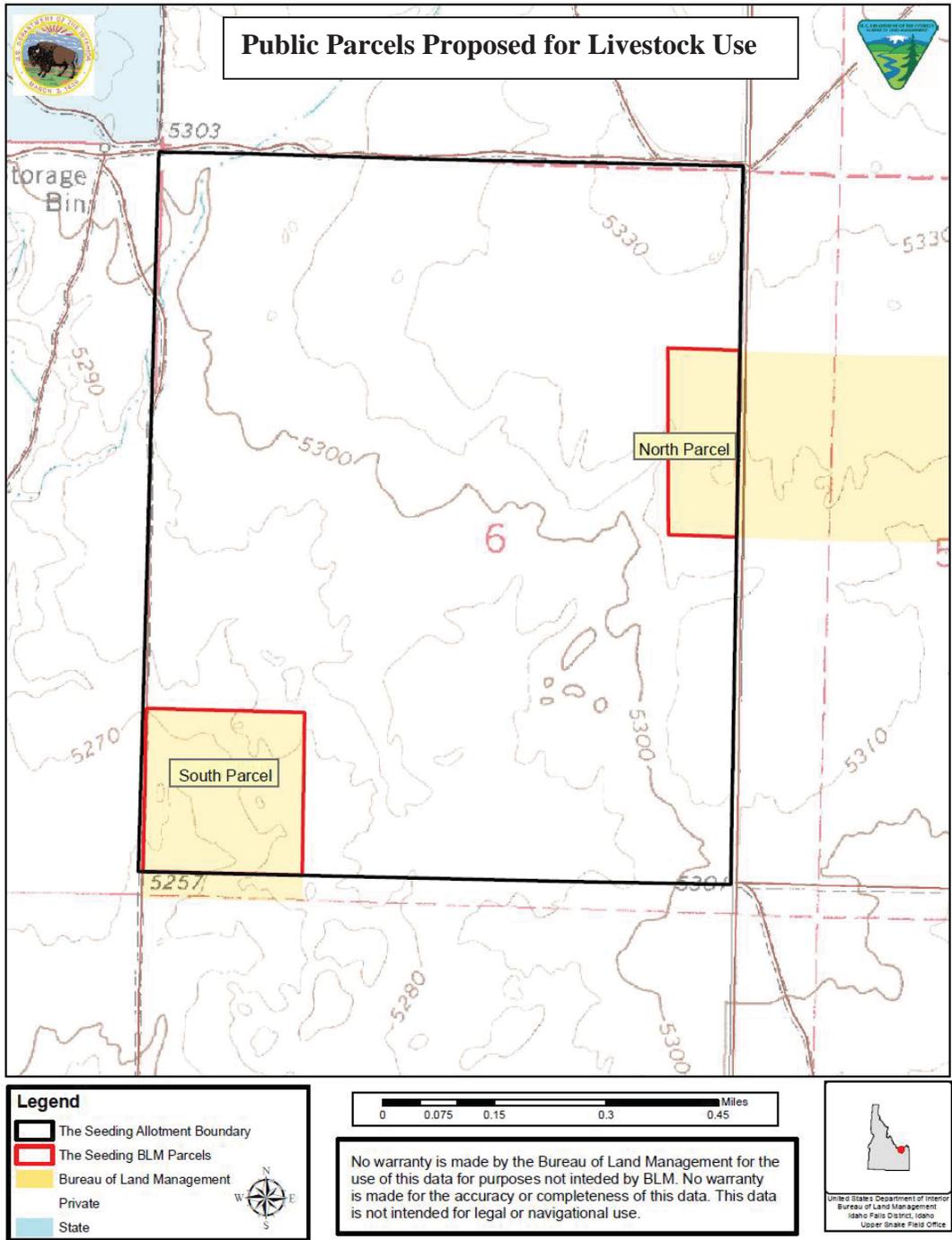


Figure 2 –Parcels Proposed for Livestock Use



Conformance with Land Use Plan

The alternatives for the public parcels northwest of Dubois have been reviewed for conformance with the Medicine Lodge RMP as amended by the Fire Fuels, and Related Vegetation Management Direction Plan Amendment (FMDA). The area is located within Management Unit 2 (Table Butte/Twin Buttes) of the RMP. The area is located within Management Unit 2 of the RMP. The actions are in conformance with the RMP decisions to:

“Manage 154,664 acres of public land for grazing purposes. Manage 27,436 acres which lie within the Big Butte Resource Area for grazing purposes. Improve 15,880 acres of range land from poor or fair range condition to good range condition. Increase stocking levels in the long term by 3,167 AUMs over existing use levels (DOI-BLM 1985).”

Relationship to Statutes, Regulations or Other Plans

The 1868 Fort Bridger Treaty, between the United States and the Shoshone and Bannock Tribes, reserves the Tribes right to hunt, fish, gather, and exercise other traditional uses and practices on unoccupied federal lands. Under this treaty the federal government has a unique trust relationship with the Shoshone-Bannock Tribes. BLM has a responsibility and obligation to consider and consult on potential effects to natural resources related to the Tribes treaty rights or cultural use.

Grazing administration exclusive of Alaska is governed under the Federal Code of Regulations 43 CFR 4100 – Grazing Administration. The purpose is to provide uniform guidance for administration of grazing on public lands.

On August 12, 1997, ISRH were approved by the Secretary of the Interior. Subsequently, livestock management practices must be in conformance with the approved standards and guidelines.

6840 – Special Status Species Management Manual. This manual establishes policy of management of species listed or proposed for listing pursuant to the Endangered Species Act and Bureau sensitive species which are found on BLM-administered lands.

Greater Sage-Grouse Interim Management Policies and Procedures (Instruction Memorandum No. 2012-043). The IM provides interim conservation policies and procedures to the BLM field officials to be applied to ongoing and proposed authorizations and activities that affect the Greater Sage-Grouse and its habitat.

A Report on National Greater Sage-Grouse Conservation Measures: To ensure BLM management actions are effective and based on the best available science, the National Policy Team created a National Technical Team (NTT) in August of 2011. The BLM’s objective for chartering this planning strategy was to develop new or revised regulatory mechanisms, through Resource Management Plans (RMPs), to conserve and restore the greater sage-grouse and its habitat on BLM-administered lands on a range-wide basis over the long term.

The Upper Snake Local Working Group's Plan for Increasing Sage-Grouse Populations (USLWG 2009) and the Conservation Plan for Greater Sage-Grouse in Idaho (ISGAC 2006). These plans provide local and state specific guidance to manage sage grouse and sage grouse habitats.

Evaluation Reports (USDI-BLM 2012) assessing conformance with the ISRH were issued for the public parcels proposed for livestock use in December of 2012. The report found that Standards 1, 5, and 8 were being met in the area. The other standards were not applicable to the area evaluated.

Public Contact and Issue Identification

In the spring of 2012, the USFO sent a letter to permittees, lessees, interested publics, and other agencies inviting them to participate in the allotment assessments planned in 2012, which included the area proposed for livestock use. Participation and contributions throughout the process were only received by the applicant. In November of 2012, the USFO sent an Allotment Assessment (USDI-BLM 2011a) to the applicant, which summarized the results of the field assessment and other monitoring information available for the allotment. The applicant was asked to provide any other allotments specific information which would be considered in the Evaluation Report. No other information was provided. In December of 2011, the Evaluation Report and identified alternatives were sent to the applicant. The applicant was asked to reply if they had any questions or concerns regarding the report or identified alternatives. Comments were received by the applicant.

CHAPTER 2 - NO ACTION AND OTHER ALTERNATIVES

Alternative A (Proposed Action) –Authorize Livestock Grazing

An application has been submitted to the USFO to graze livestock on two public land parcels fenced within a larger private land pasture. Under the Proposed Action, the USFO Manager would authorize livestock grazing on the public parcels with the mandatory terms and conditions discussed below. Under Alternative A, no additional improvements or projects would be authorized in the area.

1. Establish the Hagenbarth Seeding Allotment comprised of two parcels of public land totaling approximately 45 acres.
2. Allocate eight AUMs on the 45 acres of public land. The new allotment would be used in conjunction with 483 acres of private land.
3. Designate the allotment as a Custodial Use Allotment.
4. Establish a season of use from 5/1 – 12/31.
5. Authorize yearling cattle use in the new allotment.

6. The permittee shall provide administrative access across private and leased lands to the Bureau of Land Management for the orderly management and protection of the public lands (43 CFR § 4130.3-2 (h)).

7. Permitted livestock use within the Hagenbarth Seeding Allotment would be as follows:

| <u>Allotment Name</u> | <u>Lvstk #</u> | <u>Livestock kind</u> | <u>Begin</u> | <u>End</u> | <u>%PL</u> | <u>Type of Use</u> | <u>AUMs</u> |
|-----------------------|----------------|-----------------------|--------------|------------|------------|--------------------|-------------|
| Hagenbarth Seeding | 800 | Yearling Cattle | 5/1 | 12/31 | 100% | Custodial | 8 |

Alternative B (No Grazing)

Under a No Grazing alternative, the USFO Manager would not authorize livestock grazing on the public land parcels. The application to graze would be denied and no preference or authorization would be made for livestock grazing in the area.

1. Deny the application to graze livestock on the 45 acres of public land.

CHAPTER 3 - AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

This chapter provides a description of the general environmental setting and resources within that setting that could be affected by the alternatives. In addition, the section presents an analysis of the direct and indirect impacts likely to result from the implementation of the alternatives.

General Setting

The two public lands parcels within the proposed allotment are located 4 miles northwest of Dubois, Idaho in Clark County. The two small BLM parcels total 45 acres and are unfenced from approximately 483 acres of adjacent private land. The general relief of the allotment is characterized by nearly level lava plains, terraces, and benchlands, with some rolling foothills. The average elevation in the allotment is 5,300 feet above sea level. Average annual precipitation on this site ranges from 8 to 12 inches. Approximately 50 percent comes during the plant growing season of April to July.

Resources Considered in the Impact Analysis:

The results of the site-specific assessments indicate that not all of the resources considered are present and/or would be impacted by the alternatives. Direct and indirect impacts on those resources that are present and impacted are discussed in the following narratives within Table 1.

| Table 1 – Proposed Hagenbarth Seeding Allotment - Resources Considered in the Impact Analysis | | | | |
|--|-------------|-----------------------|------------------|---|
| Resource | Not Present | Present, Not Impacted | Present Impacted | Rationale |
| Access | | X | | The alternatives would not result in changes in access to the project area. |
| Air Quality | | X | | The implementation alternatives would not result in the production of emission or particulate matter above incidental levels. |
| Areas of Critical Environmental Concern (ACEC's) | X | | | There are no ACEC's in the project area. |
| Cultural Resource | X | | | There are no cultural resources in the area. |
| Economic and Social Values | | | X | Impacts are disclosed under Economic and Social Values . |
| Environmental Justice | X | | | There are no minority or low income populations residing near the proposed project area. |
| Existing and Potential Land Uses | | X | | The alternatives would not affect the areas existing or potential land uses. |
| Fisheries | X | | | There are no fisheries in the project area. |
| Floodplains | X | | | There are no floodplains in the project area. |
| Forest Resources | X | | | There are no forest resources in the project area. |
| Invasive, Non-Native Species | | | X | Impacts are disclosed under Invasive, Non-Native Species . |
| Mineral Resources | | X | | The alternatives would have no impact on mineral resources within the area. |
| Migratory Birds | | | X | Impacts are disclosed under Migratory Birds . |
| Native American Religious Concerns | X | | | There are no Native American Religious Concerns within the project area. |
| Paleontological Resources | X | | | There are no known paleontological resources located in the project area. |
| Prime and Unique Farmlands | X | | | There are no prime or unique farmlands located within the allotment. |
| Recreational Use | | X | | None of the alternatives would impact the allotment's current and likely future use for the recreationists. |
| Soil Resources | | | X | Impacts are disclosed under Soil Resources . |
| Threatened, Endangered, and Sensitive Plants | X | | | There are no threatened or endangered plants in the project area. |
| Threatened, Endangered, and Sensitive Animals | | | X | Impacts are disclosed under Threatened, Endangered and Sensitive Animals . |
| Threatened, Endangered, and Sensitive Fish | X | | | There are no waters in the project area that would support threatened, endangered, or sensitive fish. |
| Tribal Treaty Rights and Interests | | X | | The alternatives would have no effect on the tribes' access to use the area to exercise their treaty rights and would have no known effects on resources they use for traditional purposes. |
| Vegetation | | | X | Impacts are disclosed under Vegetation . |
| Visual Resources | | X | | Visual resources would not be affected by the proposals. |
| Wastes, Hazardous and Solid | X | | | There are no solid or hazardous wastes in the project area and none would be created during the implementation of the alternatives. |
| Water Quality (Surface and Ground) | X | | | The proposal would not affect water quality in the area. |
| Wetland and Riparian Zones | X | | | There are no wetland or riparian zones in the project area. |
| Wild and Scenic Rivers | X | | | There are no wild and scenic rivers near the project area. |
| Wild Horse and Burro HMAs | X | | | There are no wild horse and burro HMAs in the region. |
| Wilderness | X | | | There are no wilderness resources within the allotment. |
| Wildlife Resources | | | X | Impacts are disclosed under Wildlife Resources . |

Vegetation

Affected Environment

The two small BLM parcels total 45 acres and are unfenced from approximately 483 acres of adjacent private land. The large majority of the private land has been farmed and is currently planted into crested wheatgrass (*Agropyron cristatum*). The north BLM parcel is dominated by three-tip sagebrush (*Artemisia tripartita*) and crested wheatgrass, while the south parcel consists of Wyoming big sagebrush (*Artemisia tridentata ssp.wyomingensis*) and three-tip sagebrush. The understory is a mix of introduced and native grass species including crested wheatgrass, bluebunch wheatgrass (*Pseudoroegneria spicata*), Sandberg's bluegrass (*Poa secunda*), and needle and thread grass (*Hesperostipa comata*).

Two field sites were assessed in 2012. The majority of the acreage in the two parcels was previously seeded to crested wheatgrass (*Agropyron cristatum*). The adjacent private lands have been recently farmed and are currently seeded into crested wheatgrass. All of the indicators for Biotic Integrity in the assessment area were rated as none to slight departure from site potential, except for Functional/Structural Groups. The lack of forb diversity in the seeding was the main factor why the Functional/Structural Groups Indicator was rated down. Below average annual moisture received in 2012 contributed to the lack of forb diversity in the seeding.

Two step-point cover transects were completed in 2012 during the field evaluations. Basal area on grass species ranged from 8% to 18%, with overall grass cover ranging from 24% to 26%. While no forb species were recorded along the transects, several forb species were observed on the parcels. Sagebrush cover on the parcels ranged from 18% to 20%. Trace amounts of cheatgrass were observed on both parcels.

Vegetative Cover Studies

Two step-point cover transects were conducted within the public parcels. The results of the cover surveys are summarized in Table 2. Step-point cover data was not previously collected in the seedings.

| | North Parcel | | South Parcel | |
|-------------------------------|----------------|----------------|----------------|----------------|
| | Ground Cover % | Foliar Cover % | Ground Cover % | Foliar Cover % |
| | | | | |
| Perennial grasses | | 26% | | 24% |
| Annual grasses | | Trace | | Trace |
| Forbs | | -- | | -- |
| Sagebrush | | 20% | | 18% |
| Other Shrubs | | -- | | -- |
| Total Vegetative Cover | | 44% | | 40% |

| | North Parcel | | South Parcel | |
|-------------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| | Ground Cover % | Foliar Cover % | Ground Cover % | Foliar Cover % |
| | | | | |
| Litter | 38% | | 32% | |
| Bare Ground | 18% | | 26% | |
| Gravel and Stone | -- | | -- | |
| Biological Crust | -- | | 2% | |

Environmental Consequences

Direct impacts to vegetation from livestock grazing result from removal of vegetation and/or damage by foraging animals and indirect impacts occur as plant community composition and structure are altered by grazing. Appropriate grazing or utilization levels can have the effect of stimulating plants, resulting in increased plant production if energy reserves are adequate. If the amount of grazing use or utilization is high for a given year, or especially for a sequence of years, the composition of the vegetative community may become modified as the more desirable, and more utilized species lose vigor and decrease in density throughout the site. The Evaluation for the allotment found that the seeded plant communities were meeting standards for rangeland health.

Rangeland livestock eat grass-dominated diets in all seasons of the year although forbs make up a higher percentage of sheep diets compared to cattle and horses. Sheep have been documented to consume greater amounts of shrubs in the winter when other, more nutritious, forage sources are not as readily available. Generally, livestock diet of sagebrush is less than 10% (Crawford et al. 2004, Ngugi et al. 1992). Poorly managed livestock grazing can negatively impact soil and site stability, biotic integrity and hydrological function in sagebrush-steppe rangelands. Properly managed livestock grazing can allow rangeland plants to build their root systems and increase nutrient storage, leading to increased survival and more robust plants, as well as increased forage production (McGinty et al. 2009). Native sagebrush grassland communities that have been altered by wildfire and/or non-native seedings can benefit from livestock grazing. Livestock grazing can facilitate sagebrush establishment and proliferation, particularly in non-native seedings (Frischknecht and Harris 1968, Angell 1997). Livestock can be an effective tool used to promote shrub establishment in rangelands impacted by wildfire. Densities of sagebrush and other shrubs can be increased when sagebrush communities are grazed in the spring and summer (Launchbaugh 2012).

Livestock grazing can act to reduce fuel accumulations, continuity, and height which can lessen the impacts of wildfire within sagebrush ecosystems. Livestock grazing focuses primarily on herbaceous grasses and forbs which directly affect the source of fuels for wildland fires (Launchbaugh 2012). Grazed sagebrush steppe (30-40% utilization of available forage) had greater perennial bunchgrass and forb cover, and decreased cheatgrass cover post-fire than areas that had not been grazed (Davies et al. 2009). Additionally, areas with long-term protection from

livestock grazing followed by fire resulted in substantial increases in cheatgrass and annual forbs, resulting in a shift from perennial vegetation dominance to annual vegetation dominance (Davies et al. 2009). Spring livestock grazing of cheatgrass can reduce and modify fuel loads and fuel bed depth in a way that can moderate flame lengths and rates of spread of wildfires, thus reducing the potential spread and extent of wildfires (Diamond et al. 2009).

Drought is a recurring, unpredictable, environmental feature. Drought has been defined by the Society of Range Management as: “(1) a prolonged chronic shortage of water, as compared to the norm, often associated with high temperatures and winds during spring, summer, and fall; and (2) a period without precipitation during which the soil water content is reduced to such an extent that plants suffer from lack of water.” Impacts associated with drought can be widespread. All plants and animal species depend on water. When drought occurs, available forage for consumption as well as habitat can be damaged. Potential environmental impacts include but are not limited to: loss or destruction of fish and wildlife habitat, lowering of water levels in reservoirs, lakes, ponds, loss of wetlands, and more wildfires. Some additional impacts include wind and water erosion of soils, reduced shoot and leaf growth, reduction in seed head development, induced senescence, and plant death.

Alternative A (Proposed Action)

The proposal to authorize livestock use on 45 acres of public land within the proposed Hagenbarth Seeding Allotment would directly affect vegetation. Direct effects would occur as livestock consume vegetation or trample it as they move around the area. Livestock use of vegetation in the area would not be a new occurrence. Prior to the current applicant livestock use occurred within the fenced private lands and vegetation on the unfenced 45 acres likely received use by livestock. There is no data to determine the extent of this prior use and any impacts that it may have had on vegetation in the area.

The current applicant has invested resources into a seeding on adjacent private lands and range improvement structures to make private lands suitable to a grazing system. Rather than fence out the public parcels from private lands, the landowner has made application to use the vegetation on the parcels. If the application was denied the private land owner would be forced to fence out the public lands or run the risk of a trespass situation if cattle drifted onto the public parcels if no fence was constructed.

Water improvements have also been constructed on adjacent private lands. Vegetation impacts associated with watering livestock would occur on private lands as a result. These areas tend to be devoid of vegetation or vegetation is heavily impacted and desirable species would be replaced by more grazing tolerant species, which are often less desirable. Livestock would have to trail from water sources to access vegetation on the public parcels. This may decrease the amount of use that vegetation receives. However, given the small area of the proposed allotment overall, distance from water would not be expected to limit access to vegetation on public lands. In addition, yearling cattle as proposed tend to wander more than a cow calf pair and would likely easily access vegetation on public lands.

The majority of the vegetative production available for livestock is produced in the private land seeding. The newer seeding on private lands is more productive than the older seeding on public lands, which is losing functionality as a seeding as shrubs continue to establish in the area. Cattle would be naturally attracted to more productive areas in the proposed allotment and the private seeding is easily accessed. As long as the seeding on private lands remains productive it would be expected to receive the majority of livestock use. Determining use patterns and levels on vegetation in the area is difficult without existing data. Further monitoring is needed to determine the effects of livestock grazing in this area. However; the proposed stocking rate for vegetation on public lands is consistent with surrounding areas and livestock grazing in other areas is known to be sustainable and would not be expected to differ in this area.

As part of Alternative A the proposed allotment would be established as a Custodial Use Allotment. Within the Medicine Lodge RMP custodial allotments are defined as an allotment with “only small acreages of public land or lands classified for transfer from Federal ownership. These allotments do not present management problems, regardless of condition. They present no significant potential for increasing production. Resource conflicts are either nonexistent or are outweighed by other considerations.” The proposed Hagenbarth Seeding Allotment fits this description. The Mandatory Terms and Conditions as outlined in Alternative A are proposed to provide for orderly administration of public lands while cooperating with the adjacent land owner. Cooperating with the land owner in this way would allow BLM to continue to monitor vegetation in the area and provide input into any future adjustments to vegetative management.

The limited data available for interpretation indicates that vegetation within the proposed Hagenbarth Seeding Allotment is healthy, productive and meeting the seeding standard. Alternative A would be expected to maintain this standard over the duration of the permit.

Alternative B (No Grazing)

Under Alternative B the USFO Field Manager would deny the application for livestock grazing on the 45 acres northwest of Dubois, Idaho. The current applicant has invested resources into a seeding on adjacent private lands and range improvement structures to make private lands suitable to a grazing system. Rather than fence out the public parcels from private lands, the landowner has made application to make use of the vegetation on the parcels. If the application was denied the private land owner would be forced to fence out the public lands or run the risk of a trespass situation if cattle drifted onto the public parcels if no fence was constructed. A recurrent trespass problem would likely be less beneficial to vegetation than Alternative A. In such a situation vegetation is often over utilized and misused. If the parcels were fenced out from private lands, vegetation would not be accessed by livestock and the potential for such use would be eliminated as long as the fences remained functional. This would allow vegetation in the area to complete growth and reproduction each year without disturbance by livestock. Increased biomass would be left on-site throughout the fenced out parcels, increasing the amount of residual cover and litter. Over time abundant residual biomass can decrease plant vigor if it is not removed by grazing or some other manner. In the long term this impact on vegetation is possible if the public parcels are fenced out.

The land owner has invested substantial resources into the private lands and will make use of them soon. The Mandatory Terms and Conditions as outlined in Alternative A are proposed to provide for orderly administration of public lands while cooperating with the adjacent land owner. Cooperating with the land owner in this way would allow BLM to continue to monitor vegetation in the area and provide input into any future adjustments to vegetative management. Alternative B would be beneficial for vegetation as long as the area is fenced out or the landowner somehow successfully keeps livestock off of public parcels without fencing. If the area is not fenced vegetation on the public lands may be impacted as much as Alternative A, especially in the case of a non-compliant private land owner. The applicant is a permittee in other allotments with a favorable record and there is no indication that a poor working relationship would transpire and negatively impact vegetation as a result of Alternative B. However, if private lands exchanged hands in the future there is the possibility of such a situation. Alternative A allows for more orderly administration of public lands into the future compared to Alternative B.

Livestock grazing can act to reduce fuel accumulations, continuity, and height which can lessen the impacts of wildfire within sagebrush ecosystems. Livestock grazing focuses primarily on herbaceous grasses and forbs which directly affect the source of fuels for wildland fires (Launchbaugh 2012). Grazed sagebrush steppe (30 to 40 percent utilization of available forage) had greater perennial bunchgrass and forb cover, and decreased cheatgrass cover post-fire than areas that had not been grazed (Davies et al. 2009). Additionally, areas with long-term protection from livestock grazing followed by fire resulted in substantial increases in cheatgrass and annual forbs, resulting in a shift from perennial vegetation dominance to annual vegetation dominance (Davies et al. 2009).

Invasive, Non-Native Species

Affected Environment

There are no noxious weed occurrences recorded for the public lands within the proposed Hagenbarth Seeding Allotment. Occurrences of leafy spurge (*Euphorbia esula*) have been documented several miles west of the project area. The USFO actively inventories, monitors, and treats occurrences of invasive non-native species within the field office area using the Standard Operating Procedures outlined in the Programmatic Environmental Assessment for Integrated Weed Management for the USFO and Pocatello Field Office (USDI-BLM 2009b).

Livestock grazing can act to reduce fuel accumulations, continuity, and height which can lessen the impacts of wildfire within sagebrush ecosystems. Livestock grazing focuses primarily on herbaceous grasses and forbs which directly affect the source of fuels for wildland fires (Launchbaugh 2012). Grazed sagebrush steppe (30-40% utilization of available forage) had greater perennial bunchgrass and forb cover, and decreased cheatgrass cover post-fire than areas that had not been grazed (Davies et al. 2009). Additionally, areas with long-term protection from livestock grazing followed by fire resulted in substantial increases in cheatgrass and annual forbs, resulting in a shift from perennial vegetation dominance to annual vegetation dominance (Davies et al. 2009). Spring livestock grazing of cheatgrass can reduce and modify fuel loads

and fuel bed depth in a way that can moderate flame lengths and rates of spread of wildfires, thus reducing the potential spread and extent of wildfires (Diamond et al. 2009).

Environmental Consequences

Alternative A (Proposed Action)

The potential impacts of invasive, non-native species found near the proposed Hagenbarth Seeding Allotment include degradation of native and non-native vegetative habitats. Seeds of undesirable species may be dispersed by wind, water, animals, or humans. The vegetative habitats were found to be meeting pertinent ISRH, which reduces the potential for invasion from undesirable species. Alternative A would authorize livestock management in an area where it was not previously authorized. The impacts of this action upon vegetation were analyzed in the **Vegetation** section. By maintaining and/or improving the ecological health of the current vegetative plant communities, the opportunity for expansion of invasive, non-native species would be reduced. Under Alternative A, all potential new infestations within the proposed allotment would continue to be treated following an integrated weed management approach (USDI-BLM 2009b).

Alternative B (No Grazing)

Livestock are one of several vectors for dispersal of invasive, non-native species, and under Alternative B no livestock grazing would be authorized in the proposed area. Under Alternative B, the potential establishment or expansion of invasive, non-native species would be less than Alternative A due to the removal of this vector. Cattle would likely continue to be present in areas directly adjacent to the public parcels. Under Alternative B, all new and existing infestations within the project area would continue to be treated following an integrated weed management approach (USDI-BLM 2009b).

Soil Resources

Affected Environment

The soils across the proposed Hagenbarth Seeding Allotment range from coarse to fine loamy soils. Three soil series can be found in the allotment. The Aecet soil series consist of moderately deep, well drained soils formed in reworked wind deposits. The Bondfarm soil series consist of shallow, well drained soils also formed in wind material over basalt. The third soil series found in the proposed allotment is the Atomic series. This soil series consists of deep, well drained soils in alluvium from loess.

Eleven of the twelve indicators for soil stability were rated as none to slight departure. The Pedestals and/or Terracettes indicator was rated in the slight to moderate category because the interdisciplinary team observed evidence of pedestalling. The pedestalling in the southern parcel

appears to be due to the fact that the area holds surface water in the spring. The soil surfaces in the proposed Hagenbarth Seeding Allotment have sufficient vegetative cover to protect against wind and water erosion.

There are no established roads within the proposed allotment. Water sources exist on private lands and the only fencing is located on the proposed allotment perimeter. Most soil impacts will occur on private lands and less than 1% of the impacted area would occur on public lands in the area.

Environmental Consequences

The potential impacts to soils from livestock grazing include soil compaction and a reduction in the amount and distribution of ground cover resulting in accelerating erosion as evidenced by rills, pedestals, wind-scoured blowouts and/or deposition areas and flow patterns. Soil compaction by heavy objects, including trailing by livestock, has the potential to penetrate and compact soil material to depths of 15 to 20 inches, depending upon soil composition, particle size, and moisture content. The majority of the soil units have limited potential for compaction due to gravelly nature of the soils. Generally, the soils in the allotments will have increased moisture levels in the spring compared with the summer or fall. The soil from the surface to a depth of four to six inches is typically released from compaction by frost action. Deeper soil compaction that is not affected by frost action may remain in the soil for years. Deep soil compaction restricts root growth reducing plant vigor and community composition and reduces soil productivity. Soil compaction resulting from intensive livestock use, such as along trails and next to water sites, is estimated to occur on less than one percent of the allotment area.

Another potential impact of livestock grazing on soils is the disturbance of biological soil crusts that influence nutrient cycling and stabilize surface soils (Belnap and Gillette 1998). Livestock grazing acts as a compressional disturbance, which may compress, shear or bury crusts. Trampling tends to only compress the surface and generally does not result in direct removal of crusts from the site. Finer textured soils are more susceptible to compressional disturbance. Crustal organisms are more susceptible to disturbance during dry periods than when disturbed in wetter times. If soils are excessively wet crusts may be buried by hoof action. Crusts on all soil types are least vulnerable to disturbance when soils are frozen or snow covered. Excessive livestock use can be detrimental to soil crusts and species richness. Excessive livestock grazing can result in soil compaction, which influences soil water and nutrient-holding capacity and can lead to changes in soil crust community composition. Disturbance that removes or kills crustal organisms (such as wildfire) results in greater impact and slower recovery than disturbance that leaves crusts in place.

Alternative A (Proposed Action)

Under Alternative A, the level of soil disturbance would increase above current levels. Livestock grazing would be permitted in an area where it has not occurred in recent years (2-3 years). Livestock use likely occurred with previous landowners in the area previously, but the extent to which this occurred is difficult to determine. Water sources are located on private lands and the impacts associated with concentrated use at water sites would not occur on BLM. The

primary soil disturbance will occur as livestock trail through and consume vegetation. Overall the amount of soils impacted by livestock activity would be less than one percent of the allotment area. Under Alternative A, soil conditions on public lands would continue to support water infiltration and vegetative cover would be sufficient to protect against wind and water erosion.

Alternative B (No Grazing)

Under Alternative B, the impacts to soil resources would be less than under Alternative A. Under Alternative B, no livestock would be authorized on public lands within the proposed Hagenbarth Seeding Allotment. The limited soil compaction related to livestock use in the portion of the soil profile which is typically released annually through frost action, would not be subject to repeated compaction. Areas where soil is exposed due to removal of vegetative cover by grazing livestock would begin to provide cover to soils. Overall, Alternative B would continue to achieve soil and watershed standards within the proposed Hagenbarth Allotment.

Migratory Birds

Affected Environment

The proposed Hagenbarth Seeding Allotment consists of 45 acres of unfenced BLM managed land surrounded by approximately 483 acres of private land. A large majority of the surrounding private land is currently seeded with crested wheatgrass, and the public land was historically seeded with crested wheatgrass. The seeding on the public land is losing its functionality as a seeding and native shrubs are continually encroaching. Although there is a sagebrush component present on the BLM land, the understory is comprised of a mixture of introduced (crested wheatgrass) and native grasses (bluebunch wheatgrass, needle and thread grass, etc.). Studies have shown that non-native grasslands provide poor habitat for native sagebrush steppe birds such as sage thrasher (Entwistle et al. 2000). In addition, crested wheatgrass seedings result in fewer nesting bird species and a lower density of birds (Reynolds and Trost 1980). Ultimately, an increase in abundance and diversity of native shrubs and forbs would result in an increase in migratory bird species richness and diversity. Migratory song birds likely found within these parcels may include brown-headed cowbird, vesper sparrow, and savannah sparrow. Raptors may also use these areas when foraging for prey, but little to no nesting substrate is available.

The limited native habitat may support species such as sage thrasher, green-tailed towhee, western meadowlark, loggerhead shrike, sage sparrow, and Brewer's sparrow. Inventory and monitoring data are limited or absent for many migratory species, including sagebrush obligates within the allotment. Little is known about their population status or trends. Sagebrush-steppe birds, such as the Brewer's sparrow and sage sparrow, that require sagebrush as nest sites benefit from mostly intact mature sagebrush stands, which are limited in this allotment. Migratory raptors that may use the allotment for foraging include northern harrier, prairie falcon, rough-legged hawk, ferruginous hawk, Swainson's hawk, and red-tailed hawk. However, there is likely little raptor nesting occurring within the allotment due to limited nesting substrate.

Environmental Consequences

Migratory birds generally do not respond to the presence of grazing livestock, but to the impacts on vegetation as a result of grazing. The principal means by which livestock grazing impacts migratory bird populations is by altering habitat structure and food availability. Livestock have the potential to directly impact migratory bird species by reducing, at least temporarily, required understory grasses and forbs used for foraging, nesting and cover from predators. Livestock grazing impacts include compaction of soil by hoof action, removal of plant materials, and indirect reduction of water infiltration, all of which can result in decreased vegetation density (Saab et al. 1995). Productive habitats are important for migratory birds to hide from predators, forage, mate and nest; especially during spring. However, songbirds may respond differently to livestock grazing impacts, primarily due to their forage and nesting requirements. For example, sage sparrow appear to respond positively to grazing; while vesper sparrow, Savannah sparrow and western meadowlark appear to respond negatively; and mourning dove, loggerhead shrike, lark sparrow, sage thrasher and Brewer's blackbird may be unresponsive or show mixed responses to grazing impacts (Bock et al. 1993).

Similar to songbirds, migratory raptors also show a range of responses to grazing with some species (i.e., northern harrier) requiring increased ground cover and other species (i.e., burrowing owl) responding positively to reduced ground cover or bare ground (Saab et al. 1995).

Alternative A (Proposed Action)

Alternative A authorizes grazing on 45 acres of BLM managed land that have not previously been authorized for grazing. Furthermore, the proposal is to allow for eight yearling cattle AUM's with an established season of use from May 1 to December 31. This proposal to authorize livestock grazing would potentially have both direct and indirect impacts on migratory bird species within the proposed allotment. Direct effects would occur from livestock reducing the amount of herbaceous understory vegetation (i.e. grasses and forbs), at least temporarily, which is required by migratory bird species for foraging, cover, and nesting. Direct effects may also include compaction of the soil and removal of plant material, which indirectly impacts the amount of water infiltration and has the potential to alter the habitat structure and food availability for migratory bird species. However, livestock use of vegetation in the area would not be a new occurrence. Prior to the current proposal, livestock use occurred within the fenced private lands and it is likely that the unfenced 45 acres also received use by livestock. There is no data to determine the extent of this prior use and any impacts that it may have had on migratory bird habitat in the area.

A portion of the proposed livestock grazing period would occur during late spring and early summer, which are important nesting and brood-rearing seasons for migratory raptors and songbirds. Some birds may abandon or lose their nests due to livestock presence or trampling, although the potential is limited. Most migratory birds leave the area in the fall and are not directly impacted by fall grazing. The fall livestock grazing use indirectly impacts migratory birds by reducing the amount of residual herbaceous vegetation available as forage or cover for migratory birds and their prey bases during the following spring.

Livestock grazing may impact prairie falcons and ferruginous hawks indirectly by changing the vegetative composition in ways that influence prey species. Grazing reduces vegetative cover, at least temporarily, which increases exposure of prey species resulting in increased predation. Periodic rest or deferment of grazing allows small rodent populations to recover and produce increased numbers when compared to continuous grazing, thereby increasing the prey base (Douglass and Frisina 1993).

Livestock use of crested wheatgrass seedings may reduce decadent plants, in turn increasing distance between individual grass plants and providing an opportunity for the reestablishment of some sagebrush and native herbaceous species. Spring and early summer grazing by cattle can be a tool to increase sagebrush cover where it is desired in crested wheatgrass stands (Huber and Goodrich 1999). Pellant and Lysne (2005) also state that livestock use at the appropriate time and intensity in crested wheatgrass seeding aids in increasing sagebrush cover. Ultimately, an increase of native forbs and shrubs in the crested wheatgrass seedings would likely result in an increase in bird species richness and diversity.

The proposed allotment was evaluated in 2012 and the area was found to be meeting rangeland health standards for seedings. There is little trend information on migratory birds available for this area, however, as the proposed allotment is meeting rangeland health standards it is expected that habitat requirements (e.g., cover, food, space) of migratory birds are also being met. Because the vegetation within the parcels is meeting rangeland health standards with unauthorized grazing likely occurring in recent years, it is expected that it would continue to meet standards under Alternative A. Further monitoring is needed to determine the effects of livestock grazing on migratory birds and their habitat in this area.

Alternative B (No Grazing)

Under Alternative B, no livestock grazing would be authorized on the 45 acres of BLM managed land northwest of Dubois, Idaho. Impacts to migratory birds from no grazing would vary by species as discussed under the Environmental Consequences. In general, understory cover (e.g., grasses and forbs) would increase in size and vigor and provide habitat critical to migratory bird life cycles. The increase in understory vegetation, and lack of disturbance and competition, would allow the parcels to continue to meet rangeland health standards and provide suitable habitat for migratory birds under Alternative B. There would be no displacement or disturbance of migratory birds during crucial breeding, nesting and brood-rearing seasons. With no late-season livestock grazing occurring there would be no reduction of the amount of residual herbaceous vegetation available as forage or cover for migratory birds and their prey bases during the following spring.

No authorized grazing in this area may also potentially have negative impacts for migratory birds and their habitats. If grazing is not authorized in this area, the private landowner will be forced to either fence out the BLM parcels or run the risk of recurrent trespass. When areas are continually trespassed the vegetation is often over utilized and misused. This would have a more detrimental impact on migratory bird habitat in the area than properly managed livestock use. Direct impacts from fencing would be increased perches for hunting, singing and territorial displays which may increase fitness and mating potential, but it may also increase their visibility

to potential predators. Further impacts would be potential fence strikes resulting in injury or possible mortality of individual birds, more likely larger birds such as hawks and owls. Crested wheatgrass seedings would potentially grow decadent and thick with little opportunity for establishment of native forbs, grasses, and shrubs to occur, which would retain their poor quality for migratory birds. Some species like the ferruginous hawk and prairie falcon may be negatively impacted by a reduction in prey availability due to increased vegetative cover resulting from livestock removal (Douglass and Frisina 1993). Some migratory birds such as the sage sparrow and Brewer's sparrow prefer patchy habitat that is commonly found with livestock grazing.

As residual herbaceous and litter cover increases, the continuity of fine fuels would increase, thereby increasing the risk of a larger and more severe wildfire than would likely occur if the proposed allotment was grazed as described in Alternative A. Wildfires would reduce the sagebrush cover in the area which could be detrimental to migratory bird species, specifically sagebrush obligate species.

Impacts to the plant communities that support migratory birds in the proposed Hagenbarth Seeding Allotment would be slightly reduced under Alternative B compared to Alternative A, due to reduced disturbance and increased cover and forage.

Threatened, Endangered, and Sensitive Animals

Affected Environment

All data known to the Upper Snake Field Office, including data from U.S. Fish and Wildlife Service (USFWS), Idaho Department of Fish and Game (IDFG), and the Idaho Natural Heritage Program has been considered to identify any plant or animal species currently listed under the Endangered Species Act (ESA). There are no threatened or endangered species within the allotment. There is potential for one candidate species, greater sage-grouse, within the proposed Hagenbarth Seeding Allotment.

Table 3 lists special status species that have been identified as occurring or potentially occurring within the Allotment. BLM includes the following as special status species:

- (1) Species officially listed or proposed for listing as threatened or endangered under the ESA or candidates for listing as threatened or endangered under the ESA.
- (2) Species listed by a State in a category such as threatened or endangered implying potential endangerment or extinction.
- (3) Species designated by the BLM State Director as sensitive.

The probability of species occurring and rationale for occurrence are listed. Species not occupying seasonal ranges or not expected to occur within the proposed Hagenbarth Seeding Allotment are not discussed in the assessment.

Table 3 - Special Status Species and Occurrence within The Hagenbarth Seeding

| Species | Status ^a | Occurrence | Rationale |
|--|---------------------|------------|--|
| Greater Sage-Grouse (<i>Centrocercus urophasianus</i>) | C | Present | Preliminary Priority and General Habitat |
| Prairie Falcon (<i>Falco mexicanus</i>) | S | Potential | Forages throughout the allotment. Nest sites not identified. |
| Ferruginous Hawk (<i>Buteo regalis</i>) | S | Potential | Forages throughout the allotment. Nest sites not identified. |
| Brewer's Sparrow (<i>Spizella breweri</i>) | S | Potential | Potential breeding habitat present |
| Sage Sparrow (<i>Amphispiza belli</i>) | S | Potential | Potential breeding habitat present |
| Loggerhead Shrike (<i>Lanius ludovicianus</i>) | S | Potential | Potential breeding habitat present |
| Piute Ground Squirrel (<i>Spermophilus mollis artemisiae</i>) | S | Potential | Potential habitat present |
| Pygmy Rabbit (<i>Brachylagus idahoensis</i>) | S | Potential | Potential habitat present |

Status Codes: C=Federal Candidate Species, S=BLM Sensitive Species, T=Federal Threatened Species

On March 23, 2010 the US Fish and Wildlife Service determined that listing the Greater sage-grouse was warranted, but precluded by higher listing priorities (USFWS 2010). Currently considered a Candidate species by the USFWS, greater sage-grouse are strongly correlated with the distribution of sagebrush habitats as they depend on a variety of shrub steppe habitats throughout their life cycle, and are considered obligate users of several species of sagebrush (USFWS 2010). They exhibit strong site fidelity to seasonal habitats (USFWS 2010). Habitat for sage-grouse within the BLM is currently managed under Instruction Memorandum No. 2012-043 - Greater Sage-Grouse Interim Management Policies and Procedures. Local management actions also follow the Upper Snake Local Working Group's Plan for Increasing Sage-Grouse Populations (USLWG 2009) and the Conservation Plan for Greater Sage-Grouse in Idaho (ISGAC 2006).

Sage-grouse require large tracts of relatively continuous sagebrush cover throughout the entire year (Pehrson and Sowell 2011). In general, the Preliminary Priority Habitat (PPH) designation

is based on sage-grouse populations as identified in *Sage-grouse Priority and General Areas in Idaho* (BLM 2011, and Makela and Major 2011). In particular, PPH is based on combined high male lek attendance, high lek density and high lek connectivity. Approximately 27 acres of the lower parcel is identified as PPH, and the other eight acres is identified as Priority General Habitat (PGH). Impacts in these areas result in impacts to sage-grouse population centers and movement corridors. In addition, the lower parcel of the proposed Hagenbarth Seeding Allotment (approximately 35 acres) is also identified as key sage-grouse habitat (Makela and Major 2011) which is described as large-scale, intact sagebrush steppe areas with the potential for small inclusions of perennial grasslands, either native or introduced, or other habitats (e.g., mountain mahogany) to be present.

In Idaho, based on long term averages, greater sage-grouse shows a declining population trend (Connelly et al. 2004). Although populations in the Upper Snake Region have shown increases in the past 10 years they have not reached levels attained in the late 1960s or early 1970s (Connelly et al. 2004). There are no sage grouse leks within the allotment, and seventeen leks within five miles of the allotment. Four of these leks are active, one is inactive and twelve are of undetermined status due to a lack of recent surveys. Analysis of occupied lek data gathered by IDFG, USFS, and BLM within five miles of the allotment show sage-grouse populations fluctuate annually and are relatively static with the ten year average. The Table Butte area, which is just south and west of this proposed allotment, provides habitat for sage-grouse during critical portions of the year including lekking, brood-rearing, and winter use. Between the dates 1997-2002, a sage-grouse telemetry project was conducted on the table butte area. The sample size included 37 birds, which were collared and movement patterns recorded. While some use by sage-grouse is expected, the study showed no use by collared birds within the proposed allotment. Proximity to Interstate-15 may be one of the main factors for the lack of use.

West Nile virus has been identified as a threat to sage grouse populations (USFWS, 2010). Incidences of West Nile virus peaked in eastern Idaho in 2007. There has been a very low incidence of West Nile Virus in the counties within or adjacent to the Upper Snake Field Office area in the last four years (USDI-USGS, 2013). West Nile virus is spread primarily through contact with infected mosquitoes. Livestock water sources (i.e. trough locations) may increase the distribution and abundance of mosquitoes that contribute to the spread of the West Nile virus if they have attributes beneficial to mosquitoes. These attributes include those that create shallow water depths, shade during the heat of the day, and vegetation and debris cover that provides shelter from predators of mosquitoes (Zau et al. 2006). Livestock watering facilities can become breeding habitat for mosquitoes if water is left stagnant long enough to become warm, and grow algae or other vegetation. While in use, livestock watering troughs do not hold standing water. Instead, there is a regulated flow of cold water from a well or storage tank, which livestock drink from throughout the day. The potential for standing water at livestock troughs occurs once the livestock leave, and fresh water is not being added to the trough. There are no existing troughs on public lands within the proposed allotment.

The proposed Hagenbarth Seeding Allotment is winter range habitat for sage-grouse. Two sage-grouse habitat assessments were conducted within the allotment in 2012, using the protocol established by Stiver et al. (2010) for assessing sage-grouse habitat. Winter habitat indicators are as follows: (1) sagebrush canopy cover, and (2) sagebrush height. According to Western

Regional Climate Center (WRCC 2012) the highest snow depth in the Dubois Experiment Station, approximately 2 miles from allotment, occurs in the month of February. These snow depths were recorded from 1948 to 2005 and yield an average of 13 inches (33 cm). This data was used to determine winter habitat suitability based on sagebrush height above snowpack. Table 4 includes the habitat assessment results for the proposed Hagenbarth Seeding Allotment, and Table 5 includes the habitat assessment overall rankings per pasture.

Table 4 - Sage-Grouse Wintering Habitat Assessment

| Habitat Indicators | Suitable | Marginal | Unsuitable |
|---|----------|----------|------------|
| Winter Habitat Indicators | | | |
| Sagebrush Canopy Cover | 1,2 | | |
| Sagebrush Height (availability during winter) | 2 | | 1 |

1-Seeding Pasture Site #1, 2-Seeding Pasture Site #2

Table 5 - Sage-Grouse Habitat Assessment Rankings by Study Site

| Pasture | Winter Habitat |
|-------------------------|----------------|
| Seeding Pasture Site #1 | Unsuitable |
| Seeding Pasture Site #2 | Suitable |

The proposed Hagenbarth Seeding Allotment consists of approximately 45 acres of BLM managed land. Approximately 27 of these acres are identified as PPH, and an additional 8 acres are identified as PGH. These areas constitute the lower parcel of the proposed allotment. This parcel was rated suitable for all indicators of winter habitat for sage-grouse. The parcel has crested wheatgrass, but the majority of the native components of grasses, forbs, and shrubs are still present in good numbers. The upper parcel was rated unsuitable for sage-grouse winter habitat because the area is dominated by crested wheatgrass and three-tip sagebrush, which generally does not grow at heights suitable to provide sage-grouse with winter forage above the average annual snowpack. While the upper parcel is not suitable for sage-grouse and outside of both priority and general habitat, the larger south parcel provides suitable vegetation conditions for use by sage-grouse as winter habitat. The mixed plant community is being maintained to ensure the proper functioning of ecological processes and continued productivity and diversity of plant species.

Prairie falcons inhabit dry environments of western North America where cliffs or bluffs punctuate open plains and shrub-steppe deserts (Steenhof 1998). Prairie falcon use of the area is likely flying, perching, foraging and migration.

Ferruginous hawks are large grassland raptors that breed in the shrub-steppe and semi-arid regions of western North America (Olendorff 1993). Their density and productivity are closely associated with cycles of prey abundance with mammals being the primary prey source during breeding season although birds, amphibians, reptiles, and insects are also taken (Dechant et al. 1998, Woffinden and Murphy 1989). Habitat degradation due to agriculture and overgrazing has been reported as a threat to the species' survival in North America (Leary et al. 1998). Natural features in the area provide potential foraging habitat for this species, but no known nesting territories have been documented within the proposed allotment.

Brewer's sparrows breed in shrub steppe, transitions between shrub steppe and shortgrass prairie, and semi-desert shrub steppe habitats (Walker 2004). Brewer's sparrows are gleaners, consuming small insects, gleaned from foliage and bark of shrubs or dwarf trees and seed taken from the ground (Rotenberry et al. 1999). Reduced occupancy, nest success and season-long productivity in fragmented shrub steppe habitats suggest smaller patches of habitat are of marginal suitability (Walker 2004). Brewer's sparrows are known to occur in the area but have not been documented within the proposed allotment.

Sage sparrows are dependent on stands of sagebrush for nest sites, food, and cover (Vander Haegen 2003). They prefer semi-open habitats with evenly spaced shrubs 3-6 feet high (Martin and Carlson 1998) and are found more frequently in extensive areas of continuous sage (Vander Haegen 2003). Sage sparrows are ground foragers that eat insects, spiders, seeds, small fruits and succulent vegetation (Martin and Carlson 1998). Sage sparrows are known to occur in the area but have not been documented within the proposed allotment.

Loggerhead shrikes are passerines that prey upon reptiles, mammals, other birds and a wide array of invertebrates (Woods and Cade 1996). They appear to be widely distributed throughout southern Idaho and are often locally abundant where they occur (Woods and Cade 1996). Loggerhead shrikes are known to use a variety of habitats including prairies, pastures, sagebrush desert, fencerows or shelterbelts of agricultural fields, orchards, riparian areas, open woodlands, farmsteads, suburban areas, mowed road rights-of way, abandoned railroad rights-of-way, cemeteries, golf courses, and reclaimed strip mines (Dechant, et al. 2002). Habitat must include suitable nesting shrubs or small trees and hunting perches interspersed over a grassy or herbaceous ground cover with some bare areas, where shrikes find most of their prey (Cade and Woods 1997). There is little information available on loggerhead shrikes within the proposed allotment; however, suitable habitat does exist.

Piute ground squirrels are among the smallest members of the genus and one of the most desert-adapted (Rickart 1988). They are obligate hibernators emerging from estivation in the spring, remaining active for approximately 4 months and then returning to estivation the remainder of the year (Alcorn 1940). Densities of ground squirrel populations are related to local food supplies (Yensen and Sherman 2003) with densities increasing with rich food supplies (Rickart 1988). Ground squirrels eat a variety of grasses and forbs early in the active season, but consume flower and grass seeds when available (Yensen and Sherman 2003). The area may provide potential habitat for the Piute ground squirrel, however none have been documented within the proposed allotment.

Pygmy rabbits are sagebrush obligate species inhabiting dense, tall stands of big sagebrush growing on deep, friable soils that allow them to dig extensive burrow systems (Janson 2002). Landscape features include alluvial fans and hillsides, swales within rolling topography, floodplains, brushy draws, riparian channels, edges of rock and lava outcroppings, and mima mounds (IDFG 2005). The area may provide potential habitat for the pygmy rabbit, however none have been documented within the proposed allotment.

Environmental Consequences

Direct impacts of livestock grazing on habitat used by special status species include nest or burrow trampling and the removal of vegetation that could otherwise be used for food or cover. Indirect impacts on habitat used by wildlife can occur if livestock grazing alters the vegetation composition, which can be beneficial or adverse depending upon the specific special status species and results of the impact. In general, native vegetation communities in late-seral to potential natural community (PNC) condition provide habitat conditions suitable to the largest number of native special status species.

Livestock grazing can have direct and indirect impacts on sage-grouse during nesting. Direct impacts may include flushing or disturbing hens incubating eggs or trampling of nests or grouse, but these impacts are considered rare (Beever and Aldridge 2011). Indirect impacts include the removal of vegetation used for scent, visual and physical barriers to potential predators by nesting sage-grouse (DeLong et al. 1993). Poorly managed livestock grazing can alter plant community composition and distribution of desirable vegetation species and facilitate invasive species establishment. Livestock management practices that provide for the sustainability of perennial grasses and forbs generally maintain or minimally impact sage-grouse habitat (ISGAC 2006).

Grass height and cover are considered important factors for sage-grouse nest sites (Connelly et al. 2000). Taller herbaceous vegetation surrounding a nest likely influences the success of nesting sage-grouse (Wik 2002, DeLong et al. 1993). Livestock grazing can remove herbaceous vegetation used for cover by nesting sage-grouse. In sagebrush habitats cattle graze herbaceous vegetation in shrub interspaces, and begin foraging on vegetation beneath shrubs as interspace plants are depleted. Under light to moderate utilization levels, cattle use of sub-canopy vegetation has been documented as negligible (France et al. 2008). The degree of impact that livestock grazing has on sage-grouse nesting habitat is dependent on timing, intensity of use, vegetation composition, and other factors (ISGAC 2006). Nest success is not considered to be a widespread problem in Idaho with an average success rate of 49% (Connelly et al. 2004).

Alternative A (Proposed Action)

Alternative A would authorize grazing on 45 acres of BLM managed land that have not previously been authorized for grazing. Furthermore, the proposal is to allow for eight yearling cattle AUM's with an established season of use from May 1 to December 31. This proposal to authorize livestock grazing would potentially have both direct and indirect impacts on special status species, including sage-grouse, within the proposed allotment. Direct impacts would include the potential of livestock trampling nests or flushing incubating hens from the nest.

Indirect impacts would occur as a result of livestock removing vegetation used by sage-grouse for nesting, cover, and foraging. The timing of the proposed grazing season may also impact sage-grouse, and other special status species. A portion of the proposed grazing season occurs during late spring and early summer, which are important nesting and brood-rearing seasons. Livestock grazing during this time may potentially impact sage-grouse through the reduction of understory grass and forb cover, which may result in reduced nesting success or increased nest and chick predation. Fall grazing may indirectly impact sage-grouse by reducing the amount of residual herbaceous vegetation available as forage or cover during the following spring.

There is the potential for both positive and negative impacts to pygmy rabbit and Piute ground squirrel habitat. Livestock use may result in increased sagebrush cover or density that would provide additional forage and cover for pygmy rabbits. However, this may also result in decreased grass and forb cover that are important components of both species' diets (Thines et al. 2004). Additionally, grazing movements by cattle may result in trampling or filling in of entries into these species' burrows.

Livestock use of vegetation in the proposed allotment would not be a new occurrence. Prior to the current proposal, livestock use occurred within the fenced private lands and it is likely that the unfenced 45 acres also received use by livestock. There is no data to determine the extent of this prior use and any impacts that it may have had on special status species and their habitat in the area. Because the vegetation within the parcels is meeting rangeland health Standards 5 and 8 with unauthorized grazing likely occurring, it is expected that it would continue to meet standards under Alternative A.

As mentioned in the **Migratory Bird** section of this analysis, livestock grazing at the appropriate time and intensity in crested wheatgrass seedings can aid in increasing sagebrush cover. An increase in sagebrush cover would greatly benefit sage-grouse habitat in this area. Although the southern parcel was rated as suitable, the northern parcel was rated as unsuitable for winter habitat for sage-grouse, with sagebrush height and cover being the limiting factors. Reducing the amount of the crested wheatgrass cover through livestock grazing may allow for accelerated sagebrush growth and added recruitment, moving this area closer towards meeting suitable criteria for winter habitat for sage-grouse.

Impacts to other special status species such as prairie falcon, ferruginous hawk, Brewer's sparrow, sage sparrow, and loggerhead shrike are discussed under the **Migratory Bird** section of this analysis. Impacts to special status species from livestock grazing on crested wheatgrass seedings are similar to those discussed under the **Migratory Bird** section of this analysis.

Alternative B (No Grazing)

Impacts to special status bird species from no grazing would vary by species as discussed under **Migratory Birds**. The potential impacts on vegetation from livestock grazing would be removed. In general, understory cover (e.g., grasses and forbs) would increase in size and vigor providing increased cover and forage for special status species and/or their prey base. The increase in understory vegetation, and lack of disturbance and competition, would allow the parcels to continue to meet rangeland health standards and provide suitable habitat for special

status species under Alternative B. There would be no displacement or disturbance of sage-grouse during crucial breeding, nesting and brood-rearing seasons. With no late-season livestock grazing occurring there would be no reduction of the amount of residual herbaceous vegetation available as forage or cover for sage-grouse during the following spring. Impacts to burrowing species, such as pygmy rabbit and Piute ground squirrel, would consist of a lack of disturbance or potentially crushing or collapsing of burrows. Crested wheatgrass seedings would potentially grow decadent and thick with little opportunity for establishment of native forbs, grasses, and shrubs to occur, which would retain their poor quality for special status species.

Similar to migratory birds, no authorized grazing may potentially have negative impacts for special status species and their habitats. If grazing is not authorized in this area, the private landowner will be forced to either fence out the BLM parcels or run the risk of recurrent trespass. When areas are continually trespassed the vegetation is often over utilized and misused. This would have a more detrimental impact on special status species habitat in the area than properly managed livestock use. Potential impacts to greater sage-grouse from installation of a new fence would include disturbance and displacement during installation phase, fence posts and wires that may provide perches for predators, and the fence may pose a collision hazard to sage-grouse (Stevens et al. 2009, Connelly et al. 2004). According to Connelly, placement of new fences and structures should be avoided within 1 km (0.6 mi) from occupied leks (Connelly et al, 2000), and the BLM IM-2012-043 suggests evaluating any new fences within 1.25 miles of leks that have been active within the past 5 years. Although the nearest occupied lek is greater than 1.25 miles from the proposed allotment, there are multiple occupied leks within 1.7 miles and the potential impacts from installing a new fence are still present.

Impacts to special status species from an increase in fuel load would be similar to those discussed under **Migratory Birds**.

Impacts to the plant communities that support special status species in the proposed Hagenbarth Seeding Allotment would be slightly reduced under Alternative B compared to Alternative A, due to reduced disturbance and increased cover and forage. However, impacts from additional infrastructure (i.e. new fence), if installed under Alternative B, would overall be more detrimental to greater sage-grouse than impacts from Alternative A.

Wildlife Resources

Affected Environment

Public lands in the proposed Hagenbarth Seeding Allotment provide habitat, although limited, to a wide range of native wildlife species which seasonally occupy a variety of habitat types. The proposed allotment lies in the southern portion of IDFG Game Management Unit (GMU) 59. This area is crucial yearlong habitat for pronghorn. It is also on the southern edge of crucial winter habitat for elk, and crucial yearlong habitat for mule deer and moose. In this area elk numbers are relatively stable (IDFG 2010a), but moose numbers fluctuate annually with a general observation of declining numbers (IDFG 2009a). Trend counts of mule deer populations in the mid-2000s were at or slightly higher than the highs observed in the 1960s (IDFG 2010b), and pronghorn herds are of relatively high density (IDFG 2009b).

Although crested wheatgrass is present in the lower parcel, the native component of grasses, forbs, and shrubs are also present. The upper parcel is dominated by crested wheatgrass and three-tip sagebrush. Crested wheatgrass seedings provide green forage in spring and fall and may be important to wild ungulates when other preferred food sources are unavailable, such as following wildfires. However, others have found that mule deer prefer native grasses to crested wheatgrass and pronghorn use of crested wheatgrass is only minimal in the intermountain west (Zlatnik 1999). Crested wheatgrass seedings support fewer nesting bird species and a lower density of birds, mammals, and reptiles compared to areas dominated by sagebrush (Reynolds and Trost 1980). Significantly more small mammals are captured in native sagebrush habitat compared to crested wheatgrass seedings, although crested wheatgrass is an important food item for some small mammal species (Koehler and Anderson 1991).

Resident bird species found in the proposed allotment include horned lark, American kestrel, common raven, and black-billed magpie. Small mammals such as voles, ground squirrels, coyotes, and badgers as well as reptiles such as short-horned lizards and western fence lizards are also likely to use the proposed allotment.

Environmental Consequences

The principal means by which livestock grazing impacts wildlife species is by altering habitat structure and food availability. Grazing reduces the height and ground cover of grasses, at least temporarily, reducing cover and forage sought by some wildlife species. Vegetation attributes may change in response to livestock grazing; these attributes include plant community composition, distribution, production and plant species diversity (USDI-BLM 2006) which in turn, can affect the health and viability of native wildlife species. The presence of livestock could also potentially impact wildlife through livestock-wildlife interactions that may result in wildlife displacement or disease transmission.

Alternative A (Proposed Action)

Alternative A would authorize grazing on 45 acres of BLM managed land that have not previously been authorized for grazing. Furthermore, the proposal is to allow for eight yearling cattle AUM's with an established season of use from May 1 to December 31. This proposal to authorize livestock grazing would potentially have both direct and indirect impacts on various wildlife species within the proposed allotment. Livestock have the potential to indirectly impact wildlife during the growing season by reducing required understory grasses and forbs used for foraging and cover from predators. Fall cattle grazing may affect wildlife by removing vegetation which species such as pronghorn, elk, and mule deer utilize during the critical winter season. Late-season grazing can also indirectly impact wildlife by reducing the amount of residual herbaceous vegetation available as forage or cover for various wildlife species and/or their prey bases during the following spring. With the authorized grazing season extending to December 31, this may potentially allow for livestock to be present in the allotment at the same time as wintering big game. Wildlife species sensitive to the presence of livestock and associated human activity may be temporarily displaced.

As mentioned above in the **Migratory Bird** section of this analysis, livestock grazing in crested wheatgrass seedings may be beneficial to various wildlife species. Managed livestock use may reduce decadent plants, in turn increasing distance between individual grass plants and providing an opportunity for the reestablishment of some sagebrush and native forbs. Ultimately, an increase of native forbs and shrubs in the crested wheatgrass seedings would likely result in an increase in wildlife species diversity and abundance.

In 2012 the proposed Hagenbarth Seeding Allotment was evaluated and the area was found to be meeting rangeland health standards for seedings and for wildlife habitat. It was found that the mixed plant community is being maintained to ensure the proper functioning of ecological processes and continued productivity and diversity of plant species. It is likely that livestock grazing has occurred on the unfenced BLM parcels within this proposed allotment, although not previously authorized. In general, habitat is currently providing for the needs of wildlife within this proposed allotment and it is expected that authorizing an established grazing season would continue to provide habitat for a wide range of native wildlife species.

Alternative B (No Grazing)

Under Alternative B, no authorized grazing would be permitted within the two BLM parcels. In general, understory cover, composed of grasses and forbs, would increase and provide habitat necessary in sustaining wildlife populations. Improved seed production would increase potential for establishment of native species on the two BLM parcels. These changes would result in increased diversity, cover, and height of grasses and forbs, which would improve habitat quality for a wide variety of wildlife species. There would be no competition between big game and livestock for forage, cover and space; and there would be no potential displacement or disturbance to wildlife species by livestock during important breeding, nesting, calving, fawning, wintering, and brood-rearing seasons. Browsing of woody plant species would be minimal and potentially increase browse for big game and nesting habitat for various bird species. Impacts to burrowing species would be a lack of disturbance, or potential crushing or collapsing of burrows.

If no authorized grazing is established on the BLM land, the adjacent private landowner may be forced to fence these parcels out. Direct impacts include negatively affecting wildlife movement patterns as the fences may pose as barriers. Indirect effects include a potential increase of cover and food available to wildlife by controlling livestock distribution.

Crested wheatgrass seedings in the proposed allotment would grow decadent and thick with little opportunity for establishment of native forbs, grasses, and shrubs to occur providing poor quality habitat for many native species. However, some native species have adapted to using crested wheatgrass seedings at certain times of the year. Big game would likely use the seedings in the spring and fall when new growth occurs.

Impacts to wildlife from an increase in fuel load would be similar to those discussed under **Migratory Birds**.

Impacts to wildlife in the proposed Hagenbarth Seeding Allotment would be greater under Alternative A compared to Alternative B, due to reduced cover and forage available for wildlife and potential for disturbance and displacement to occur.

Economic and Social Values

Affected Environment

Two measures of economic impacts used in studies exploring impacts to livestock operations due to changes in federal grazing permits and leases are herd reduction and forage substitution (Rowe and Bartlett, 2001). Herd reduction may be a better indicator of operation efficiency rather than direct economic impact at the level of the individual operator (Rowe and Bartlett, 2001). The impact on any single ranch operation of a reduction in public land AUMs may be enormous, depending on the flexibility of its nonfederal forage base and other factors (Harp et al, 2000). The impacts of herd reductions resulting from federal land management policy changes that reduce federal land AUMs have been estimated at the community and county level (Harp et al, 2000), however, these estimates are based on evenly distributed federal land AUM reductions at a scale beyond the allotment level. Based on recent USDA cattle market reports (USDA, 2012) the average recent market steer price was \$750 or \$75 per AUM assuming a 10 AUM input. The average recent market price for replacement cows was \$1100 or \$110 per AUM assuming 12 AUMs input. Therefore the change in gross revenue for the operators may range from \$75 to \$110 per AUM. Forage replacement has also been used as a proxy indicator of economic impact. Forage replacement values may range in cost from replacement from private pasture to replacement from hay versus the annual cost of forage on public land which was \$1.35 per AUM in 2011. Average private pasture cost in Idaho in 2011 was \$12.60 per AUM and average local hay prices were \$100 per AUM. Therefore the forage substitution cost annually would range from \$11.25 to \$98.65 per AUM.

Additional costs to livestock operations associated with public lands grazing may include construction and maintenance of range improvement projects, transportation costs, and operating cost associated with herd maintenance and management. The cost or impact on the individual operator is difficult to quantify and is highly variable depending upon their specific situation. Some costs would occur on private grazing lands as well and are therefore not associated specifically with public land grazing.

Environmental Consequences

Alternative A (Proposed Action)

Alternative A would result in an authorization to use public lands within the proposed Hagenbarth Seeding Allotment. The authorization may result in economic and social impacts on the operator, depending of the flexibility of their nonfederal forage base. The operator currently does not rely on public lands within the project area as vital forage source. Substantial

investments have been made on adjacent private lands to make livestock use more feasible in the area. The benefit to the operator would be avoiding potential trespass situations and any social or financial impacts that may result from such a situation. The permittee would also benefit from the authorization of 8 AUMs annually in the new allotment. In addition, Alternative A would not require additional fencing and any financial resources required to build the fence to exclude the public parcels. There would be no impact from Alternative A, which is the baseline for addressing economic and social values relative to the operators.

Alternative B (No Grazing)

Under Alternative B, no livestock grazing would be authorized on public lands. In terms of utilizing forage on public lands Alternative B would not result in any financial change compared to the current situation. Additional expenses would occur as the operator would be required to build additional fencing to prevent unauthorized use of public lands. If the operator neglected to build the fence and unauthorized livestock use occurred, potential social and financial impacts would occur as a result of a trespass situation.

CHAPTER 4 - CUMULATIVE IMPACTS

This section of the document discloses the incremental impact that Alternatives A and B are likely to have when considered in the context of impacts associated with past, present, and reasonably foreseeable future actions that have occurred, or are likely to occur, in the area.

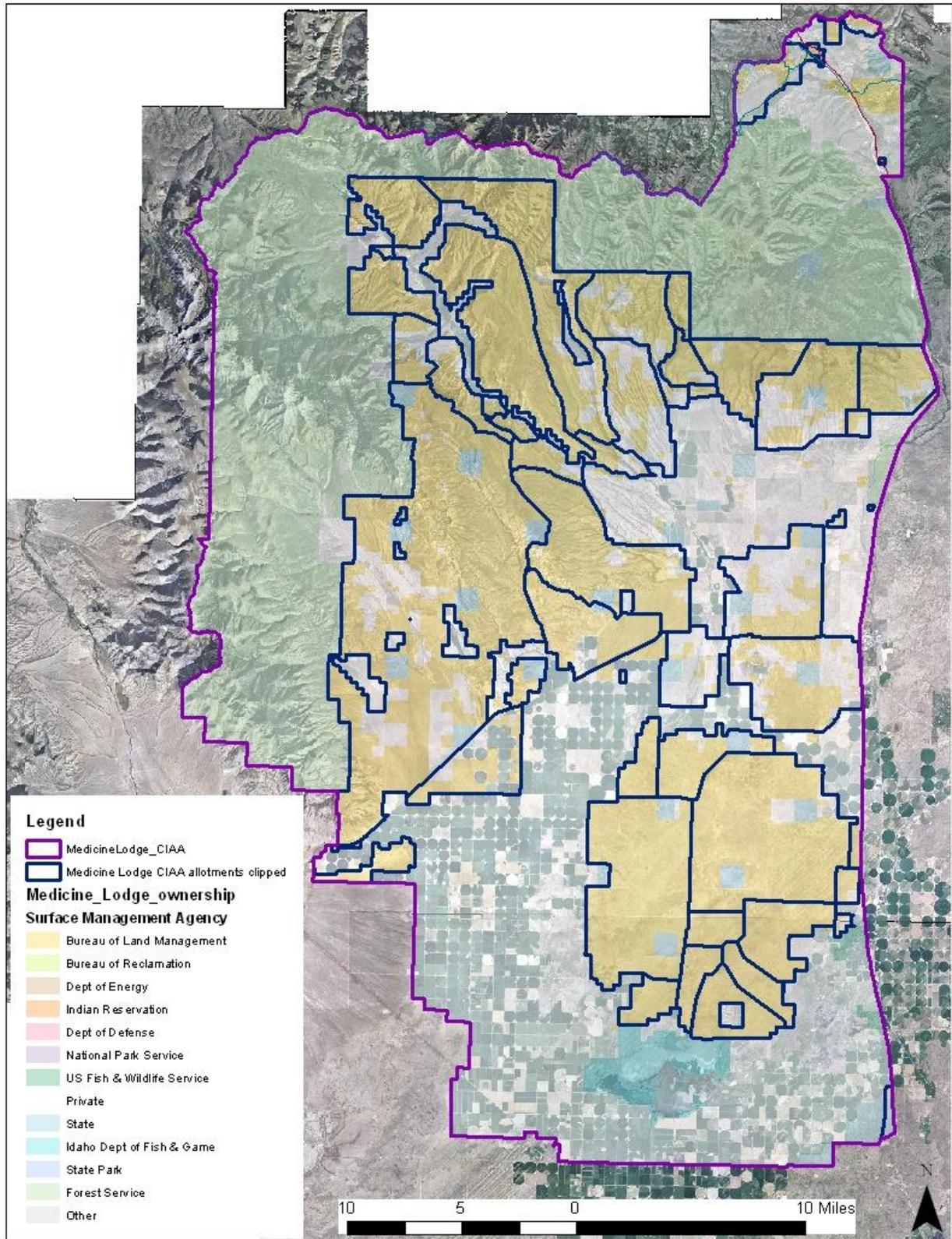
The Cumulative Impact Assessment Area (CIAA) for this analysis includes Medicine Lodge, the front range of the Beaverhead Mountains, and the Table Butte area (Figure 4). This area is called the Medicine Lodge CIAA. The CIAA consists of approximately 758,310 acres located in portions of Jefferson and Clark Counties. Unless otherwise noted, this landscape unit defines the bounds of the cumulative analysis for the resources affected by the alternatives. This landscape unit was selected as the unit of analysis based on 4th level hydrologic unit boundaries within the Upper Snake Field Office area, then modified using major highways and ownership boundaries to create a continuous unit of associated land uses and plant communities. The proposed Hagenbarth Seeding Allotment is located in the eastern portion of this CIAA, and makes up less than one percent of the total acres and less than one percent of the BLM acres in the CIAA (Table 6).

| Table 6. Surface Management Status within the Medicine Lodge CIAA | |
|--|---------------|
| Ownership | Acres |
| Bureau of Land Management | 261,499 acres |
| Private Property | 273,790 acres |
| U.S. Forest Service | 192,233 acres |
| Idaho Department of Lands | 18,565 acres |
| Idaho Fish and Game Lands | 11,020 acres |
| Camas National Wildlife Refuge Lands | 1,203 acres |

Except for the areas that have been cultivated for agriculture, this landscape unit includes a large continuous, ecologically unique landscape consisting of a substantial proportion of vegetation influenced by sandy to loamy soil textures, punctuated by lava flows with basin, Wyoming, and

mountain big sagebrush, low sagebrush, black sagebrush, and threetip sagebrush vegetative communities. The southern portions of the CIAA around Table Butte are dominated by sandy soils. These sandy ecological sites are dominated by basin big sagebrush with an understory of needle-and-thread and Indian ricegrass. As the sandy substrates give way to gravelly outwash plains and loamy soils to the north, the basin big sagebrush gives way to low sagebrush, black sagebrush, and Wyoming big sagebrush vegetation, with an understory of bluebunch wheatgrass. The northeast portion of the CIAA has a substantial component of threetip sagebrush vegetation over loamy or gravelly loam soils, with an understory of bluebunch wheatgrass, needle-and-thread, and Indian ricegrass. The north and west portions of the CIAA are dominated by mountain big sagebrush vegetation on loamy soils, with an understory of Idaho fescue and bluebunch wheatgrass, which yields to forested vegetation at higher elevations.

Figure 3: Medicine Lodge Cumulative Impact Assessment Area.



A number of general habitat types or classifications are found across the CIAA. Table 7 lists the acres within each cover classification based on the landscape classification map used for the Upper Snake Field Office Analysis of Management Situation (AMS).

| Habitat Type or Vegetation Classification | Acres |
|---|---------------|
| Agriculture | 130,217 acres |
| Annual Grasslands | 3,893 acres |
| Bedrock-Cliffs-Scree | 4,796 acres |
| Forest | 62,174 acres |
| Perennial Grasslands | 75,067 acres |
| Riparian-Wetland, including open water | 28,149 acres |
| Sagebrush and Desert Shrublands | 431,520 acres |
| Shrublands, including juniper and mountain mahogany | 8,784 acres |
| Urban and industrial/excavation areas | 13,242 acres |

This area ranges widely in its actual and available precipitation coinciding with the range in soil textures and elevation gradient from the south end to the north and west ends of this CIAA. The lowest precipitation areas occur near Montevue, Mud Lake, Terreton, and Hamer, at 8-10 inches of precipitation per year. The highest precipitation areas in the CIAA occur on the north and west edges of the CIAA, on the Beaverhead Mountains and Black Mountain. This uppermost edge of the CIAA receives 24 to 28 inches of precipitation per year. About 39 percent of the CIAA receives 12 inches or less per year, about 23 percent of the CIAA receives between 12 and 16 inches of precipitation per year, about 22 percent of the CIAA receives between 16 and 20 inches of precipitation per year, and about 15 percent of the CIAA receives more than 20 inches of precipitation per year.

Past and Present Actions

Past and present actions that have occurred in the watershed have impacted the environment to varying degrees. These actions include agricultural development, infrastructural development, vegetation management, wildfire, and livestock grazing (Table 8). Although these actions probably do not account for all of the impacts that have or are likely to occur in the Medicine Lodge CIAA, GIS analysis, agency records, and professional judgment suggest that they have contributed to the vast majority of cumulative impacts that have occurred in the assessment area.

Table 8. Past and Present Actions within the Medicine Lodge CIAA.

| Type of Activity | Past and Present Actions |
|--|---------------------------------|
| <i>Agricultural Development</i> | |
| <i>Cultivated crop agriculture, both dryland and irrigated</i> | 130,217 acres |
| <i>Urban Development</i> | |
| <i>Buildings and other structures, concrete and asphalt pads</i> | 13,242 acres |

| Type of Activity | Past and Present Actions |
|---|---|
| Infrastructural Developments | |
| <i>Roads- paved, maintained gravel, and 2-track</i> | 2,083 miles with a 12 foot right of way, affecting 3,030 acres. Road density is 1.8 road miles/mile ² in CIAA |
| <i>Railroads</i> | 10 miles of track with a 200 foot right of way, affecting 242 acres. |
| <i>High Voltage Transmission Lines</i> | 47 miles with a 200 foot right of way, affecting 1,139 acres. |
| <i>Mineral Material Sites</i> | 13 active pits with a 40 acre footprint each, affecting 520 acres. |
| <i>Communication Towers</i> | 6 towers with ¼ acre right of way each, affecting 1.5 acres. |
| <i>Recreation Facilities</i> | Two designated campsites on BLM lands, affecting 10 acres One developed campground on USFS lands, affecting 10 acres Four developed trailheads on USFS lands, affecting 4 acres About 20 dispersed campsites on BLM lands, affecting about 40 acres About 170 dispersed campsites on USFS lands, affecting about 120 acres About 15 dispersed campsites on private lands, affecting 30 acres Total Disturbance: About 214 acres |
| <i>Range Improvements</i> | Fences: 738 miles Assuming 4 feet of disturbance along fence lines, there are 358 acres disturbed as a result of the existing fence lines in the CIAA. Troughs: 137 Assuming ½ acre of direct soil disturbance and vegetation removal per trough, there are 69 acres disturbed as a result of watering troughs in the CIAA. Total disturbance: 427 acres |
| Wildfire | |
| <i>33 Recorded Wildfires between 1980 – 2011</i> | 76,507 acres |
| <i>5 Wildfire Rehabilitation Projects</i> | 49,940 acres |
| Vegetation Management | |
| <i>Non-Native Grass Seeding</i> | 8,435 acres |
| <i>Sagebrush Seeding</i> | 14,998 acres |
| <i>Prescribed Fire</i> | 25,967 acres |
| <i>Chemical Brush Thinning</i> | 0 acres |
| <i>Mechanical Brush Thinning</i> | 1,990 acres |
| Invasive Species | |
| <i>Noxious weeds</i> | 9,517 acres |
| <i>Annual grasses</i> | 3,893 acres |
| Livestock Grazing | |
| <i>Number of Allotments</i> | 46 BLM grazing allotments comprising 320,830 acres. 24 active USFS grazing allotments comprising 172,674 acres. |

| Type of Activity | Past and Present Actions |
|---|---|
| <p><i>Rangeland Health Assessments (BLM Allotments)</i></p> | <ul style="list-style-type: none"> • 262,956 allotment acres (82%) are currently meeting all Idaho Standards for Rangeland Health. • 1,790 allotment acres (1%) are currently making significant progress towards meeting Standards. • 51,726 allotment acres (15%) currently not meeting one or more Standards, current livestock grazing management is a causal factor. All allotments not meeting one or more standards because of livestock grazing management problems have seen changes to the livestock grazing management during the last ten years to ensure the allotments would make significant progress towards meeting the standards. Reductions in AUMs were made on 31,240 acres not meeting one or more standards in 2009 and 2011. • 4,960 allotment acres (2%) are not meeting one or more Standards, but not due to current livestock grazing management. |

Agricultural development has a long history in the area. Today, irrigated agricultural development dominates the south half of the CIAA, and is a substantial and important use of the assessment area. Before the private lands were irrigated for agricultural use, they were dominated by sagebrush vegetation, and used for grazing livestock. There are several irrigation wells and canals that irrigate crops, hay fields, and pastures within the CIAA. The agricultural development on the private lands in the south half of the CIAA has resulted in blocks of public land separated by several miles of irrigated crop fields, with little connectivity to adjacent blocks of public land. The north half of the CIAA contains agricultural development, but not at the levels seen in the south half of the CIAA. The north half of the CIAA contains a large continuous block of public land with connectivity to public and USFS lands to the north, west, and east.

Urban and infrastructure development has increased over time, and a substantial portion of the CIAA has been developed for agricultural activities, roads, railroads, irrigation, power lines, and small buildings. Some permanent residential development exists near Terreton, Mud Lake, Montevue, Small, Dubois, and Spencer. Most of this development is associated with farming and ranching in the area. The Montevue-Hamer Road is a developed gravel road maintained by Jefferson County that connects the communities of Montevue to Hamer. State Highway 22 runs in an east-west direction across the CIAA. Other developed county roads cross the lands on all sides of the Medicine Lodge area, providing access to public land. There is a railroad line running between Montana and Idaho Falls that runs through the northeast corner of the CIAA, and a large (230 kV) power line that crosses through Medicine Lodge valley and turns west through the CIAA.

Livestock grazing has a long history in the region dating back to the late 1800's. Livestock grazing remains a primary use in the CIAA, although at lower levels of use than the first half of the 20th century. Ranching and livestock grazing are generally dispersed activities with areas of more intensive use near water and livestock handling facilities. Livestock grazing remains a primary use of the CIAA. There are occasional fences, water tanks, and troughs used to manage livestock grazing across the landscape.

Recreation use of the area has increased over time. Recreation use in the CIAA is primarily a dispersed activity with areas of more intensive use along Medicine Lodge Creek and several smaller creeks in the valley. Fishing, hunting, and summer trail use on the National Forest trail system are the main recreational pursuits in the CIAA. The Medicine Lodge area is popular with big game and upland bird hunters, as there are relatively large populations of elk, moose, deer, antelope, and sage grouse in the area. A BLM dispersed campground has been developed along a portion of Medicine Lodge Creek, and the landowner that owns much of the Medicine Lodge Creek riparian zone allows dispersed camping, fishing, and hunting at several access points along the valley. The U.S. Forest Service maintains a developed campground in Medicine Lodge, at the Webber Creek trailhead. Numerous undeveloped and dispersed camp sites are present in the valley as well. Common recreation pursuits include fishing, camping, hunting, hiking, and motorized vehicle use.

The Medicine Lodge area is important habitat for elk, deer, moose, antelope, and sage grouse. There is also designated bighorn sheep habitat (112,121 acres) on the west side of the CIAA. Several of the streams in the Medicine Lodge area provide habitat for Yellowstone cutthroat trout, a BLM sensitive species.

Sage grouse Preliminary Priority Habitats (PPH) are those areas of highest conservation value due to high male lek attendance, high lek density and high lek connectivity (Makela and Major 2011). There are approximately 432,362 acres of PPH within the Medicine Lodge CIAA. Preliminary General Habitats (PGH) are habitats occupied by sage grouse not contained within PPH. PGH areas are characterized by lower lek densities that may serve as important connectivity corridors between PPHs (Makela and Major 2011). There are approximately 59,045 acres of PGH within the CIAA.

The U.S. Fish and Wildlife Service identified primary and secondary threats to Greater sage-grouse in 2010. Primary threats include fragmentation of sagebrush habitats due to: conversion of habitat for agriculture or urbanization, inadequate regulatory mechanisms, infrastructure (roads, power lines, energy development, etc.), invasive species and wildfire. Secondary threats included: climate change, collisions (with fence, power lines, etc.), conifer invasion, contaminants, disease (West Nile virus), poorly managed livestock grazing, hunting, mining, predation, prescribed fire/vegetation treatments and water developments (USFWS 2010).

Although livestock grazing was not identified as a primary threat, it is one of the more widespread uses occurring in sage grouse habitat (Connelly et al. 2004). There is limited evidence to suggest direct impacts to sage grouse by livestock, but livestock grazing does affect sage grouse habitats by removing vegetation through foraging or changing species composition under poor management practices (Connelly and Braun 1997). The PPH and PGH areas occur on about seven percent of the area of public lands identified as not meeting ISRH and livestock grazing was identified as a factor.

Reasonably Foreseeable Future Actions

Reasonably foreseeable future actions include continuation of the past and present actions as described above, and the possible expansion of power line corridors. The level and character of livestock grazing and agricultural development are anticipated to remain consistent into the foreseeable future. Recreational use is expected to continue to increase. Motorized recreation has continued to increase in popularity in Idaho and there is local access to a number of designated motorized trails. The potential exists for expansion of the BLM dispersed campground to address resource impacts from dispersed campsites along the creek. The BLM has planned a cheatgrass reduction project in two areas to reduce the amount of cheatgrass that has colonized areas where heavy equipment worked during the 2003 Deep Fire. The BLM is also planning a conifer thinning project on the foothills of the Beaverhead Mountains to improve sagebrush communities and aspen stands.

Infrastructure development is anticipated to continue to increase in the foreseeable future. The existing power line route through Medicine Lodge valley was considered in 2008 as an alternative route for the Mountain States Transmission Intertie 500 kV Project (MSTI), but this route was dropped from consideration. The current proposed MSTI route would travel over Monida Pass, then cross east to west near Highway 22 for a total of 44 miles of new power line within the CIAA.

Besides the MSTI Project, there are no other known primary threats such as conversion of sage grouse habitat for agriculture or urbanization, or infrastructure (roads, energy development, etc.) proposed on public lands in the CIAA. In addition, no such plans or proposals are known for nearby lands under other ownership (private, NPS, USFS, DOE or State of Idaho lands) in the CIAA. Invasive species and wildfire continue to be primary threats that cannot be anticipated in frequency or intensity. Impacts associated with wildfire are the greatest threat (USFWS 2010) to sage grouse in the CIAA. Managing for healthy habitats in the CIAA provides the most protection against invasive species and resiliency to disturbances such as wildfire.

Changes in greenhouse gas levels affect global climate. Ring et al. (2012) reviewed scientific information on greenhouse gas emissions and climate change, including the four Assessment Reports of the Intergovernmental Panel on Climate Change between 1990 and 2007, and recognized a growing consensus within the scientific community that most of the observed increase in global average temperatures since the mid-20th century is very likely due to the observed increase in anthropogenic greenhouse gas concentrations. While the additional analysis by Ring et al. (2012) included data through 2010 and supports the earlier conclusions by others, the level of skepticism regarding global warming among the general public, at least in the United States, remains much higher.

The BLM's 2008 NEPA Handbook, H-1790-1, explains that a topic must have a cause and effect relationship with the proposed action or alternatives to be considered an issue (H-1790-1, p. 40). Climate change does not have a clear cause and effect relationship with a proposed action or alternative, because it is not currently possible to identify a specific source of greenhouse gas emissions or sequestration and designate it as the cause of specific climate changes (USGS, 2008). Land management actions might contribute to changes in atmospheric greenhouse gas

levels, which can affect global climate. Addressing effects on greenhouse gas levels within the scope of NEPA is difficult due to the lack of explicit regulatory guidance on how to meaningfully apply existing NEPA regulations to this evolving issue, and due to the continuously evolving science available at varying levels. The proposed action and alternatives do not have a clear, measurable cause and effect relationship to climate change because the available science cannot identify a specific source of greenhouse gas emissions or storage and tie it to a specific amount or type of climate change. In spite of these cause and effect NEPA limitations for GHG analysis, BLM nevertheless recognizes that climate change aggravated by GHG may result in individual and compounding adverse impacts to plants and animals.

Impacts Associated with Past, Present, and Foreseeable Future Actions

Past and present actions have resulted in varying degrees of impact to the resources considered in the analysis. Observable impacts are higher for agricultural development and infrastructure which have resulted in direct habitat loss and fragmentation on most of the private lands in the CIAA. These actions have altered the native vegetation and introduced non-natural elements of form, line, and color that have altered and would continue to alter the characteristics of the visual landscape.

Today, irrigated agricultural development is found on a substantial portion of the CIAA, and is a substantial and important use of the assessment area. Before the private lands were irrigated for agricultural use, they were dominated by sagebrush vegetation, and used for grazing livestock. This has resulted in a direct loss of about 130,217 acres of sagebrush habitat in the CIAA in the last 30 to 40 years. Although many species of wildlife forage in the agricultural fields at different times of the year, the loss of large blocks of sagebrush habitat has reduced the connectivity of the remaining sagebrush habitats within the CIAA.

Urban and infrastructure development has increased over time, and a portion of the CIAA has been developed for agricultural activities, roads, railroads, irrigation, power lines, and small buildings. These developments have resulted in a direct loss of about 18,175 acres of sagebrush habitat, and a loss of connectivity between remaining sagebrush habitats within the CIAA. These structures have increased the perching habitat for avian predators in the area. The proposed MSTI route would impact 1,067 additional acres within the CIAA. The existing roads and trails create a small amount of soil compaction and erosion, and may be vectors for the spread of noxious weeds. However, they provide access for the public to large expanses of public lands for hunting and all-terrain vehicle riding in the CIAA.

Documented fires have impacted approximately 76,507 acres or ten percent of the CIAA from 1980 to the present. Although wildfires have repeatedly burned in the area, there are two areas with reduced sagebrush cover relative to site potential. The first is the Deep Fire area, which burned in 2003. The mountain big sagebrush vegetation in the Medicine Lodge area recovers relatively quickly after fires. The largest burn previous to the Deep Fire burned the Indian Creek bench in 1981. Within about 20 years, the sagebrush cover in the burned area matched the amount of sagebrush cover in adjacent unburned areas, and the fire scar was no longer apparent on the ground or in aerial images. The second area is around Camas Butte, which burned in 1986 and in 2000. The basin big sagebrush vegetation has been slow to return to these burned

areas. Sagebrush seed was aurally applied to the areas burned in 2000 during post-fire rehabilitation activities. A pilot project funded by the Idaho Office of Species Conservation included planting sagebrush plugs on these burned areas in 2011 to increase the sagebrush cover in important sage grouse habitats.

Periods of extended drought likewise impact the CIAA. Based on climatic data collected near Hamer, Idaho, precipitation has been reported below the long-term average in 9 of the past 20 years, with 7 of those 9 years reporting greater than 20 percent below average. Climatic data collected near the U.S. Sheep Experiment Station north of Dubois, Idaho found that precipitation was below the long-term average in 9 of the past 20 years, with 4 of those 9 years reporting greater than 20 percent below average.

Unmanaged livestock (horses, cows, and sheep) grazing in the first half of the 20th century resulted in altered ecological conditions in the riparian areas and the uplands in Medicine Lodge CIAA. As livestock grazing became more carefully managed in the area, the ecological health of the rangelands and riparian areas improved. Today, about 78 percent of the riparian acres on public lands in the Medicine Lodge CIAA are either in PFC or making significant progress towards PFC. About 83 percent of the upland acres in the CIAA are being maintained or improved to ensure the proper functioning of ecological processes and continued productivity and diversity of native plant species. These healthy uplands are providing suitable habitat to support a wide variety of wildlife species, including several game and nongame species, special status species and migratory birds. About 15 percent of the public land acres in the CIAA have recently completed the grazing permit renewal process, and substantial changes to the livestock grazing management were made to allow the upland vegetation and wildlife habitat to improve and make progress towards the proper functioning of ecological process and improved productivity and diversity of native plant species.

A number of researchers, including Lapage et al. (2012) while recognizing the inherent variability within and appropriate application of global and regional climate models, have recognized the potential impact to agricultural production that climate change scenarios, including altered temperature and precipitation regimes at the regional level may induce. Neilson et al. (2005) in summarizing output from seven models and possible scenarios of regional climate change in the Great Basin identified long-term trends toward greater precipitation and warmer temperatures, although noted inter-annual and inter-decadal variability that could account for short-term records that may differ. A similar summary of the available studies and models is presented by Chambers and Pellant (2008).

Possible consequences to vegetation communities resulting from climate change in the Great Basin include a dramatic increase and expansion of woody frost-sensitive species at the expense of shrubland and a corresponding increase in fire. Bradley (2009) modeled the consequences that altered summer precipitation and winter temperature could have on the potential risk of cheatgrass expansion or contraction, noting that climatic change will affect the potential geographic distribution of cheatgrass and will likely affect other plant invaders as well. Ash et al. (2012) identified that adaptation options will be required in different rangeland regions in response to climate change to enhance the development of sustainable livelihoods with both social and ecological resilience. Technical input to the 2013 National Climate Assessment

identified the process of adjustment to actual and expected climate and its effects in order to moderate harm or exploit beneficial opportunities on biodiversity, ecosystems, and ecosystem services (Staudinger, et al., 2012).

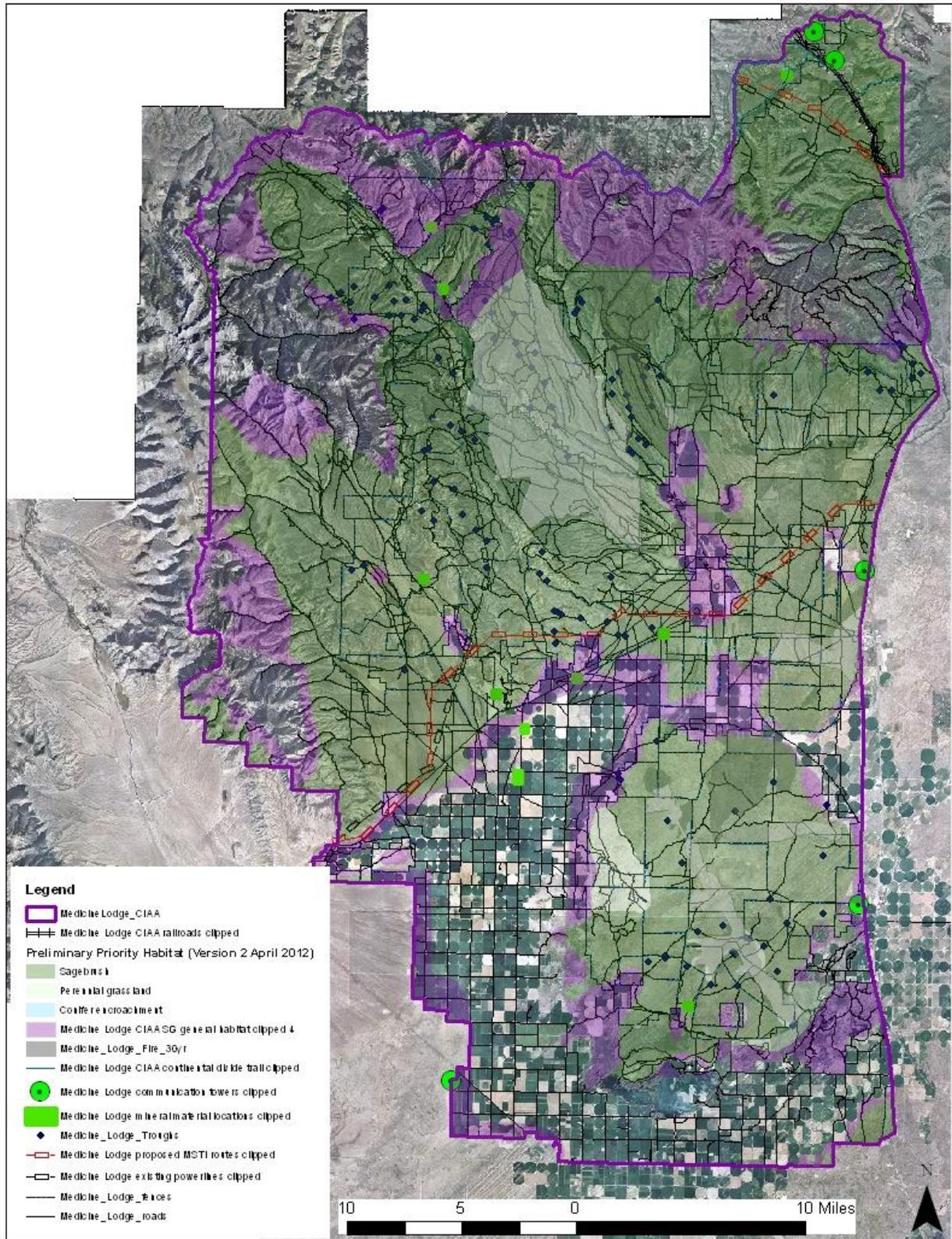
With consideration for anticipated stressors induced by climate change, appropriate livestock management and other land use practices that improve and maintain healthy and functioning vegetation communities which provide for proper nutrient cycling, hydrologic cycling, and energy flow remains the primary adaptation against changing precipitation and temperature regimes.

Within the planning area, sage grouse are a migratory species occupying hundreds of square miles annually and sometimes making seasonal movements that exceed 40 miles. The health of the species is directly tied to maintaining habitat diversity and quality. Altered fire regimes influenced by non-native cheatgrass, loss of sagebrush cover due to wildfires, and habitat fragmentation from roads, development, and agriculture are a cumulative influence on the species. Proposals for energy corridors further threaten habitats. Livestock grazing occurs on the vast majority of sagebrush lands range-wide (Knick et al. 2003, Connelly et al. 2004.); however there is little information directly linking livestock management practices to sage grouse population levels (Braun 1987, Connelly and Braun 1997, Mosely 2001). The implementation of improved grazing management practices since the 1950's has improved or maintained healthy vegetative conditions on nearly all the remaining rangelands in the CIAA.

The U.S. Fish and Wildlife Service (USFWS) identified primary and other threats to Greater sage-grouse in its 12-Month Findings for Petitions to List the Greater Sage-Grouse as Threatened or Endangered (USFWS 2010). The primary cause of sage grouse population decline identified by the USFWS was fragmentation of sagebrush habitats due to: habitat conversion for agriculture or urbanization, infrastructure within sagebrush habitats (powerlines, communication towers, fences, roads, railroads, etc.), wildfire and energy development (specifically roads and energy related infrastructure). Other important threats included: inadequate regulatory mechanisms, invasive plants (annual grasses and noxious weeds), climate change, collisions (with fence, powerlines, etc.), conifer invasion, contaminants, disease (West Nile virus), poorly managed livestock grazing, hunting, mining, predation, prescribed fire/vegetation treatments, recreation (OHV use) and water developments (USFWS 2010). It is often the cumulative impact of various disturbances that have the greatest effect on sagebrush ecosystems, rather than any single disturbance (Knick et al. 2011). Table 9 includes the known impacts occurring within sage grouse PPH and PGH areas within the Medicine Lodge CIAA.

| Table 9. Known Impacts within Sage Grouse PPH and PGH in the CIAA | | | | |
|--|---------------------------|-----------------------------------|---------------------------|-----------------------------------|
| Impacts | PPH Acres Affected | % of PPH Acres in the CIAA | PGH Acres Affected | % of PGH Acres in the CIAA |
| Agricultural Development | 2,233 | 0.1% | 19,158 | 32.4% |
| Urban Development | 2,551 | 0.1% | 8,907 | 15.1% |
| Infrastructure* | 2,689 | 0.1% | 713 | 1.2% |
| Range Improvements* | 288 | <0.1% | 73 | 0.1% |
| Wildfire | 21,630 | 5.0% | 9,148 | 15.5% |
| Invasive species* | 4,792 | 1.1% | 3,522 | 6.0% |
| Livestock Grazing* | 42,903 | 9.9% | 4,435 | 7.5% |
| <p>*Note: Infrastructure is a combination of roads, power lines, and communication tower right-of-ways. Range Improvements is a combination of fences and water trough sites. Invasive species includes noxious weed sites and annual grass dominated areas. Livestock grazing impacts include those acres that are not meeting the Idaho Standards of Rangeland Health and livestock grazing management is a causal factor. Substantial changes to the livestock grazing management, including stocking rate reductions and changes to seasons and/or duration and timing of use have been made in the last ten years to ensure these acres will make significant progress towards meeting the Standards.</p> | | | | |

Figure 4. Sage grouse PPH and PGH areas and Primary Impacts to PPH and PGH.



Wildfire and development (agricultural and urban) provide the greatest cumulative impact to sage grouse within the CIAA. When combined with all other identified impacts, about 16 percent of PPH and PGH in the CIAA have been disturbed by one or more activities. Aside from the direct impacts of habitat alteration, these disturbances may alter sage grouse behavior causing them to avoid impacted habitats or displace populations to more suitable areas.

Impacts to sage grouse caused by livestock grazing were likely greatest during the time that unregulated grazing occurred, from the late 1800s into the early 1900s. The Taylor Grazing Act (1934) was the foundational law for livestock management on public lands, and although it was intended to regulate livestock use, it also benefited sage grouse habitat within the CIAA. Since then other laws, improved science, improved management cooperation (interagency and with private landowners) and improving adaptive management have provided further protection for sage grouse habitats. The acres shown as impacted by livestock grazing in Table 8 were determined to not be meeting one or more of the Idaho Standards for Rangeland Health during the last ten years. As a result of that determination, substantial changes to the livestock grazing management have been made on those acres, including stocking rate reductions, changes in the season of use, and/or changes in the timing or duration of grazing use. All the changes were made in order to ensure that the acres not meeting standards would make significant progress towards meeting the standards.

Key sage grouse habitats are large scale, intact sagebrush steppe areas that provide sage grouse habitat (Sather-Blair et al. 2000). Within the Medicine Lodge CIAA there are approximately 397,836 acres of Key sage grouse habitat, which is approximately 53% of the CIAA. There are also 69,534 acres (nine percent of the CIAA) of Restoration Type 1 habitat in the CIAA. These areas have limited sagebrush composition, but acceptable understory comprised of native and/or seeded perennial grass rangelands. Restoration Type 1 habitats are considered important areas of focus for sagebrush establishment and retention (Sather-Blair et al. 2000). Within the CIAA there are also areas with acceptable sagebrush cover, but inadequate desirable herbaceous cover in the understory or the understory is comprised of invasive annual grasses or exotic plants. Habitats that meet these criteria are considered Restoration Type 2 (Sather-Blair et al. 2000). About 38 percent of the CIAA (290,940 acres) is not considered Key or Restoration habitat for sage grouse.

Contribution of the Alternatives to the Cumulative Impacts in the CIAA

Alternative A – Proposed Action

Alternative A would also contribute very little to the collective impact associated with past, present and reasonably foreseeable future actions. Livestock use on 45 acres of public land would be authorized as a result of Alternative A. This would result in a very slight increase of livestock use in the CIAA. There would be no new structural developments which would contribute no change to the collective impact relative to non-natural elements of form, line, and color within the landscape. The number of road miles within the area would not increase as a result of implementing Alternative A. The amount of suitable habitat for wildlife species that

occur in the CIAA would remain about the same. The actions described in Alternative A would not substantially alter the current or expected future conditions of natural resources in the CIAA.

Alternative B – No Grazing

Alternative B would also contribute very little to the collective impact associated with past, present and reasonably foreseeable future actions. Livestock use would not increase as a result of implementing Alternative B. There would be no new structural developments which would contribute no change to the collective impact relative to non-natural elements of form, line, and color within the landscape. The number of road miles within the area would not increase as a result of implementing Alternative B. The amount of suitable habitat for wildlife species that occur in the CIAA would remain about the same or increase slightly. The actions described in Alternative B would not substantially alter the current or expected future conditions of natural resources in the CIAA.

CHAPTER 5 – SUMMARY AND CONCLUSIONS

The assessment indicates that Alternative A would have limited impacts on 45 acres of public land within the USFO. Authorizing livestock use in the area would promote cooperative management and orderly administration of public lands. Under Alternative A, there would be limited impact on economic or social values. Alternative A would be expected to meet applicable ISRH.

The assessment indicates that Alternative B, which includes denying the application to graze livestock in the proposed area, would continue to meet standards and continue to provide habitats suitable to maintain viable populations of special status species and improvement in habitat condition. Under Alternative B, there would be economic and social impacts on the operators. Alternative B would be expected to meet applicable ISRH.

CHAPTER 6 - CONSULTATION AND COORDINATION

Persons and Agencies Consulted

Jim and David Hagenbarth – Permittee
Idaho Department of Fish and Game
Idaho State Dept. of Agriculture
Chairman, Land Use Policy Committee, Shoshone-Bannock Tribes
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Jordan Hennefer: Economic and Social Values/Invasive, Non-Native Species/Vegetation
Justin Frye: Wildlife Resources/Threatened, Endangered, and Other Special Status Species

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APPENDIX A – DETERMINATION DOCUMENT for proposed HAGENBARTH SEEDING ALLOTMENT

SECTION 1 –DETERMINATION REQUIRED

X All Standards are met or making significant progress towards meeting and there is conformance with the guidelines. **No Determination is required, review is complete.**

— One or more Standards is not being met or there is non-conformance with the guidelines. **An Authorized Officer’s Determination is required; continue with Section 2.**

SECTION 2 –DETERMINATION

The Determination documents the authorized officer’s finding that existing grazing management practices or levels of grazing use on public lands either are or are not significant factors in failing to achieve the standards and conform to the guidelines within a specified geographic area. (H-4180-1 page I-3)