Environmental Assessment DOI-BLM-WY-070-EA13-222

Lease Renewals

South Phinney Draw Allotment #16896
James Eklund
Lease #4914959

North Phinney Allotment#12159
Camino and Sons
Lease # 4907250

Farm Allotment #17300
Meike Ranch
Lease #4907362

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1.0 INTRODUCTION

1.1 Background

The Bureau of Land Management (BLM), Buffalo Field Office proposes to renew 10 year grazing leases for the following allotments: South Phinney Draw (16896), North Phinney Draw (12159), and Farm (17300). Pursuant to the FLPMA Sec. 402 (c) (3) the holder of the expiring lease shall be given first priority for receipt of the new lease where lands are allocated as available for livestock grazing through land use plans and the lessee is in compliance with the rules and regulations and the terms and conditions of their current lease.

The allotments are within close proximity to one another in southern Johnson County, Wyoming, and are 15-20 miles east or northeast of the town of Kaycee, Wyoming. Elevations range from about 4,300 feet along Powder River to over 4,700 feet. The allotments encompass approximately 26,000 acres of which approximately 7% are public lands, 5% is State of Wyoming land, and 88% is private land. The grazing leases include a total of 1878 federal acres and 175 animal unit months (AUMs) of forage. Table 2 shows the current grazing use authorized on BLM lands for each allotment. BLM is analyzing these allotments and their associated grazing leases on a watershed scale in order to evaluate the effects of the Proposed Action on the wider environment and to better capture cumulative impacts. The lands are shown on the map in attachment 1. The public lands (BLM) associated with each lease are as follow:

South Phinney Draw (16896)

T45N R79W Sec 3, W½SE¼, SE¼SE¼, SW¼ (portion east of road)
Sec. 12, SW¼NE¼
Sec. 22, N½NE¼

North Phinney Draw (12159):

T45N R78W Sec 5, lot 1, SE¼NE¼

T46N R78W Sec. 7, lots 3 and 4, E½SW¼, SE¼
Sec. 8, SW¼

Farm (17300):

T43N R78W Sec. 3, S½SW¼
Sec. 10, NW¼NW¼, E½W½
Sec. 15 W½
Sec. 20 NE¼NE¼
Sec. 21 SE¼NE¼, N½N½
Sec. 22 NW¼

This environmental assessment (EA) (WY-070-EA13-222) documents the environmental analysis conducted to determine what impacts the proposed action will have on the environment. The current grazing lessees own the base property associated with their respective allotments. Each of these parties currently holds the grazing authorization for the associated allotment. Grazing lease #4914959 was last issued under authority of section 325, public law 108-108 (Appropriations Act) March 1, 2011 and will expire on February 28, 2021. Lease #4907250 was last issued under authority of section 325, public law 108-108 (Appropriations Act) on March 1, 2011 and will expire on February 28, 2021. Lease #4907362 was last renewed under authority of

section 325, public law 108-108 (Appropriations Act) on March 1, 2013 and will expire on February 28, 2023. The Grazing lessees applied for renewal of the grazing leases authorizing grazing on their respective allotments. Per 43 CFR 4110, the grazing lessees have preference in retaining the grazing privileges attached to each property. Because the leases were last renewed under the appropriations act, in order to adequately complete the process of these leases a new EA will be written. Upon affirmative final decision of this EA's proposed action a new 10 year term grazing lease will be issued to the lessee.

Below Table 1 shows the grazing leases that are leased to the current grazing lessee whom holds a private lands grazing lease of the base property attached to each allotment.

Table 1- Base Property Leases

Grazing Lease Number	BLM Grazing Lessee	Base Property Owner
4914959	James Eklund	Hesse Ranch, LLC
4907250	Camino and Son	Hesse Ranch, LLC

The Buffalo RMP has been amended to adopt the *Standards for Healthy Rangelands and Guidelines for Livestock Grazing Management for Public Lands Administered by the Bureau of Land Management in the State of Wyoming* (1997). A formal assessment of the S&Gs has not yet been conducted for South Phinney Draw, North Phinney Draw or Farm allotments. Although no assessments have been completed, monitoring data and field visits on the allotment would likely support that the allotments are meeting the Standards and Guidelines for Healthy Rangelands in Wyoming. In 1998 the BFO developed a schedule for evaluating S&Gs. The allotments on this list are all in the "I" and "M" categories, which are highest priority for management and evaluation as described in the WY S&Gs Implementation Plan. Active management of category "C" isolated public lands is at a public cost and management effort largely beyond the scope of generating public benefit; see generally, Ted Lapis v. U.S., 178 IBLA 62 (2009).

1.2 Purpose and Need for the Proposed Action

The Buffalo Resource Management Plan (RMP) allocated lands as available for domestic livestock grazing during the land use planning process. The purpose of the proposed action is to promote healthy sustainable rangeland ecosystems as well as the efficient and effective administration of grazing on public rangelands specifically within the following allotments: South Phinney Draw (16896), North Phinney Draw (12159), and Farm (17300).

The need for the proposed action is to respond to the grazing lease renewal applications under the Bureau of Land Managements (BLM) mandate under the Taylor Grazing Act, as amended (43 U.S.C. 315 through 315r) and Federal Land Policy and Management Act (FLPMA) (43 U.S.C. § 1701 et seq.) to provide grazing opportunities for domestic livestock grazing on public lands managed by the BLM, where consistent through land use planning efforts.

Decision to be Made: The BLM will decide whether or not to issue 10 year term grazing leases with no change in terms and conditions for the following leases; #49014959, #490250, #4907362, and how to balance the proposed action with multiple public uses.

1.3 Scoping and Issues

The BLM conducts its decision-making in accordance with the requirements of the Council on Environmental Quality (CEQ) regulations implementing the NEPA, and the Department of Interior (DOI) and BLM policies and procedures implementing NEPA. NEPA and the associated regulatory and policy framework require federal agencies use the scoping process in their decision-making.

This EA received internal scoping, from various resources specialist of an interdisciplinary (ID) in the BLM Buffalo Field Office. The identified issues are and were incorporated in chapter 3 and 4 of this document:

- How would the proposed action affect current livestock grazing management?
- How would the proposed action impact riparian areas/drainages?
- How would the proposed action impact invasive species?
- How would the proposed action impact sensitive soils?
- Would and how would the proposed action affect any special status species, particularly sage-grouse (candidate species)?
- How would the proposed action impact cultural resources and/or lands with wilderness characteristics?
- How can grazing impact native vegetation?
- Rangeland Health hasn't been completed
- There is a need for the lessee to have this grazing lease renewed

This EA was sent to interested parties of record and is posted on the Buffalo Field Office (BFO) website to solicit public and cooperating agency comments over a 30-day period. The BFO uses received comments to assess whether the EA covers the issues raised and adequately addresses their significance. The BFO's response consists of either addressing public comments in the decision record or results in the preparation of a new EA.

2.0 PROPOSED ACTION AND ALTERNATIVES

2.1 Alternative I – Proposed Action/No Action – Renewal of Leases without Modification

The BLM Buffalo Field Office proposes to maintain and improve land health and enhance habitat conditions on public lands in the BFO stewardship area by maintaining and/or enhancing upland grassland health and sagebrush habitats (species composition and structure) and maintaining riparian, wetland, and aquatic habitats through existing livestock grazing management.

Since no changes are being proposed, the Proposed Action Alternative and the No Action Alternative are the same (As Per Washington Office Instruction Memorandum No. 2000-022, Change 1 (1999)).The proposed action and the no action alternative are to offer a new 10 year term grazing lease for the following allotments: South Phinney Draw (16896), North Phinney Draw (12159), and Farm (17300) under the same terms and conditions of the existing leases. Table 2 shows current authorized use (mandatory terms and conditions) for each lessee.

Table 2 List of Leases and the corresponding allotments associated with the lease

Authorization Number	Allotment Number	Allotment Name	Public Acres	% Public Land	Livestock Number	Livestock Kind	Season of Use	AUMs	Type of Use
#4914959	16896	South Phinney Draw	320	94*	4	Cattle	3/01 to 2/28	45	Active
#4907250	12159	North Phinney Draw	558	95*	4	Cattle	3/01 to 2/28	46	Active
#4907362	17300	Farm	1000	100*	7	Cattle	3/01 to 2/28	84	Custodial
		Total	1878				Total	175	

* % Public Land is just for billing purposes and is not an accurate portrayal of the actual percentage of the allotment that is public land.

The following terms will be placed as "Other Terms and Conditions" on the leases, the conditions are placed to conform to the goals, objectives and decisions of the Record of Decision (ROD) from the Buffalo Resource Management Plan (RMP).

- This authorization is subject to cancellation, suspension, or modification for any violation of the regulations at 43 CFR Part 4100, or of the terms and conditions of the authorization
- The terms and conditions of your lease may be modified if additional information indicates that revision is necessary to conform to 43 CFR 4180
- Lessee agrees to allow authorized officers of the USDI-BLM to enter the leased lands at any time for the purpose of inspection
- Please notify BLM if number/kind of livestock or dates of use change

The proposed action will issue new 10-year term grazing leases to each of the grazing lease applicants. The applicants are currently in good standing with the BLM and meet all mandatory qualifications for obtaining a grazing lease per 43 CFR 4110.1 and 4110.2. In accordance with Title 43 CFR 4130.2(a), "Grazing permits or leases shall be issued to qualified applicants to authorize use on the public lands and other lands under the administration of the Bureau of Land Management that are designated as available for livestock grazing through land use plans." During the 10 years or following the end of the permit, the permit may be modified if information indicates changes in management are needed to ensure the allotments are meeting or making significant progress towards achieving the Standards and Guidelines for Healthy Rangelands.

The applicants are not proposing any projects or other surface disturbing activities in connection to these lease issuances. The BLM will analyze any future range improvement projects associated with these allotments under separate, site-specific EAs.

2.2 Alternative II – No Grazing Alternative

Under this alternative the BLM will not permit livestock grazing on South Phinney Draw (16896), North Phinney Draw (12159), and Farm (17300) allotments. The existing grazing leases will be cancelled in accordance with 43 CFR parts 4100 and 1600 to eliminate grazing on the allotments.

2.3 Alternatives Considered but not Analyzed in Detail

2.3.1 Sage Grouse Alternative.

BLM IM WY-2012-019 (2012) requires the BLM to address a reasonable range of alternatives in livestock grazing EAs in order to assess the impacts of livestock grazing on Greater Sage-grouse habitat and land health. The IM also stipulates that a deferred grazing system alternative should be considered if the size of the allotment warrants it. The size and continuity of the public lands in these allotments make a BLM-administered deferred or rest-rotation grazing system an unreasonable alternative in this specific case. Although portions of the South Phinney Draw and North Phinney Draw allotments are in Sage Grouse Core area, the size and management opportunity does not warrant a BLM- administered deferred grazing system. This is not to say that the grazing lessee has not implemented a rest or deferred rotation grazing system. In addition, there is little to no sage-grouse habitat present in the Farm allotment and it falls outside of key Sage Grouse habitat.

2.4 Relationship to Statutes, Regulations, Plans, or Other Environmental Analyses

This Environmental Analysis fulfills the 1969 National Environmental Policy Act (NEPA) requirement for site-specific analysis. The Proposed Action and its alternatives are in accordance with the following laws and/or regulations, other plans, and is consistent with Federal, State, and local laws, regulations:

- National Environmental Policy Act (NEPA) of 1969 (Pub. L 91-190; 42 U.S.C. 4321 et seq.)
- Taylor Grazing Act of June 28, 1934, as amended (43 U.S.C. 315 through 315r)
- The Public Rangelands Improvement Act of 1978 (43 U.S.C. 1901, et seq.)
- Federal Land Policy and Management Act (FLPMA) of 1976, as amended (Pub. L. 940579); 90 Stat.2743; 43 U.S.C. 1701 et seq.)
- 43 CFR § 4100 Grazing Administration-Exclusive of Alaska
- Grazing Regulations as codified in 43 CFR § 4100 as amended in 2005
- Endangered Species Act of 1973 (ESA), as amended (16 U.S.C. 1531 et seq.)
- Clean Water Act Section 303d
- National Historic Preservation Act of 1966 Section 106
- Sikes Act of 1969 (Habitat Improvement on Public Land)
- Fish and Wildlife Improvement Act of 1978
- Executive Order 13186 – Responsibilities of Federal Agencies to Protect Migratory Birds
- Interagency Cooperation Regulations (50 CFR 402)
- BLM Instruction Memorandum No. WY-2010-012, Greater Sage-Grouse Habitat Management Policy on Wyoming BLM Administered Public Lands including the Federal Mineral Estate (Maintained into the Buffalo RMP)
- DOI Secretarial Order No.3310—Protecting Wilderness Characteristics on Lands Managed by the BLM, Dec. 2010

- Standards for Healthy Rangelands and Guidelines for Livestock Grazing Management for the Public Lands Administered by the BLM in the State of Wyoming, December 2004

The Proposed Action and its alternatives are in conformance with the Record of Decision for the Buffalo Resource Management Plan approved October 4, 1985, the 2001 amendment, and the Powder River Basin Oil & Gas Project Final Environmental Impact Statement and Resource Management Plan Amendment (PRB FEIS) approved April 30, 2003. The action is also consistent with the land use plan terms and conditions as required by 43 CFR 1610.5-3(a). The Buffalo RMP EIS analyzed the impacts of grazing.

3.0 AFFECTED ENVIRONMENT

3.1 Introduction

The allotments are within close proximity of one another in Central Johnson County, Wyoming, and 15-20 miles east or northeast of the town of Kaycee, Wyoming. Elevations range from less than 4,300 feet to over 4,700 feet. General access to the allotments is provided by various county, state and Federal roads including; Irigaray Road, Ninemile Road, and Streeter Road. All three allotments have public access to some portion of the public lands.

The allotments are located primarily within the "Powder River Basin" level IV eco region which consists of unglaciated, irregular and dissected plains. Perennial steams in the area are generally of montane origin with sand, gravel, and cobble substrates. Ephemeral or intermittent streams in the area typically have sandy or silty substrates with many impoundments. The precipitation zone of the area is 10-14" Northern Plains (NP). Mean temperatures in January are 0ºF (low) and 36 ºF (high) and in July they are 52ºF (low) and 88 ºF (high). (Chapman, Bryce, Omernik, Despain, ZumBerge, & Conrad, 2004)

Livestock grazing, wildlife use, and oil and gas production are common land uses in the area. Recreational use, primarily big game hunting may also occur on the allotments. The public lands in these allotments are clearly lacking in wilderness characteristics due to their small size (less than 5,000 acres).

The allotments are mixtures of federal public, State of Wyoming (lands managed by the Office of State Lands and Investments) and private lands. Private lands compose the majority of each allotment. South Phinney Draw allotment has 320 BLM acres, the North Phinney Draw allotment contains 558 BLM acres, and the Farm allotment has 1000 BLM acres.

3.1.2 General Description

The South Phinney Draw, North Phinney Draw, and Farm allotments are typical of the land forms, soils, and vegetation in the area of influence for the Powder River drainage system. Differences in dominant species within the allotments vary with soil type, aspect, topography, and water availability. Annual precipitation is the principal factor limiting forage production. Floodplains and lowlands with intermittent streams are the most productive sites and the steep escarpments, ridges, and slopes are the least productive.

The public lands in these allotments are clearly lacking in wilderness characteristics due to their small size (less than 5,000 acres).

The soils in the South Phinney Draw, North Phinney Draw, and Farm allotments vary greatly depending on topographic location, slope, elevation, and precipitation. The climate of the area is characterized by relatively low amounts of precipitation, averaging between 10 and 14 inches annually. The majority of soils within these allotments are loamy, shallow loamy, clayey, and sandy.

Wyoming big sagebrush is a significant component of the plant community associated with loamy and clayey sites, with densities ranging from 2-12% throughout the allotments. Cool-season mid-grasses make up the majority of the understory with the balance made up of short warm-season grasses, introduced annual grasses, and miscellaneous forbs. The dominant cool season mid-grass species include green needlegrass (*Nassella viridula*), needleandthread (*Hesperostipa comata*), and rhizomatous wheatgrasses. Grasses can account for up to 75% of the vegetation in these types of ecological sites. With an elevation ranging from 4,300 to 4,700 feet, the growing season is short, consisting of the months of April through mid-August.

Historically, native plants in northeastern Wyoming evolved under prehistoric conditions which included grazing and browsing by bison and other native ungulates, and an associated low frequency of fire. This community is well suited to grazing by both domestic livestock and wildlife year round.

3.1.3 Energy Development

The BLM permits federal fluid and solid mineral development in the PRB. This includes federal minerals below federal and/or private (split estate) surface. The BLM prepares EAs, as required by NEPA, for this federal mineral development. In general, companies submit proposals in the form of plans of development (PODs) that may consist of 1 to 200 wells. CBNG development is only present in the eastern portion of the Farm allotment and no wells occur on public land.

The following critical elements are not present and will not be further analyzed:

Air Quality
Areas of Critical Environmental Concern (ACEC)
Prime or Unique Farmlands
Flood Plains
Native American Religious Concerns
Hazardous or Solid Wastes
Water Quality and Prime or Sole Source of Drinking Water
Wild and Scenic Rivers
Environmental Justice
Mineral Resources
Human Health and Safety
Visual Resource Management
Wilderness Characteristics

3.2 Livestock Grazing

In 1985, BLM established three categories for allotments to identify areas where management was potentially needed, as well as to prioritize workloads and the use of range improvement funds. The categories classify allotments as Improve Existing Resource Conditions (I), Maintain Existing Resource Conditions (M), or Custodial Management (C) (USDI 2008). The South

Phinney Draw, North Phinney Draw and Farm allotments are category "C" allotments, meaning their management is minimal in nature, due to the small amount of public land within the allotments. The BLM's rationale for this classification is that there are no identified resource problems, and the size and continuity of the public land is not conducive to more intensive management by the BLM. The allotments have low potential for yielding a positive return on public investment in management or rangeland project development.

The allotments have been grazed for numerous years. Current livestock grazing season within all allotments is shown in Table 2. The total amount of AUMs available for grazing on public lands within the allotments is 175 AUMs. The allotments consist primarily of private lands. Table 3 describes the current breakdown of ownership.

Table 3. Surface Ownership

Allotment Number	Allotment Name	Surface Ownership	Acres	Percent
16896	South Phinney Draw	Bureau of Land Management	320	5%
		Private	5,980 *	95%
		Total	**6300**	
12159	North Phinney Draw	Bureau of Land Management	558	4%
		Private	11,602*	91%
		State	640	5%
		Total	**12,800**	
17300	Farm	Bureau of Land Management	1,000	14%
		Private	5,660*	9%
		State	640	77%
		Total	**7,300**	
	Allotments (total)	Bureau of Land Management	1,878	7%
		Private	23,242	88%
		State	1,280	5%
		Total	**26,400**	

* Private acres are estimated using ArcGIS data and may not represent exact acres owned.

3.3 Soils

Ardisols and Entisols are the most common soils in the allotments. Ardisols are mixed alluvium derived from andesite, limestone, and quartzite. Ardisols are typically well drained with a low runoff classification and an Ardic moisture regime. Entisols are derived from sandy eloian material and have an excessively drained drainage class. They have a slight hazard of erosion and common land uses are for rangelands.

The principal soils (top 5) found on public lands consist of the following soil map units:
Shale outcrop complex, steep
Shingle-Kim association, valleys
Briggsdale-Renohill association
Razor-Gaynor-Samsil complex, hilly
Cushman-Briggsdale association

A complete description of these soils can be found in the, (Soil Survey Geographic (SSURGO) database for Johnson County Area, Wyoming, Southern Part , 2011) (Soil Survey Geographic (SSURGO) database for Johnson County Area, Wyoming, Northern Part, 2011) published by the US Department of Agriculture Natural Resources Conservation Service (NRCS).

3.4 Vegetation

The plant communities found on public lands within the allotments are considered to be in the 10- to 14-inch precipitation zone Northern Plains (NP) Major Land Resource Area (MLRA). The principle range site or ecological site is Loamy. Other range sites or ecological sites that can be found within the allotment include; Clayey, Sandy, Shallow Clayey, and Shallow Loamy. The primary vegetative type through the various allotments is Wyoming big sagebrush type. Vegetation found on these sites include Wyoming big sagebrush, silver sagebrush, winterfat, rabbitbrush, green needlegrass, needle and threadgrass, western wheatgrass, bluebunch wheatgrass, prairie junegrass, Sandberg bluegrass, bluegrama, asters, Indian paintbrush, clover, western yarrow, fringed sagewort, Hoods phlox, buckwheat, and numerous other grasses and forbs. Most of these sites growth occurs between May and June. According to the ecological site description (2011), as this site deteriorates species such as blue grama and big sagebrush increase and cool-season grasses such as needlegrass, needle-and-threadgrass, and rhizomatous wheatgrasses will decrease in frequency and production. Annuals bromes will commonly increase with improper management as well. A more complete description of each ecological site can be found on the NRCS's Ecological Site Description webpage.

Currently 175 AUMs are authorized within the various allotments. The AUMs were calculated using the Land Planning and Classification Report of the Public Domain Lands in the Powder and Missouri River Basin (U.S. Department Interior- Bureau of Land Management, 1956). These AUMs were calculated using light to moderate stocking rates.

3.5 Noxious Weeds and Invasive Non Native Plant Species

Invasive species and noxious weeds exist in the affected environment. The primary species in the area are scotch thistle (*Onopordum acanthium),* downy brome *(Bromus tectorum*) and to a lesser extent, Japanese brome (*Bromus Japonicus).*Downy brome, also referred to as cheatgrass, is present throughout the area but primarily exists along two track trails and other areas of disturbance. cheatgrass is an invasive nonnative annual grass that can degrade native plant communities. At this point in time cheatgrass is not a major component of the native plant communities in the allotments. If discovered in the future, noxious weeds within the allotments that pose a risk to the native vegetation on public lands will be aggressively treated using an integrated pest management (IPM) approach.

3.6 Water Resources

There is one perennial stream in the area. Powder River runs through the Farm allotment, but it is entirely on private land. Ninemile Creek, an intermittent stream is located on both South and North Phinney Draw allotments. Again no portion of the creek is on public land. All other drainages on public lands within the allotments appear to be ephemeral. There are no other water sources on public lands.

3.7 Wildlife

3.7.1 Migratory Birds, Special Status Species, Threatened and Endangered Species, and Small Mammals

The BLM conducted wildlife evaluations to assess the occurrence of selected wildlife species and their habitats, as well as to evaluate the anticipated effects associated with issuing these grazing leases on the South Phinney Draw, North Phinney Draw and Farm allotments. The evaluations included selected individual species or species groupings that are ecologically, economically, or socially important.

Evaluation methods included comparison of aerial imagery (1994 to 2009) and review of wildlife geospatial datasets (available at BFO). Datasets included occurrence information for big game, raptors, bald eagles, sage-grouse, sharp-tailed grouse, mountain plover, black-tailed prairie dogs, and sagebrush in the project area.

Wildlife habitats occurring on the allotments are results of a complex history of natural and human-caused influences. Important natural influences included short- and long-term climate variation, infrequent wildfire, and ungulate grazing; especially by bison ((Baker, 2006), (Mack & Thompson, 1982). From about 1880 to 1910, the removal of native bison, and their subsequent replacement with "vast numbers" of cattle and excessive numbers of sheep, greatly influenced the PRB, including these four allotments ((Cassity, 2007); (Patterson, 1952)). The combined impacts of cattle and sheep overstocking and climate may have initiated the ongoing epicycle of gully erosion that is evident throughout the Basin (Leopold & Miller, 1954). Enactment of the Taylor Grazing Act of 1934 repaired early range degradation and aided the recoveries of reduced wildlife populations (Patterson 1952). Appendices A.1 and A.2 summarize the affected environment relative to selected wildlife.

3.7.2 Candidate Species

This environmental assessment discusses Greater sage-grouse (sage-grouse) in detail because they are classified as a Candidate Species, currently warranted for listing under the Endangered Species Act ((U.S. Fish and Wildlife Service (USFWS), 2010) and are thus of heightened management concern in the BFO. Sage-grouse are also a Wyoming BLM sensitive species and a Wyoming Game & Fish Department (WGFD) Species of Greatest Conservation Need (SGCN). Sage-grouse habitat is present on BLM lands in the Farm, South Phinney Draw and North Phinney Draw allotments. No leks are within the Farm or South Phinney allotment. Two leks are within the North Phinney Draw allotment.

As noted in BLM WY-IM-2010-012 (2009), domestic livestock grazing has occurred in and around these allotments and "within the range of sage-grouse for over 150 years and is the most common and widespread use of rangelands in the western United States. Livestock grazing practices may affect herbaceous composition, cover, and height and has a potential to impact sagebrush habitats. WY BLM has standards and guidelines to ensure proper livestock grazing management on public lands which can help maintain healthy rangeland conditions and provide functional habitat for sage-grouse. However, poor livestock grazing practices can have long-term negative impacts on sage-grouse habitat by degrading sagebrush, meadow, and riparian communities (Bohne, Rinkes, & Kilpatirck, 2007)."

3.7.3 Big Game

Big game species occurring within the EA area include pronghorn, whitetail deer and mule deer. Elk are occasionally reported throughout the area but have not been mapped by the WGFD. The following Table 4 summarizes WGFD big game seasonal range data for the allotments.

Table 4. Big Game Seasonal habitat provided in each Allotment

Species	**South Phinney Draw**	**North Phinney Draw**	**Farm**
Whitetail deer	None	None	Yearlong
Mule deer	Winter-Yearlong	Yearlong/Winter-Yearlong	Yearlong/Winter-Yearlong
Pronghorn	Yearlong	Yearlong	Yearlong/Winter-Yearlong

Yearlong use is when a population makes general use of suitable documented habitat sites within the range on a year-round basis, but animals may leave the area under severe conditions. Winter-yearlong use is when a population or a portion of a population of animals makes general use of the documented suitable habitat sites within this range on a year-round basis, but during the winter months there is a significant influx of additional animals into the area from other seasonal ranges. In spring-summer-fall range a population or portions of a population of animals uses the documented habitats within this range from the end of the previous winter to the onset of persistent winter conditions

3.7.4 Raptors

Raptors use the all three allotments for breeding, foraging, wintering, or migration. Common raptor species frequenting the allotment include golden eagle, northern harrier, red-tailed hawk, Swainson's hawk, American kestrel, short-eared owl, and great-horned owl. Less common species that may use habitats in the area include bald eagle, rough-legged hawk, and merlin. Bald eagles occasionally roost in cottonwoods galleries in nearby riparian areas in the winter and forage throughout the area. Raptors generally prey upon small mammals, reptiles, and fish. Their survival and reproductive success depends, in part, upon the availability and abundance of these food sources.

3.8 Cultural and Historic Values

North and South Phinney Draw allotments:

The majority of the North and South Phinney Draw allotments have not been subject to class III cultural resource inventory, although the Wyoming Cultural Records Office database revealed that 7 cultural resource assessments related to oil and gas and CBM well pads, a seismic line, and a road project yielded a total of 8 archaeological sites consisting of 6 prehistoric sites, 1 historical site, and 1 dual component site. Only 1 site, the Ft. McKinney Telegraph Line (48JO3059) is NRHP-eligible however the segment within the allotment is a non-contributing portion to the NRHP resource. The remaining 7 sites are unevaluated. There may be additional unrecorded cultural sites, some of which may be NRHP-eligible, within the allotment.

Farm allotment:

The majority of the Farm allotment has not been subject to class III cultural resource inventory, although the Wyoming Cultural Records Office database revealed that 9 cultural resource assessments related to CBM PODs, pipelines, telephone lines, range improvements and a monitoring well yielded a total of 14 archaeological sites including 7 prehistoric sites, 3 historical sites, and 4 dual component sites. Four (48JO827, 48JO1604, 48JO3665-non

contributing segment, and 48JO3716) of these resources are NRHP-eligible whereas 6 sites are not eligible for inclusion in the NRHP and 4 sites remain unevaluated. There may be additional unrecorded cultural sites, some of which may be NRHP-eligible, within the allotment.

3.9 Socioeconomics

Ranching is a strong component of local society and has a historical value, as grazing occurred in the area since the late 1800s. According to the (U.S. Department of Agriculture, 2010) Agricultural Census Publication the value of sale of cattle and calves, Wyoming ranked 24th in the country and 4th for sheep and lambs. The ranking of market value cattle and calves sold ranked 1 in the state and 5th for sheep and goats. These statistics show that the ranching industry is a key component in Wyoming agriculture as well as the nation's agriculture, and the sales from the livestock are linked to the commodity value of public rangelands.

Public lands are an intricate part of the ranch operation, as it is intermingled with private and state land making it difficult to use one parcel without using the other. The grazing lease helps maintain integrity of the ranch operation and lends to supporting the cultural lifestyle of the lessee.

Public Lands contribute to the receipts of the state in which they are located through "Payment In Lieu of Taxes" by the federal government. All three of the allotments analyzed in this EA were established according to provision of Section 15 of the Taylor Grazing Act. Receipts from grazing on Section 15 lands are distributed two ways: 50% goes to the federal government for range betterment projects, and 50% is returned to the State government. The grazing fee is $1.35 per Animal Unit Month (AUM) on public land, $5.13/AUM on Wyoming State Lands, and an average of $17.60/AUM on private lands. The grazing leases described in this EA generate approximately $235 annually, of which 50% goes back to the federal government.

4.0 ENVIRONMENTAL EFFECTS

4.1 Direct and Indirect Effects

4.1.1 Livestock Grazing

Alternative I-Proposed Action/No Action Alternative

The impacts normally associated with livestock grazing are expected to continue upon issuing new leases. These impacts include nutrient cycling, physical damage to vegetation, trailing along fences, trampling and heavier grazing use around salted areas. This alternative would allow for the grazing lessees to continue to grazing on their respective grazing allotments. Livestock would continue to utilize up to 175 public AUMs annually; see Table 2 above.

Rangeland vegetation inventory (U.S. Department Interior- Bureau of Land Management, 1956) data indicates an adequate amount of forage is available to support the proposed number of livestock and for wildlife use and the effects of that use within this allotment. The new grazing lease authorizes the same numbers and kind of livestock and season of use as the expiring or expired lease. This action is not proposing any changes to grazing management. The BLM does not expect the renewal and issuance of the grazing lease to have any effects on range management. Past visit and rangeland health assessments show that the grazing management within the allotments is acceptable.

Alternative II-No Grazing Alternative

FLPMA requires the BLM to manage public lands and resources by the principles of multiple use and sustained yield and recognizes the Nation's need for domestic sources of minerals, food, timber, and fiber. FLPMA also requires the BLM—except in cases of emergency—to give two years' notification when an authorization for domestic livestock grazing is cancelled, in whole or in part, to devote the associated lands to another public purpose, including disposal.

The Buffalo RMP states as a resource management decision that *livestock grazing is allowed on all public lands in the resource area except on about 6,000 acres where it has been determined to be incompatible with other resource uses or values.*

There are no fences or natural barriers separating BLM and non-BLM lands. At this time, fencing out the public lands is not practical or cost effective. If extraordinary circumstances arise, such as the identification of an endangered plant or damageable cultural resource on the site, fencing may be a greater priority, and the BLM will address the matter in a separate analysis. If the public lands are not leased, and subsequently not fenced, any livestock use occurring thereon is unauthorized. Selecting this alternative will affect how the adjacent private and state lands are grazed because the operator must keep livestock off public lands through herding or fencing, or else be in violation of federal grazing regulations. The mixed ownership pattern in the BFO resource area makes herding difficult, in addition to the fact that herding does not ensure that public lands are not grazed. A rider needs to remain with livestock at all times. Because it is not economically feasible for the BLM to fence all federal land parcels, fences will likely be constructed on private land, fragmenting the area and making BLM unable to stipulate wire spacing to facilitate wildlife movement. Most four-strand fences on private land have a top wire of 46-48 inches with 10-12 inch wire spacing and all wires are barbed. In the absence of fences, the BLM must constantly supervise the public lands to assure they are not being grazed.

No adverse resource impacts resulting from livestock grazing have been identified which would warrant cancellation of all grazing on these allotments. The Buffalo RMP allows for adjustment of forage allocation based on an evaluation of monitoring, field observations, or other data as needed. Additionally, changes in grazing practices can be effective in mitigating impacts without a corresponding reduction in forage allocation.

4.1.2 Soils

Alternative I-Proposed Action/No Action Alternative

Grazing can exert both beneficial and detrimental effects on a soil resource. The main effects that livestock grazing has on the soil resource is removal of aboveground vegetation and hoof action, potentially leading to increased erosion, increased runoff, reduce infiltration rates and increased bulk density (compaction) (Holechek, Pieper, & Herbel, 2004, p. 379). Most of the compaction and erosion will occur where cattle tend to congregate which may include areas along trails, fence and near watering locations. This compaction leads to lowered rates of water infiltration thus leading to high rates of surface runoff and greater soil erosion.

On a positive standpoint, large quantities of dung and urine are deposited throughout the allotments adding nutrients and organic matter to the soil (McNaughton, 1979). Hoof action can benefit the soil resource by improving nutrient cycling by incorporating mulch into soil surface where it can be broken down more quickly by soil organisms (Holechek, Pieper, & Herbel, 2004, p. 379). Livestock grazing can loosen the soil surface during drying periods, remove excess

vegetation that may negatively affect net carbohydrate fixation and increase water transpiration rates, and speed up the development of humus in the soil (Holechek, 1981).

Because no changes in the current management are being implemented under the proposed action/no action alternative, impacts to the soil resource would remain the same and no changes from the current state of the resource are expected.

Alternative II-No Grazing Alternative

With the removal of grazing from the allotments, forage would not be removed by livestock. Standing vegetation and litter would increase. The increase in cover may reduce runoff and erosion. With the removal of livestock from the allotment a decrease in compaction and increase infiltration would be anticipated (Pluhar, Knight, & Heitschmidt, 1987).

Nutrient cycle in the allotment would likely change. Cattle can increase soil nutrients by depositing excrement on the soil surface. But, with improper management, they may decrease nutrients by consuming and permanently removing plants that put nutrients into the soil system.

4.1.3 Vegetation

Alternative I-Proposed Action/No Action Alternative

Grazing's effects on vegetation varies greatly depending on factors including but not limited to: resistance to grazing, genetic potential, growth promoting features, grazing intensity, life stage of plant, and environmental constraints (Holechek, Pieper, & Herbel, 2004, pp. 123-142)). Livestock grazing can have both beneficial and detrimental effects on vegetation depending on the various factors described by Holechek. Beneficial impacts may include but not limited to: grow stimulation from grazing ruminants saliva (McNaughton, 1979), trampling of seed into the ground (Holechek, 1981), reducing excess accumulation of standing dead vegetation and mulch that may chemically and physically inhibit new plant growth (Holechek, 1981), and reducing transpiration losses (Holechek, Baker, Boren, & Galt, 2006). Some detrimental impacts livestock grazing may have on vegetation include but are not limited to; changes in species composition in upland areas (Brock & Green, 2003), tillering may be reduced (Belsky, 1986), modifying the growth form of plants by consuming terminal buds thereby promoting lateral branching (Fleischner, 1994), and disruption of ecological succession (Fleischner, 1994).

Under the proposed actions/no action alternative, approximately 175 AUMs will be removed by livestock annually. Most studies showed that with light to moderate stocking rates, rangelands would not be compromised. The AUMs authorized are based on a light to moderate stock rate. Therefore, as long as the total number of permitted AUM's consumed don't exceed the authorized use for the allotments; the impacts associated with renewing the grazing leases should not have an undesirable effect on vegetation.

Alternative II-No Grazing Alternative

The no grazing alternative would eliminate the beneficial and detrimental impacts of grazing. It is likely with the removal of grazing that litter would increase, thus increasing fire potential in the allotments. More vegetation would be available for wildlife and ecosystem function. However, Patton et. al. (2007), found that production does not increase with the removal of livestock grazing. Other studies have also found that removal of grazing can lead to an increase in shrub cover, and a decrease in species richness and plant diversity (Manier & Hobbs, 2007).

4.1.4 Noxious Weeds and Invasive Non Native Plant Species

Alternative I-Proposed Action/No Action Alternative

Livestock can potentially transport Noxious Weeds and Invasive Non Native Plant Species through their coat and feet as well as in their digestive tract. Livestock may carry these undesirable plants that may already exist on the allotment or from other pastures they may encounter throughout their life. Livestock grazing can increase the presence of noxious weeds by over grazing (DiTomaso, 2000); this is the primary cause of unwanted species invasion (Holechek, Pieper, & Herbel, 2004, p. 508).

Since many roads and trails occur throughout the allotments, and recreational opportunities exist in the area, new weed introductions are likely to occur on a regular basis. These infestations are monitored annually by the BLM, county weed and west agency, and grazing lessee to determine if management changes are needed to control the infestations.

Because current and proposed management does not exceed recommended grazing levels and no management concerns occur at this time, it is anticipated that under the proposed action no increases in noxious weeds or invasive non-native plant species will occur.

Alternative II-No Grazing Alternative

Removing livestock grazing from the public land can promote growth—and potential overgrowth—of perennial grasses and forbs, thus crowding out or reducing the potential for invasion of noxious and/or invasive species. Yet, the overgrowth of vegetation increases the availability of fine fuels, increasing the risk and intensity of wildfire, allowing opportunistic noxious and invasive species to colonize the public lands. Cooperative weed control efforts could discourage overgrowth of vegetation and decrease the fire return interval.

4.1.5 Water Resources

Alternative I-Proposed Action/No Action Alternative

Livestock area attracted to riparian areas by environmental and nutritional factors and may use riparian vegetation disproportionately more than adjacent upland (Gillen, Krueger, & Miller, 1985), (Howery, Provenza, Banner, & Scott, 1996). This attraction can lead to higher use to the riparian and riparian like areas thus, leading to a decline in streambank stability, a decline in the cover/stream bank class with concomitant increase in the uncovered/unstable class, increase in soil erosion (McInnis & McLver, 2001), removal of wood vegetation, soil compaction, and reduced water quality (Parsons, Momont, Delcurto, McInnis , & Porath, 2003). Although uncontrolled livestock grazing can result in watershed destruction in certain areas, controlled grazing is no detrimental to water quality and may increase water quantity (Holechek, 1981).

No major degradation problems have been identified under the past and current management of livestock. Therefore, impacts to water resources are expected to remain unchanged with respect to the proposed action/no action alternative.

Alternative II-No Grazing Alternative

The removal of grazing would improve/maintain riparian health. Less utilization will occur on riparian plants, thus reducing trampling and hoof shearing along the green line of riparian areas. Total vascular vegetation, shrub, and graminoid canopy cover would increase with the exclusion of livestock (Schulz & Leininger, 1990).

4.1.6 Wildlife

4.1.6.1 Migratory Birds, Special Status Species, Threatened and Endangered Species, and Small Mammals

Alternative I-Proposed Action/No Action Alternative

(See Tables A.1 and A.2 in Appendix A)

The USFWS issued a block clearance for the PRB for the endangered black-footed ferret. Alternative B would have "***no effect***" on black-footed-ferrets. The proposed action will have "***no effect***" on Ute ladies'-tresses orchid because suitable habitat for this species is not present in the allotments.

Alternative II-No Grazing Alternative

The U.S. Fish and Wildlife Service has issued a block clearance for the PRB for the endangered black-footed ferret. Alternative A would have "***no effect***" on black-footed-ferrets.

If grazing is removed from the allotment, there will be "***no effect***" on Ute ladies'-tresses orchid, because there is no suitable habitat for this species in the allotments. Cancelling grazing may have a negative impact burrowing owls and black-tailed prairie dogs by reducing the number of grazed areas, which provide preferred habitat for these species.

4.1.6.2 Candidate Species

Alternative I-Proposed Action/No Action Alternative

The proposed action "will impact" GSG habitat. Livestock grazing can benefit or degrade GSG habitat on the allotment, depending on the timing, stocking rate, and habitat affected. Fall grazing may favor upland forb production, and spring grazing may be used to remove herbaceous cover and make forbs more accessible (Smith, Malechek, & Fulgham, 1979), (Fulgham, Smith, & Malechek, 1982). Spring and early summer grazing may help control invasive weeds and remove woody plants, thereby decreasing the risk of wildfire that could remove large areas of habitat (Mosley, 1996), (Olson & Wallander, 2001), (Merritt, Prosser, Sedivec, & Bangsund, 2001), (Riggs & Urness, 1989).

Excessive or poorly managed grazing causes degradation of sagebrush ecosystems and thus GSG habitat (Bureau of Land Management, 2002). Inappropriate grazing management in uplands can reduce perennial grasses and forbs while favoring annual grasses and increasing sagebrush cover (Branson, 1985), (Tisdale, 1994), (Beck & Mitchell, 2000), (Bork, West, & Walker, 1998). This may impact GSG, because they rely on perennial grasses for escape cover and residual herbaceous cover for screening cover in nesting habitat. Inappropriate grazing that damages meadows and riparian areas can harm sage-grouse, because these areas are critical for GSG in late summer. Livestock may occasionally trample GSG nests or cause GSG to abandon their nests (Call, 1979), (Patterson, 1952).

Livestock grazing has occurred historically on these allotments and the BLM expects no additional impacts, other than those that have already taken place as a result of long-term use, from implementation of the proposed action. Continuing to manage for the Wyoming Standards for Rangeland Health will promote GSG habitat viability.

The stocking rate of 10.7 acres per AUM on the allotments is derived from the production potential of the land based on topographic features, soil types, vegetative characteristics, and

annual precipitation. Livestock stocking rates in the BFO are designed to meet the six standards for healthy public rangelands (see Section 1.4.1). Particularly applicable to GSG is Standard 4, which requires that rangelands be capable of sustaining viable populations and a diversity of native plant and animal species. Because staffing and workload issues limit S&G assessment on "C" category allotments, S&Gs have not been assessed on the South Phinney Draw, North Phinney Draw or Farm allotments. However, an assessment of S&Gs was performed in 2012 on the Reno Draw allotment, which is located adjacent to the South Phinney Draw and North Phinney Draw allotments, and has similar habitat and vegetative features. The assessment found the Reno Draw allotment in good condition and meeting all standards. Based on this parallel assessment, the BLM expects the South Phinney Draw, North Phinney Draw, and Farm allotments to be in a similar condition.

Alternative II-No Grazing Alternative

Under the no grazing alternative, no benefits to GSG habitat as a result of grazing management would occur. Excluding livestock does not necessarily cause an area to return to its pre-grazing ecological condition or guarantee improvements in species richness, diversity, or vegetative production (Manier & Hobbs, 2007). Some habitats reach a threshold where livestock exclusion does not have an effect on the current trend (Wambolt & Payne, 1986), (Sanders & Both, 1983). Other research shows that rest from livestock grazing in Wyoming big sagebrush habitats may improve understory production while decreasing sagebrush cover (Wambolt & Payne, 1986). On Wyoming big sagebrush sites with dense sagebrush and annual grass understory, eliminating livestock grazing can increase fire risk which results in habitat degradation (Peters & Bunting, 1994), (West , 1999).

4.1.6.3 Big Game

Alternative I-Proposed Action/No Action Alternative

By managing land to meet Rangeland Health Standards and improving overall rangeland condition, forage for elk, deer and pronghorn will improve.

Forage resources on winter ranges typically limit mule deer populations (Clements & Young, 1997). Livestock grazing tends to favor shrubs over grasses, and thus may provide more desirable winter browse conditions on the allotments (Austin & Urness, 1998), (Austin, Urness, & Riggs, 1986), (Smith A. D., 1949).

Livestock grazing may enhance big game forage by reducing unpalatable standing dead material (Short & Knight, 2003). Big game and cattle may compete for forage on a minor level. There is very little dietary overlap between cattle, pronghorn, and deer during spring and early summer, since cattle feed primarily on grasses while pronghorn and deer select mostly forbs and some grasses. Cattle begin to use more forbs in late summer and fall, potentially increasing competition. Pronghorn and deer increase the amount of shrubs in their diet in fall and winter, thus reducing competition during those seasons (Anderson & McCuistion, 2008).

The fences on the allotment pose a hazard to deer and pronghorn. In the BFO resource area, fences have caught and trapped deer and antelope. Modifying fence in areas used by cattle to a more wildlife "safe" design with height under 48 inches and the bottom wire 16 inches from the ground may reduce this hazard. Fences in this allotment are located primarily on private land and are not subject to BLM management.

Proper grazing management can improve winter forage conditions for big game (Anderson & Scherzinger, 1975). Livestock grazing has occurred historically on these allotments and the BLM expects no additional impacts from implementation of the proposed action.

Alternative II-No Grazing Alternative
Under the no grazing alternative, winter browse conditions for big game would not improve. Encroaching herbaceous species may ultimately out-compete shrub species, resulting in a reduction in quality of big game winter range (Smith A. D., 1949). Additionally, livestock would not remove unpalatable standing dead material, resulting in unimproved forage.

4.1.6.4 Raptors
Alternative I-Proposed Action/No Action Alternative
Results from research and monitoring studies suggest that livestock grazing is likely to impact some species of raptors while favoring others (Bock, Saab, Rich, & Dobkin, 1993). Livestock grazing may cause the direct impacts of nest and egg destruction of ground-nesting species due to trampling by livestock, or nest abandonment by birds intolerant of disturbance. Grazing management practices can change vegetation composition, leading to the indirect impacts of changing prey composition and availability. Continued livestock grazing will favor those species that benefit from the alterations in habitat that occur in response to grazing (Bock, Saab, Rich, & Dobkin, 1993).

Table 5 lists grassland and shrub-steppe dependent raptor species not discussed elsewhere in this EA that Bock et al (1993) reported as positively or negatively impacted by livestock grazing.

Table 5. Raptor species impacted by livestock grazing

Response	Species	Habitat
Negative	Northern harrier	Grassland, Shrub-steppe
	Red-tailed hawk	Shrub-steppe
	Short-eared owl	Grassland, Shrub-steppe
	Swainson's hawk	Shrub-steppe
Positive	Golden eagle	Shrub-steppe

A recent study to assess the impacts of rotational cattle grazing on rodents and raptors suggests that raptor use and prey availability can be affected by livestock grazing. In comparisons between grazed and ungrazed areas, raptor use declined by 15% in the grazed area, but increased by 63% on the ungrazed area. Rodent abundance declined and remained lower in the grazed area for the duration of the study (Johnson & Horn, 2008).

Livestock grazing has occurred historically on this allotment and the BLM expects no additional impacts, other than those that have already taken place as a result of long-term use, from implementation of the proposed action. Appropriate grazing management could maintain or improve nesting habitats for ground-nesting raptor species and improve prey abundance and availability by enhancing habitat conditions.

Alternative II-No Grazing Alternative
Under the no-grazing alternative, occasional trampling of nests by livestock would not occur. Livestock grazing would not alter habitats, thus benefitting some raptor species while negatively affecting others (Bock, Saab, Rich, & Dobkin, 1993).

4.1.7 Cultural and Historic Values

Alternative I-Proposed Action/No Action Alternative

Any activity that removes vegetation or leads to soil erosion can cause impacts to cultural resources. Livestock concentration areas (such as those that form near water sources, supplemental feeding areas, fence corners, etc.) and livestock trail formation may result in impacts to cultural resources. According to the State Protocol Agreement between the Wyoming BLM and the Wyoming SHPO, grazing lease renewals that do not include seasonal grazing changes or changes in livestock types are exempt from case-by-case review. As per Appendix B item #27 and following section IV (A) (3) of the Wyoming State Protocol, on 06/06/13 the Bureau electronically notified the Wyoming State Historic Preservation Office (SHPO) of these grazing lease renewals.

Alternative II-No Grazing Alternative

The absence of grazing will not result in impacts to cultural resources.

4.1.8 Socioeconomics

Alternative I-Proposed Action/No Action Alternative

The proposed action would allow the grazing lessees to continue their ranch operations. They will be able to continue to contribute to the Wyoming Agriculture economy benefiting not only the state of Wyoming, but also Johnson County and various other local governments. The federal government would continue to collect grazing fees from the grazing lessees and this commodity use would continue to generate revenues for the Federal government to provide money for range betterment projects and revenue for the Wyoming state government.

Alternative II-No Grazing Alternative

The removal of grazing would increase the financial stress on both the grazing lessee and the adjacent land owners as the federal land would have to be fenced from private land to ensure no grazing occurs on federal land. The landowners rely on the public lands for their operation and with the removal of grazing the landowner would have to find other means to manage their operation either through sale of their livestock or renting much more expensive private lands.

4.2 Cumulative Effects

The CEQ regulations define cumulative effects as "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such actions" (40 CFR 1508.7). It is anticipated that implementation of any of the alternatives in combination with the past, present and reasonably foreseeable actions would not result in any measurable cumulative impacts.

Past, Present and Reasonably Foreseeable Actions

Past, present and reasonably foreseeable actions in all cumulative effects affected areas (CEAA) that may contribute to cumulative effect to various resources present include livestock grazing, hunting, recreational activities, fire, oil/ gas activities, and ROWs. It should be noted that result of the impacts of the past and present actions are described in Section 3 above. With respect past and present actions on GSG and habitat fragmentation see Section 4.2.5 Candidate.

Livestock grazing occurred in the area for over 100 years. Approximately 175 AUMs are authorized annually between all the allotments. No changes to authorized AUMs, season of use, and kind/number of livestock are anticipated within the allotments. Livestock grazing will likely continue unless resources conditions or rangeland health warrants otherwise. Additional actions associate with livestock grazing include: off-high way vehicle (OHV) travel, feeding of mineral and protein supplements, and hauling and trailing livestock.

Hunting and recreational activities have occurred within the allotments for many years and still is a big part of the land uses within the area. These uses are expected to continue and no changes are expected in these land uses.

No recorded wildfires or prescribed burns have been rescored in the project area since 1990. There are no planed prescribed burns in the project area. Fire occurred in the area over many years. Fire regime is the role fire would play across the land scape. The project area is in a Fire Regime Class II, in which the fire frequency is high severity (stand replacement of greater than 75% of the dominant over story vegetation being replaced). Fire Regime Condition Class (FRCC) determines how similar a landscape is to its natural or historical regime. The project area is in the FRCC of 2 which defines the area as having similar key ecosystem components including vegetation and disturbances such as fire. Wildfires are likely to occur in future.

The BLM permits federal fluid and solid mineral development in the PRB, including federal minerals below private (split estate) surface. The BLM prepares analysis prior to federal mineral development. In general, companies submit proposals in the form of PODs that may consist of 1 to 200 wells. Mineral development is common in the area and numerous PODs are present. Although permitting of oil and gas wells decreased from the past in the PRB it is likely this activity will continue, thus contributing to the cumulative impacts of the alternatives. Currently, the Farm allotment lies within 2 approved PODs; Big Bend operated by North Finn and Albacore operated by Yates. An analysis specific to each POD analyzes the environmental impacts from federal mineral development, and this EA incorporates those by reference using the aggregate effects analysis approach; see Table A.3

ROWs approved in the allotments and likely will continue to be approved include: water pipelines, power lines, roads, and other federal ROWs. Maintenance and construction of these ROWs create surface disturbance that would contribute to the cumulative impacts to various resources.

4.2.1 Livestock Grazing

Geographic Scope and Timeframe

The cumulative effects affected area (CEAA) for livestock grazing is the allotment boundaries. The CEAA was selected because the scope of the proposed action and alternatives is identified as the area within the allotment boundaries. The direct impacts are anticipated to last for the life of the grazing lease (10 years). While the indirect and long term impacts may last longer.

Incremental Effect from the Proposed Action

With the addition of grazing to the past, present and reasonably foreseeable actions the incremental loss of forage available for livestock would occur. As long as mitigation and monitoring techniques are implemented to ensure new roads and trails from recreationalists and

hunters are not made and fires are suppressed, the loss of vegetation available for livestock should be negligible. Additionally, oil/gas/ROWs will be permitted, thus decreasing the amount of forage available for grazing. But with best management practices (BMPs) being implemented, this should be negligible.

Incremental Effect from the No Grazing Alternative
Less surface disturbance would occur with the removal of grazing. The incremental impacts when compared to the proposed action will be less.

4.2.2 Soils

Geographic Scope and Timeframe
The cumulative effects affected area (CEAA) for soils is the grazing allotment boundaries. The CEAA was selected because the scope of the proposed action and alternatives has been identified as the area within the allotment boundaries. The direct impacts are anticipated to last for the life of the grazing lease (10 years). While the indirect and long term impacts may last longer.

Incremental Effect from the Proposed Action
The proposed action when added to the reasonably foreseeable actions should be minimal as Rangeland Health objectives are used in livestock grazing management, hunters and recreationalist will be monitored for land abuse, fire suppression will mitigate the severity of the impacts, and BMPs will be used for new oil, gas and ROW activities, . The incremental effects may include soil erosion and soil compaction along new trials made from livestock, roads and trails used by hunting and recreationalist, new oil and gas roads, and areas where fires occur. Severity of these impacts would be dependent on the amount of hunter and recreationalist use on the allotments, number of oil/gas/ROWs permitted, and the intensity/size of the wildfires.

Incremental Effect from the No Grazing Alternative
Less surface disturbance would occur with the removal of grazing. The incremental impacts when compared to the proposed action will be less.

4.2.3 Vegetation, Noxious Weeds and Invasive Plant Species

Geographic Scope and Timeframe
The cumulative effects affected area (CEAA) for vegetation, noxious weeds, and invasive plants is the grazing allotment boundaries. The CEAA was selected because the scope of the proposed action and alternatives has been identified as the area within the allotment boundaries. The direct impacts are anticipated to last for the life of the grazing lease (10 years). While the indirect and long term impacts may last longer.

Incremental Effect from the Proposed Action
The proposed action when added to the reasonably foreseeable actions should be minimal as Rangeland Health objectives are used in livestock grazing management, hunters and recreationalist will be monitored for land abuse, fire suppression will mitigate the severity of the impacts, and BMPs will be used for new oil, gas and ROW activities. The incremental effects may include forage loss and introduction of non-native species along new trials made from livestock, roads and trails used by hunting and recreationalist, new oil and gas roads, and areas where fires occur. Severity of these impacts would be dependent on the amount of hunter and

recreationalist use on the allotments, number of oil/gas/ROWs permitted, and the intensity/size of the wildfires.

Incremental Effect from the No Grazing Alternative
Less surface disturbance would occur with the removal of grazing. The incremental impacts when compared to the proposed action will be less.

4.2.4 Water Resources

Geographic Scope and Timeframe
The cumulative effects affected area (CEAA) for water resources are the grazing allotments' boundaries. The CEAA was selected because the scope of the proposed action and alternatives has been identified as the area in the allotments' boundaries. The direct impacts are anticipated to last for the life of the grazing lease (10 years). Indirect and long term impacts may last longer.

Incremental Effect from the Proposed Action
The proposal in combination with any past, present, and reasonably foreseeable actions may increase the possibility for decreased water quality and quantity. This can be from loss of soil into the riparian areas. The incremental impacts should be minimal as rangeland health objectives are used in livestock grazing management, hunters and recreationalist will be monitored for land abuse, fire suppression will mitigate the severity of the impacts, and BMPs will be used for new oil, gas and ROW activities.

Incremental Effect from the No Grazing Alternative
Less surface disturbance would occur with the removal of grazing. The incremental impacts when compared to the proposed action will be less.

4.2.5 Wildlife (Migratory Birds, Special Status Species, Threatened and Endangered Species, Small Mammals, Big Game, Raptors)

Geographic Scope and Timeframe For Migratory Birds, Special Status Species, Threatened and Endangered Species, and Small Mammals
The cumulative effects affected area (CEAA) is the Crazy Women Creek watershed boundary. Many of the species within the watershed are contained within the watershed. Migratory species may travel outside the boundary but most of the life cycle likely occurs within the CEAA. The direct impacts are anticipated to last for the life of the grazing lease (10 years). While the indirect and long term impacts may last longer.

Geographic Scope and Timeframe for Big Game and/or Raptors
The cumulative effects affected area (CEAA) for is the entire range the species may utilize in their life cycle within the vicinity of the allotments. The direct impacts are anticipated to last for the life of the grazing lease (10 years). While the indirect and long term impacts may last longer.

Incremental Effect from the Proposed Action on Wildlife (Migratory Birds, Special Status Species, Threatened and Endangered Species, Small Mammals, Big Game, Raptors)
Incremental impacts from the proposed action when added to the past, present and reasonably foreseeable actions may result in disruption of species habitat through the loss of vegetation and habitat fragmentation. Loss of vegetation would occur from livestock grazing, new roads (recreation/hunting/oil and gas/ROWs), and wild fire. Habitat fragmentation would result from

vertical intrusions associated with development and new roads associated with oil, gas, ROWs, and recreation activities. Additionally, the spread of noxious and invasive weeds from the actions may impact habitat quality by changing the native plant community, plant production, plant diversity, and ecological health. The incremental impacts should be minimal as Rangeland Health objectives are used in livestock grazing management, hunters and recreationalist will be monitored for land abuse, fire suppression will mitigate the severity of the impacts, and BMPs will be used for new oil, gas and ROW activities

Incremental Effect from the No Grazing Alternative on Wildlife (Migratory Birds, Special Status Species, Threatened and Endangered Species, Small Mammals, Big Game, Raptors)
Less surface disturbance would occur with the removal of grazing. The incremental impacts when compared to the proposed action will be less.

4.2.6 Candidate Species (Greater Sage-Grouse (GSG))

Geographic Scope and Timeframe
The cumulative effects affected area (CEAA) for Candidate Species (GSG), is any area within a 4 mile radius of GSG leks within the allotments and leks that have a 4 mile buffer within any of the allotments. The direct impacts are anticipated to last for the life of the grazing lease (10 years). While the indirect and long term impacts may last longer.

Incremental Effect from the Proposed Action
Incremental impacts from the proposed action when added to the past, present and reasonably foreseeable action may result in habitat alteration of Candidate Species, specifically GSG. These impacts include loss of forage, cover, and habitat. The actions may also disturb mating and brood rearing that is vital to any special status species known to occur in the area. Loss of vegetation would occur from livestock grazing, new roads (recreation/hunting/oil and gas/ROWs), and wild fire. Habitat fragmentation would result from vertical intrusions associated with development and new roads associated with oil, gas, ROWs, and recreation activities.

The GSG population in northeast Wyoming is exhibiting a steady long term downward trend (U.S. Fish and Wildlife Service (USFWS), 2010), (Wyoming Game and Fish Department (WGFD) , 2011a). The figure below illustrates a ten-year cycle of periodic highs and lows. Each subsequent population peak is lower than the previous peak. Long-term harvest trends are similar to that of leks attendance (Wyoming Game and Fish Department (WGFD), 2011b). Habitat fragmentation (resulting from oil and gas development) and West Nile virus are the primary contributors to this decline (Taylor, Naugle, & Mills, 2012), (U.S. Fish and Wildlife Service (USFWS), 2010).

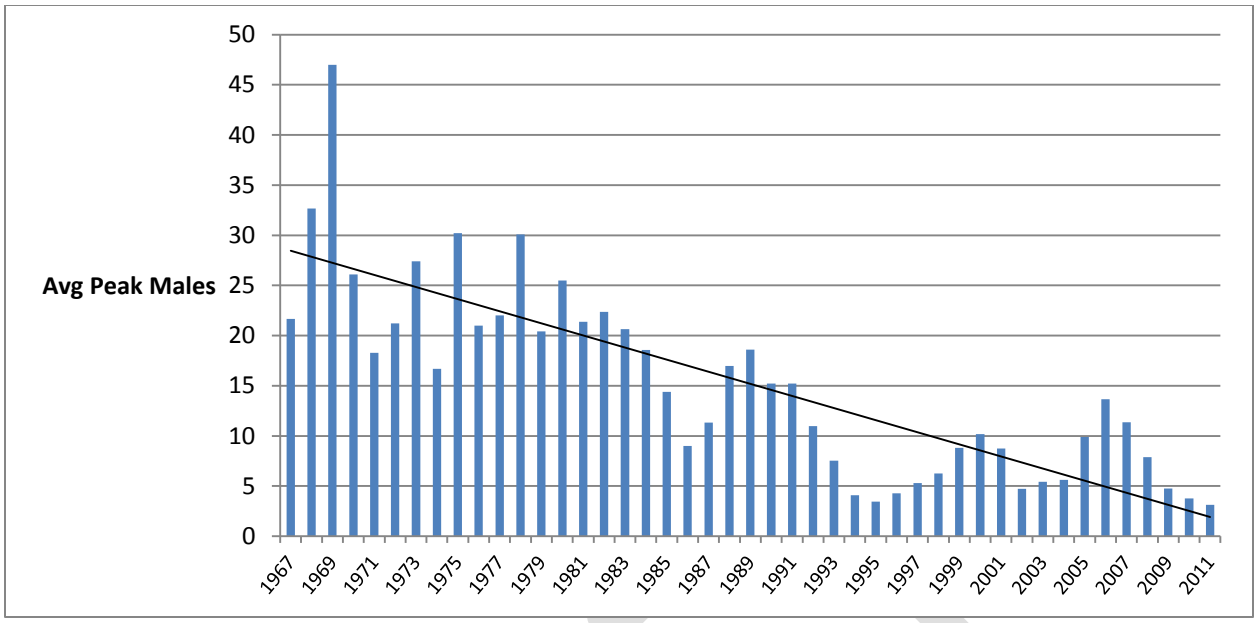

Figure 1. Average peak number of male sage-grouse per active leks and trend line within the BFO 1967-2009

Additionally, the spread of noxious and invasive weeds from the actions may impact habitat quality by changing the native plant community, plant production, plant diversity, and ecological health. The incremental impacts should be minimal as Rangeland Health objectives are used in livestock grazing management, hunters and recreationalist will be monitored for land abuse, fire suppression will mitigate the severity of the impacts, and BMPs will be used for new oil, gas and ROW activities

Incremental Effect from the No Grazing Alternative

Less surface disturbance would occur with the removal of grazing. The incremental impacts when compared to the proposed action will be less.

4.2.7 Cultural and Historic Values/Paleontology

Geographic Scope and Timeframe

The cumulative effects affected area (CEAA) for cultural and historic values/paleontology is the grazing allotment boundaries. The CEAA was selected because the scope of the proposed action and alternatives has been identified as the area within the allotment boundaries. The direct impacts are anticipated to last for the life of the grazing lease (10 years). While the indirect and long term impacts may last longer.

Incremental Effect from the Proposed Actions

Potential incremental impacts as a result of the proposed action in combination with the past, present and reasonably foreseeable actions may include disturbance to undocumented and document cultural resources. The incremental impacts should be minimal as Rangeland Health objectives are used in livestock grazing management, hunters and recreationalist will be

monitored for land abuse, fire suppression will mitigate the severity of the impacts, and BMPs will be used for new oil, gas and ROW activities.

Incremental Effect from the No Grazing Alternative
Less surface disturbance would occur with the removal of grazing. The incremental impacts when compared to the proposed action will be less.

4.2.8 Socioeconomics

Geographic Scope and Timeframe
The cumulative effects affected area (CEAA) for Socioeconomics is the Wyoming economy, and the BLM revenue from multiple use actions. The direct impacts are anticipated to last for the life of the grazing lease (10 years). While the indirect and long term impacts may last longer.

Incremental Effect from the Proposed Action
The most common incremental impact to socioeconomics would be the continued revenue generated from grazing receipts and other permitted actions and positive impact is has on the Wyoming economy would occur.

Incremental Effect from the No Grazing Alternative
The loss of livestock grazing would reduce the money generated from permitted activities on BLM lands. This would impact the Wyoming economy in a negative way as livestock grazing and money generated from it is a large part of the Wyoming economy.

4.4 Mitigation/Residual Impacts/Monitoring

Additional mitigation measures are not needed. All measures needed to mitigate the impacts of the proposed action are placed or incorporated as "design features" in the proposed action. The impacts of any mitigations measures are analyzed in chapter 4 (Environmental Effects) of this document.

As per 40 CFR 1505.2(c), monitoring to ensure the proposed action and any design/mitigation features will occur. When time and priorities permit, this monitoring will follow BLM policy and management guidelines that may include supervisions and trend monitoring

5.0 TRIBES, INDIVIDUALS, or AGENCIES CONSULTED

James Eklund	BLM Grazing Lessee for the South Phinney Draw Allotment
Camino and Sons	BLM Grazing Lessee for the North Phinney Draw Allotment
Hess Ranch LLC	Base Property Owner for the South and North Draw Allotments
Meike Ranch	BLM Grazing Lessee for the Farm Allotment
Dave Spencer	Wyoming Business Council - Northeast Regional Director
David Waterstreet	Wyoming DEQ Water Quality Division
Jerimiah Rieman	Wyoming Governor's Policy Office
Gwen Booth	Wyoming Game and Fish Department
Jim Logan	Wyoming Livestock Board
Judy Wolf	Wyoming State Historic Preservation Office
Lorraine Fresquez	Wyoming Office of State Land and Investments
Mark Conrad	Wyoming DEQ Water Quality Division

Michelle MacDonald	Wyoming Department of Agriculture
Mary Flanderka	Wyoming Game and Fish Department
Natalya Lenz	Wyoming State Historic Preservation Office
Renae Krakow	Wyoming Livestock Board
Richard Currit	Wyoming State Historic Preservation Office
Shawn Reese	Wyoming Governor's Policy Office
Susan Child	Wyoming Office of State Lands and Investments
Carol Bilbrough	Wyoming DEG Land Quality Division

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Name	Title	Duty	Name	Title	Duty
Doug Tingwall	Archeologist	Cultural Resources	Scott Jawors	Wildlife Biologist	Wildlife
Chris Durham	Asst. Field Manager	Resources	John Kelley	Coordinator	NEPA Planning

7.0 Works Cited

Anderson, A., & McCuistion, K. C. (2008). Evaluating Strategies for Ranching in the 21st Century: Successfully Managing Rangeland for Wildlife and Livestock. *Rangelands, 30*(2), 8-14.

Anderson, E., & Scherzinger, R. J. (1975). Improving Quality of Winter Forage for Elk by Cattle Grazing. *Journal of Range Management, 28*(2), 120-125.

Austin, D. D., & Urness, P. I. (1998). Vegetal Change on a Northern Utah Foothill Range in the Absence of Livestock Grazing Between 1948 and 1982. *Great Basin Naturalist, 58*, 188-191.

Austin, D. D., Urness, P. J., & Riggs, R. A. (1986). Vegetal Change in the Absence of Livestock Grazing, Mountain Brush Zone, Utah. *Journal of Rangeland Management, 39*(6), 514-517.

Baker, W. L. (2006). Fire and Restoration of Sagebrush Ecosystems. *Wildlife Society Bulletin, 34*(1), 177-185.

Beck, J. L., & Mitchell, D. L. (2000). Influences of Livestock Grazing on Sage Grouse Habitat. *Wildlife Society Bulletin, 28*(4), 993-1002.

Belsky, A. J. (1986). Does Herbivory Benefit Plants? A Review of the Evidence. *The American Naturalist, 127*(6), 870-892.

Bock, C. D., Saab, V. A., Rich, T. D., & Dobkin, D. S. (1993). Effects of Livestock Grazing on Neotropical Migratory Landbirds in Western North America. In D. M. Finch, & W. Stangel, *Status and Management of Neotropical Migratory Birds(General Technical Report RM-229)* (pp. 296-309). Denver: U.S. Departmetn of Agriculature Forest Service.

Bohne, J., Rinkes, T., & Kilpatirck, S. (2007). *Sage-Grouse Habitat Management Guidelines for Wyoming.* Cheyenne: Wyoming Game and Fish Department.

Bork, E. W., West, N. E., & Walker, J. W. (1998). Cover Components on Long-Term Seasonal Sheep Grazing Treatments in Three-Tip Sagebrush Steppe. *Journal of Range Management, 51*(3), 293-300.

Branson, F. A. (1985). *Vegetation Changes on Western Slopes(Range Monograph Number 2).* Denver: The Society for Range Management.

Brock, J. H., & Green, D. M. (2003). Impacts of Livestock Grazing, Mining, Recreation, Roads, and Other Land Uses on Watershed Resources. *Journal of the Arizona-Nevada Academy of Science, 35*(1), 11-22.

Bureau of Land Management. (1999). *Instruction Memorandum 2000-022, Change 1 Compliance with the National Enviromental Policy Act(NEPA) -- Addressing Alternatives for Livestock Grazing Permit Renewals.* Washington D.C.: Bureau of Land Managment .

Bureau of Land Management. (2002). *Instruction Memorandum No. WY-IM-2001-147, Change 1: Framework Assessment of Sage-grouse Habitat on Public Lands in Wyoming.* Cheyenne: Bureau of Land Management, Wyoming State Office.

Bureau of Land Management. (2009). *Instruction Memorandum BLM-WY-IM-2010-12 Greater Sage-Grouse Habitat Management Policy on Wayoming BLM Administered Public Lands including the Federal Mineral Estate.* Cheyenne: Bureau of Land Management Wyoming State Office.

Bureau of Land Management. (2012). *Instruction Memorandum WY-IM-2012-019 Greater Sage Grouse Habitat Management Policy on Wyoming BLM Administered Public Land Including Mineral Estate.* Cheyenne: Bureau of Land Management Wyoming State Office.

Call, M. W. (1979). *Habitat Requirements and Management Recommendation for Sage-grouse(Technical Note 330).* Denver: U.S. Department of Interior-Bureau of Land Management Denver Service Center.

Cassity, M. (2007). *Stock Raising, Ranching, and Homsteading in the Powder River Basin Historic Context Study.* Broken Arrow: Historical Research and Photograpy.

Chapman, S. S., Bryce, S. A., Omernik, J. M., Despain, D. G., ZumBerge, J., & Conrad, M. (2004). *Ecoregions of Wyoming (color poster with map, descriptive text, summary tables, and photographs)(Map Scale 1;1,400,000).* Reston, Virginia: U.S. Geological Survey.

Clements, C. D., & Young, J. A. (1997). A Viewpoint: Rangeland Health and Mule Deer Habitat. *Journal of Range Management, 50*(2), 129-138.

DiTomaso, J. M. (2000). Invasive Weeds in Rangelands: Species, Impacts, and Management. *Weed Science, 48*(2), 255-265.

Fleischner, T. L. (1994). Ecological Costs of Livestock Grazing in Western North America. *Conservation Biology, 8*(3), 629-644.

Fulgham, K. O., Smith, M. A., & Malechek, J. C. (1982). A Compatible Grazing Relationship Can Exist Between Domestic Sheep and Mule Deer. In J. M. Peek, & P. D. Dalke, *Proceedings of the Wildlife-Livestock Relationships Symposium* (pp. 458-478). Moscow: Wildlife and Range Experiment Station University of Idaho.

Gillen, R. L., Krueger, W. C., & Miller, R. F. (1985). Cattle Use of Riparian Meadows in the Blue Mountains of Northeastern Oregon. *Journal of Range Management, 38*(3), 205-209.

Harniss, R. O., & Wright, H. A. (1982). Summer Grazing of Sagebrush-Grass Range by Sheep. *Journal of Range Management, 35*, 13-17.

Holechek, J. L. (1981). Livestock Grazing on Public Lands: A Viewpoint. *Journal of Range Management, 34*(3), 251-254.

Holechek, J. L., Baker, T. T., Boren, J. C., & Galt, D. (2006). Grazing Impacts on Rangeland Vegetation: What We Have Learned. *Rangelands, 28*(1), 7-13.

Holechek, J. L., Pieper, R. D., & Herbel, C. H. (2004). *Range Management: Principles and Practices* (5th ed.). Upper Saddle River, New Jersey: Prentice-Hall.

Howery, L. D., Provenza, F. D., Banner, R. E., & Scott, C. B. (1996). Differences in Home Range Habitat Use Among Individuals in a Cattle Herd. *Applied Animal Behaviour Science, 49*(3), 305-302.

Johnson, M. D., & Horn, C. M. (2008). Effects of Rotational Grazing on Rodent and Raptors on Coastal Grassland. *Western North American Naturalist, 68*, 444-462.

Leopold, L. B., & Miller, J. P. (1954). *A Postglacial Chronology for Some Alluvial Valleys in Wyoming.* United States: U.S. Department of Interior- Geological Survey.

Mack, R. N., & Thompson, J. N. (1982). Evolution in Steppe with Few Large, Hooved Mammals . *The American Naturalist, 119*(6), 757-773.

Manier, D. J., & Hobbs, N. (2007). Large Herbivores in Sagebrush Steppe Ecosystems: Livestock and Wild Ungulates Influence Structure and Function. *Oecologia, 152*(4), 739-750.

McInnis, M. L., & McLver, J. (2001). Influence of Off-Stream Supplements on Streambanks of Riparian Pastures . *Journal of Range Managements, 54*(6), 648-652.

McNaughton, S. J. (1979). Grazing as an Optimization Process: Grass-Ungulate Relationships in the Serengeti. *The American Naturalist, 113*(5), 691-703.

Merritt, S., Prosser, K., Sedivec, K., & Bangsund, D. (2001). *Multi-species Grazing and Leafy Spurge.* Sidney, MT: U.S. Department of Agriculture, Agricultural Research Station Team Leafy Spurge.

Mosley, J. C. (1996). Prescribed Sheep Grazing to Suppress Cheatgrass:A Review. *Sheep and Goat Research Journal, 12*, 74-81.

Olson, B. E., & Wallander, R. T. (2001). Sheep Grazing Spotted Knapweed and Infested Idaho Fescue . *Journal of Range Management, 54*(5), 25-30.

Parsons, C. T., Momont, P. A., Delcurto, T., McInnis , M., & Porath, M. L. (2003). Cattle Distribution Patterns and Vegetation Use in Mountain Riparian Areas. *Journal of Range Managment, 56*(4), 334-341.

Patterson, R. L. (1952). *Sage Grouse in Wyoming* (1st ed.). Denver, CO: Sage Books .

Patton, B. D., Dong, X., Nyren, P. E., & Nyren, A. (2007). Effect of Grazing Intensity, Precipitation, and Temperature on Forage Production. *Rangeland Ecology & Management, 60*(6), 656-665.

Peters, E. F., & Bunting, S. C. (1994). Fire Conditions Pre- and Post- Occurrence of Annual Grasses on the Snake River Plain. In S. B. Monsen, & S. G. Kitchen, *Proceedings-Ecology and Management of Annual Rangelands* (Vols. General Technical Report INT-GTR-313, pp. 31-36). Ogden, UT: U.S. Department of Agriculture, Forest Service, Intermoutain Research Station.

Pluhar, J. J., Knight, R. W., & Heitschmidt, R. K. (1987). Infiltration Rates and Sediment Production as Influenced by Grazing Systems in the Texas Rolling Plains. *Journal of Range Management, 40*(3), 240-243.

Riggs, R. A., & Urness, P. J. (1989). Effects of Goat Browsing on Gambel Oak Communities in Northern Utah. *Journal of Range Management, 42*(5), 354-360.

Sanders, K. D., & Both, A. S. (1983). Ecological Changes of Grazed and Ungrazed Plant Communities. In S. B. Monsen , & N. Shaw, *Managing intermountain Rangelans-Improvement of Range and Willife Habitats* (Vols. General Technical Report INT-GTR-157, pp. 176-179). Ogden, UT: U.S. Department of Agriculture, Forest Service, Intermoutain Research Station.

Schulz, T. T., & Leininger, W. C. (1990). Differences in Riparian Vegetation Structure between Grazed Areas and Exclosures. *Journal of Range Management, 43*(4), 295-299.

Short, J. J., & Knight, J. E. (2003). Fall Grazing Affects Big Game Forage on Rough Fescue Grasslands. *Journal of Range Management, 56*(3), 213-217.

Smith , A. D. (1949). Effects of Mule Deer and Livestock upon a Foothill Range in Northern Utah. *The Journal of Wildlife Management, 13*(4), 317-338.

Smith, M. A., Malechek, J. C., & Fulgham, K. O. (1979). Forage Selection by Mule Deer on Winter Range Grazed by Sheep in Spring. *Journal of Range Management, 32*(1), 40-45.

Taylor, R. L., Naugle, D. E., & Mills, S. L. (2012). *Viability Analyses for Conservation of Sage-Grouse Populations: Buffalo Field Office, Wyoming Final Report.* Missoula: Wildlife Biology Program University of Montana.

Tisdale, E. W. (1994). Great Basin Region: Sagebrush Types. In T. N. Shiflet, *Rangeland Cover Types* (pp. 40-46). Denver, CO: Society for Range Management.

U.S. Department Interior- Bureau of Land Management. (1956). *Land Planning and Classification Report of the Public Domain Lands In the Powder River Basin(Montana-Wyoming Missouri River Basin Investigation Area III).* Denver: U.S. Department Interior- Bureau of Land Management.

U.S. Department of Agriculture. (2010). *Wyoming National Agricultural Statistics* . United States: U.S. Department of Agriculture, National Agricultural Statistics Service .

U.S. Department of Agriculture, N. R. (2011). *Soil Survey Geographic (SSURGO) database for Campbell County, Wyoming, Northern Part.* Fort Worth: U.S. Department of Agriculture, Natural Resources Conservation Service.

U.S. Department of Agriculture, Natural Resources Conservation Service . (2011). *Soil Survey Geographic (SSURGO) database for Campbell County, Wyoming, Southern Part* . Fort Worth: U.S. Department of Agriculture, Natural Resources Conservation Service .

U.S. Department of Agriculture, Natural Resources Conservation Service . (2011). *Soil Survey Geographic (SSURGO) database for Johnson County Area, Wyoming, Southern Part* . Fort Worth: U.S. Department of Agriculture, Natural Resources Conservation Service .

U.S. Department of Agriculture, Natural Resources Conservation Service . (2011). *Soil Survey Geographic (SSURGO) database for Sheridan County Area, Wyoming* . Fort Worth: U.S. Department of Agriculture, Natural Resources Conservation Service .

U.S. Department of Agriculture, Natural Resources Conservation Service. (2011, September 15). *Ecological Site Description.* Retrieved from Ecological Site Description (ESD) System for Rangeland and Forestland Data: http://esis.sc.egov.usda.gov/Welcome/pgReportLocation.aspx?type=ESD

U.S. Department of Agriculture, Natural Resources Conservation Service. (2011). *Soil Survey Geographic (SSURGO) database for Johnson County Area, Wyoming, Northern Part.* Forth Worth: U.S. Department of Agriculture, Natural Resources Conservation Service.

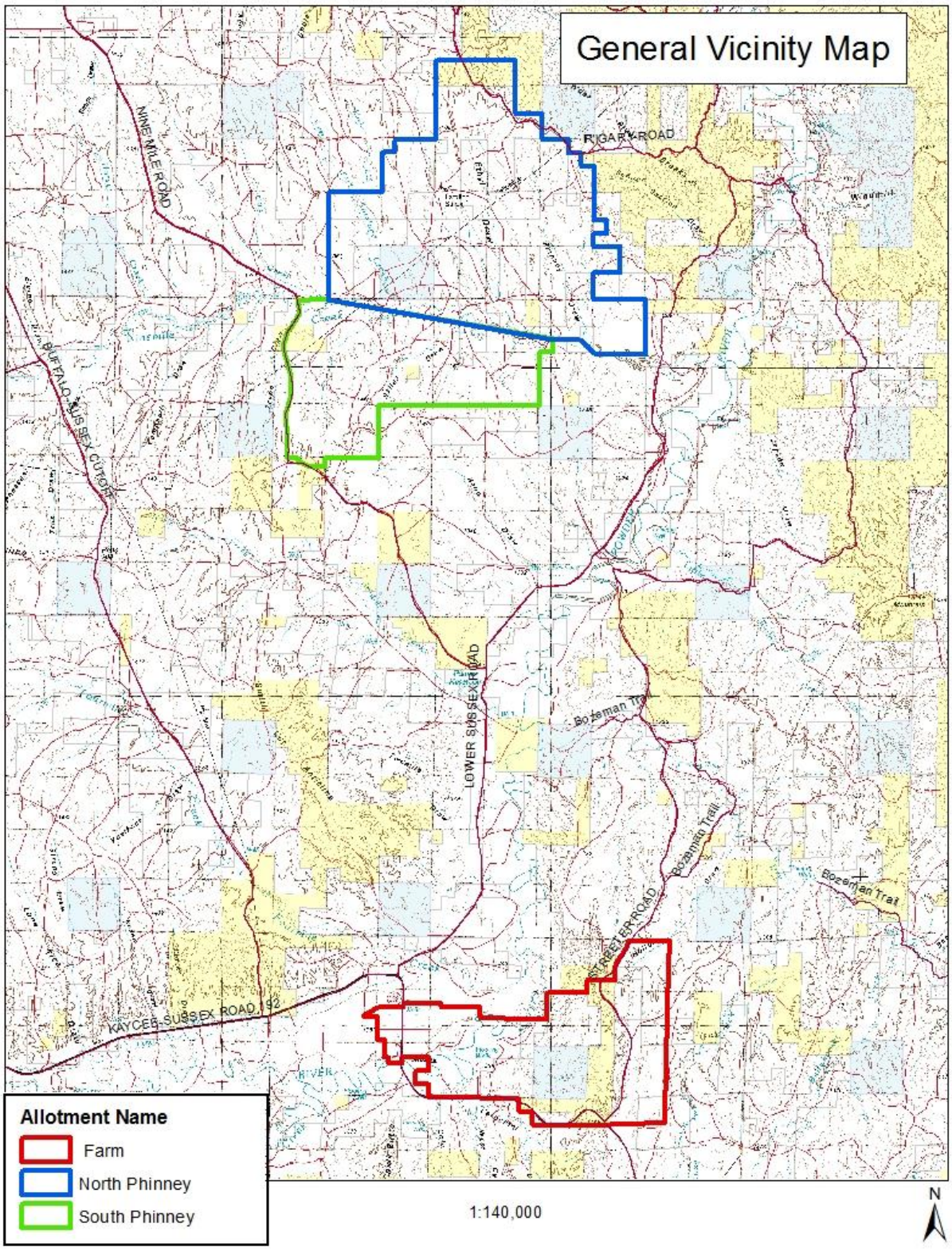
U.S. Fish and Wildlife Service(USFWS). (2010). *Endangered and Threatened Wildlife and Plants; 12-Month Findings for Petitions to List the Greater Sage-Grouse (Centrocercus urophasianus) as Threatened or Endangered.* Denver: United States Federal Register.

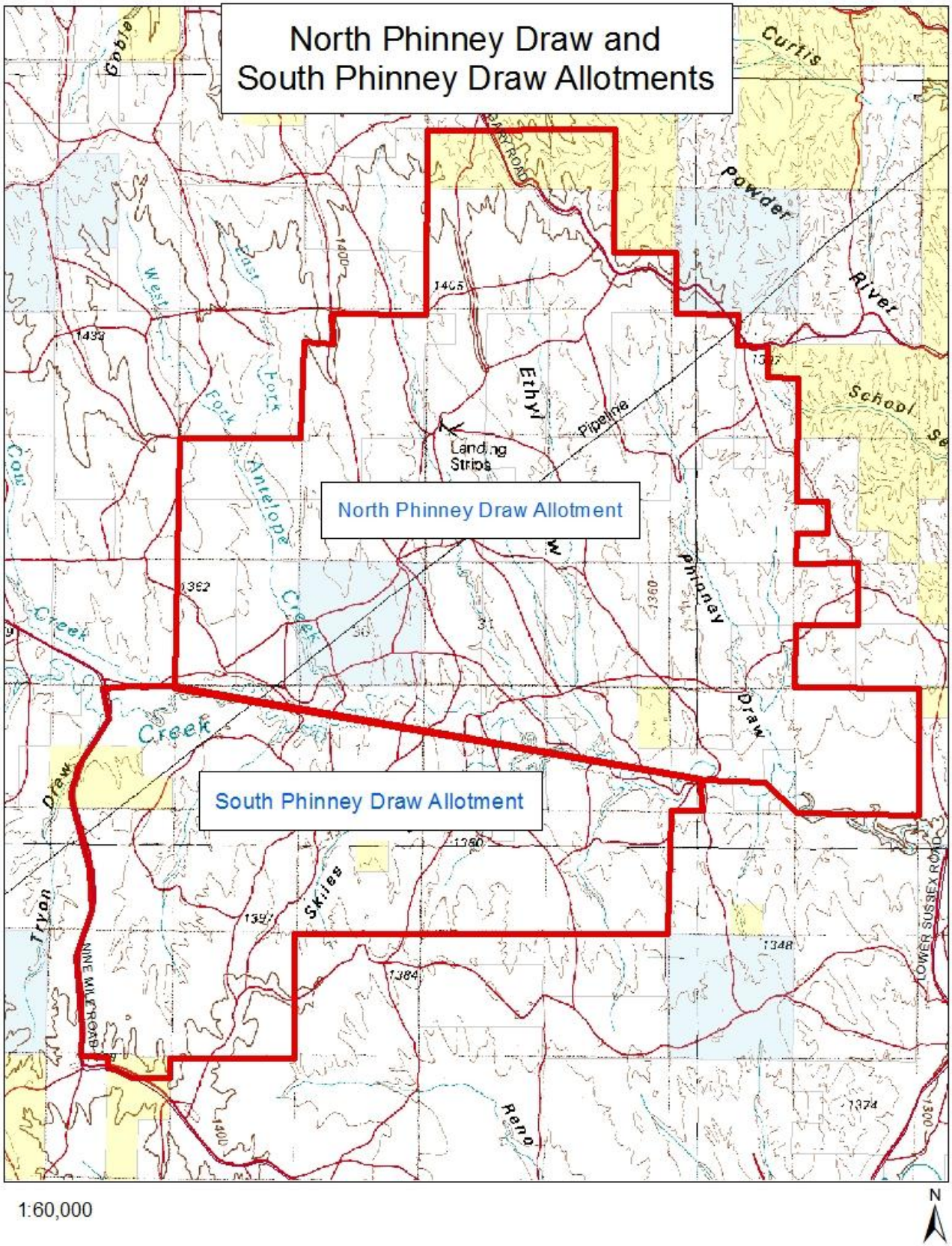
United States Department of Interior-Bureau of Land Management. (1997). *Standards for Healthy Rangelands and Guidlines for Livestock Grazing Management for Public Lands Administered by the Bureau of Land Management in the State of Wyoming.* Wyoming: United States Department of Interior-Bureau of Land Management.

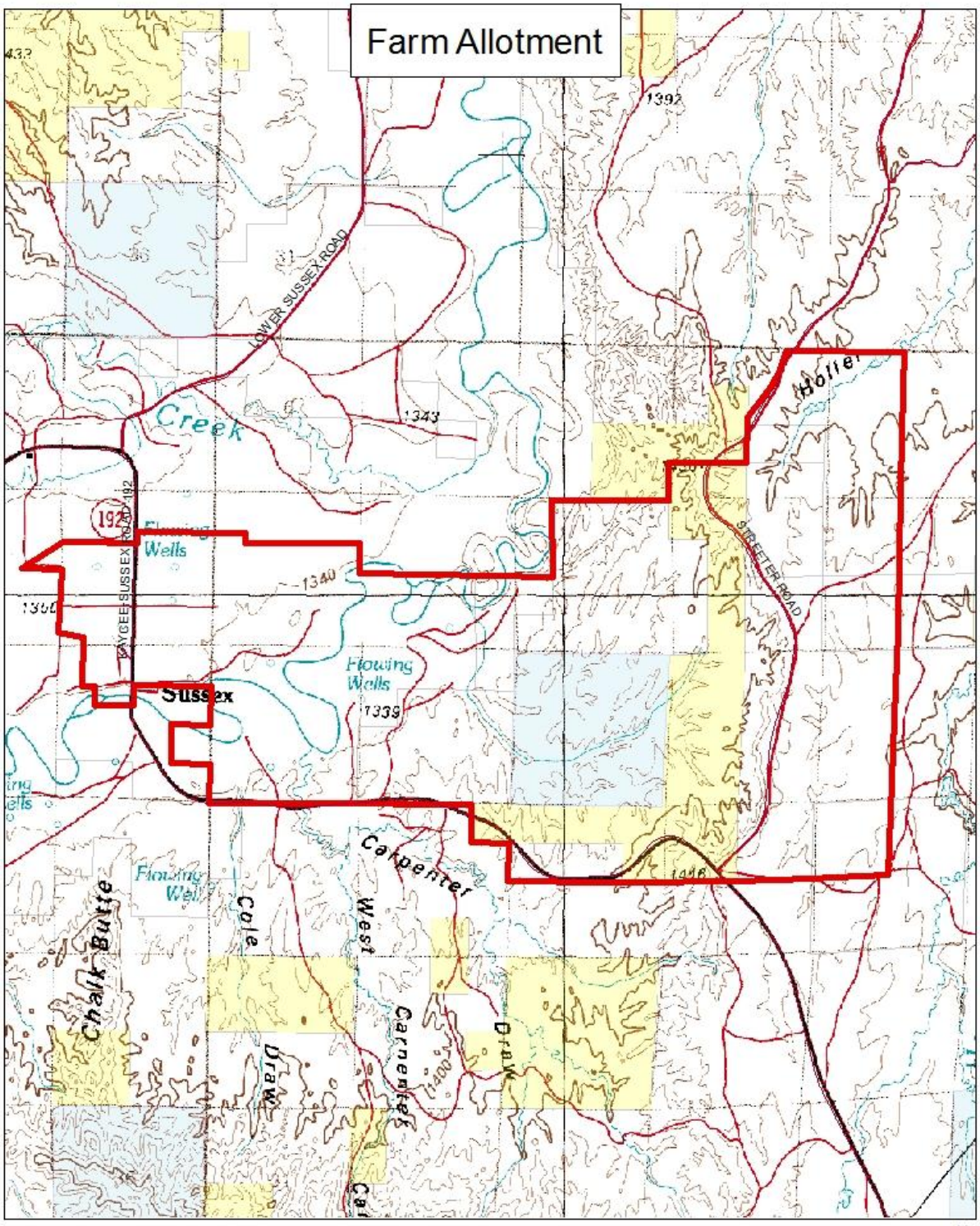
Wambolt, C. L., & Payne, G. F. (1986). An 18-Year Comparison of Control Methods for Wyoming Big Sagebrush in Southwestern Montana. *Journal of Rangeland Management, 39*(4), 314-319.

West , N. E. (1999). Managing for Biodiversity. In W. W. Collins , & C. O. Qualset, *Biodiversity in Agrosystems* (pp. 101-126). Boca Raton, FL: CRC Press.

Wyoming Game and Fish Department (WGFD) . (2011a). *Sheridan Region Lek Monitoring Results.* Sheridan: Wyoming Game and Fish Department (WGFD) .
Wyoming Game and Fish Department(WGFD). (2011b). *Sheridan Region Wyoming Game and Fish Department: Annual Big Game Herd Unit Reports.* Sheridan: Wyoming Game and Fish Department.


General Vicinity Map
NINE MILE ROAD
RIGARY ROAD
BUFFALO-SUSSEX CUTOFF
LOWER SUSSEX ROAD
Bozeman Trail
Bozeman Trail
Bozeman Trail
STREETER ROAD
KAYCEE-SUSSEX ROAD 93
Allotment Name
Farm
North Phinney
South Phinney
1:140,000
N


North Phinney Draw and
South Phinney Draw Allotments
North Phinney Draw Allotment
South Phinney Draw Allotment
Powder River
Ethyl Pipeline
Landing Strips
Phinney Draw
Antelope Creek
Tryon Draw
Skiles
Reno
Curtis
Goble
School
TOWER SUSSEX ROAD
NINE MILE ROAD
1:60,000
N


Farm Allotment
LOWER SUSSEX ROAD
Creek
Holler
1343
192
Flowing Wells
1340
1360
TAYGEE SUSSEX ROAD 192
STREETER ROAD
Sussex
Flowing Wells
1339
Carpenter
1446
Flowing Well
Cole
West
Chalk Butte
Carpenter
Draw
Draw
1:50,000
N

Appendix A. Tables

Table A.1. Summary of Species Habitat and Project Effects.

Common Name (scientific name)	Habitat	Presence	Project Effects	Rationale
Amphibians				
Northern leopard frog (*Rana pipiens*)	Beaver ponds, permanent water in plains and foothills (SS Policy). Swampy, cattail marshes on the plains (WGFD CWCS).	NS	MIIH	Habitat may be present on private lands in the allotments. Individuals or eggs may be trampled.
Columbia Spotted frog (*Ranus pretiosa*)	Breeds in the shallows of lakes, ponds, marshes, and small streams (NatureServe).	NS	MIIH	Habitat may be present on private lands in the allotments. Individuals or eggs may be trampled.
Birds				
Baird's sparrow (*Ammodramus bairdii*)	Grasslands, weedy fields (SS Policy). Un- or lightly grazed mixed-grass prairie, wet meadows, tallgrass prairie. Prairie w/ scattered low bushes and matted vegetation (NatureServe). In dry years, grassy slough bottoms, alkali flats, and depressions in low lying grasslands.	NS	NI	No preferred nesting habitat present.
Bald eagle (*Haliaeetus leucocephalus*)	Mature forest cover often within one mile of large water body (SS Policy). Nests near large lakes and rivers in forested habitat where adequate prey and old, large-diameter cottonwood or conifer trees are available for nesting (WGFD CWCS). Migrating and wintering eagles congregate near open water areas where concentrations of prey are available, such as carcasses of ungulate species, and spawning areas for kokanee, trout, and other fish (WGFD CWCS).	S	NI	Bald eagles may use the area for foraging. Activities associated with ongoing livestock grazing operations are not likely to occur to such an extent that foraging behavior will be disrupted.
Brewer's sparrow (*Spizella breweri*)	Basin-prairie shrub (SS Policy). Closely associated with sagebrush shrublands that have abundant, scattered shrubs and short grass (WGFD CWCS).	S	MIIH	Trampling of nests may occur. Negligible impacts from livestock or humans disrupting breeding, dislodging nests, or causing adult to leave eggs or chicks unattended.
Burrowing owl (*Athene cunicularia*)	Grasslands, basin-prairie shrub (SS Policy). Prefers open prairie, grassland, desert, and shrub-steppe habitats, and may also inhabit agricultural areas. It depends on mammals that dig burrows, which it uses for nesting, roosting, and escape (WGFD CWCS).	K	MIIH	Black-tailed prairie dog colonies present. Grazing impacts to burrowing owls will be negligible.
Ferruginous hawk (*Buteo regalis*)	Basin-prairie shrub, grasslands, rock outcrops (SS Policy). Semi-arid open country, primarily grasslands, basin-prairie shrublands, and badlands (WGFD CWCS). Requires large tracts of relatively undisturbed rangeland and nests in rock outcrops, the ground, cutbanks, cliff ledges, or trees (WGFD CWCS).	S	MIIH	Ferruginous hawks may forage in this area. One nest has been documented within the allotments. There is a possibility of nest trampling and disturbance to nesting hawks from livestock herding or tending operations.
Loggerhead shrike (*Lanius ludovicianus*)	Basin-prairie shrub, mountain-foothill shrub (SS Policy). Grasslands interspersed with scattered trees and shrubs that provide nesting and perching sites.	S	MIIH	Ongoing livestock operations will not result in substantially reduced shrub cover or habitat fragmentation. Nests may be toppled by livestock.

Common Name (scientific name)	Habitat	Presence	Project Effects	Rationale
Long-billed curlew (*Numenius americanus*)	Grasslands, plains, foothills, wet meadows (SS Policy). Inhabits a variety of grassland types ranging from moist meadow grasslands to agricultural areas to dry prairie upland, usually near water. Prefers a complex of shortgrass prairies, agricultural fields, wet and dry meadows and prairies, and grazed mixed-grass and scrub communities. Nests on the ground in habitat that includes grass <12", bare ground, shade, abundant invertebrate prey, and a minimum on 40 acres of suitable habitat (WGFD CWCS).	NS	MIIH	Marginally suitable habitat may be present. Nests may be trampled.
Northern goshawk (*Accipiter gentilis*)	Conifer and deciduous forests (SS Policy). Mixed coniferous habitat of a wide variety of ages, structural conditions, and successional stages. Nests in mature stands with multilayered canopies with open understory, small openings, and water within 0.25 miles. Nest stands often on slopes with northerly exposures or in drainages or canyon bottoms protected by such slopes. Post-fledging area is a mosaic of forest types that provide hiding cover and abundant prey. Foraging area may include a variety of forest types and structures but most often consists of forests with a high density of large trees, high canopy closure, high basal area, and relatively open understories, interspersed w/ shrublands and openings with perching trees to observe prey. Winter habitat probably includes a variety of vegetation types, such as forests, woodlands, shrublands, and forested riparian strips (WGFD CWCS).	NS	NI	Forested habitat sparsely scattered.
Peregrine falcon (*Falco peregrinus*)	Cliffs (SS Policy). Forages in open woodlands and forests, shrub-steppe, grasslands, marshes, and riparian habitats. Nests in cliffs that are usually proximate to habitats with abundant prey (WGFD CWCS).	NP	NI	Nest substrate not present. No known breeding pairs in proximity.
Sage sparrow (*Amphispiza billneata*)	Basin-prairie shrub, mountain-foothill shrub (SS Policy). Considered sagebrush obligate. Inhabits prairie and foothills shrublands habitat where sagebrush is present. Prefers shrublands with tall shrubs and low grass cover, where sagebrush is clumped in a patchy landscape. Requires a large block of un-fragmented habitat to successfully breed and survive (WGFD CWCS).	S	MIIH	Nests may be trampled. Cover will be affected.
Sage thrasher (*Oreoscoptes montanus*)	Basin-prairie shrub, mountain-foothill shrub (SS Policy). Considered sagebrush obligate. Inhabits prairie and foothills shrublands habitat where sagebrush is present. Prefers shrublands with tall shrubs and low grass cover, where sagebrush is clumped in a patchy landscape (WGFD CWCS).	S	MIIH	Nests may be trampled. Uncommon cowbird host, which are associated with cattle. May be more susceptible to higher parasitism pressure.
Trumpeter swan (*Cygnus buccinator*)	Lakes, ponds, rivers (SS Policy). Inhabits shallow marshes, ponds, lakes, and river oxbows. Prefers stable, quiet, and shallow waters where small islands, muskrat houses, or dense emergent vegetation provide nesting and loafing sites. Nutrient-rich water, with dense aquatic plant and invertebrate growth, provide the most suitable habitat. Winter habitat must provide extensive beds of aquatic plants that remain ice-free. In Wyoming, cold temps and ice restrict trumpeters to sites where geothermal waters, springs, or outflow from dams maintain ice-free areas (WGFD CWCS).	NP	NI	Habitat not present.
White-faced ibis (*Plegadis chihi*)	Marshes, wet meadows (SS Policy). Inhabits marshes, wet-moist meadows, lakes, and irrigated meadows. Nests on the ground in	NS	NI	Habitat may be present on private lands in the allotments. Ongoing livestock operations

Common Name (scientific name)	Habitat	Presence	Project Effects	Rationale
	bulrushes, cattails, or reeds; on a floating mat; or in a low tree.			should not affect use of the area by Ibis.
Yellow-billed cuckoo (*Coccyzus americanus*)	Open woodlands, streamside willow and alder groves (SS Policy). Nests primarily in large stands of cottonwood-riparian habitat below 7000 feet, including such habitats that occur in urban areas. It is a riparian obligate species that prefers extensive areas of dense thickets and mature deciduous forests near water, and requires low, dense, shrubby vegetation for nest sites.	NS	MIIH	Suitable habitat may be present. Ongoing livestock operations should not create significant additional impacts. Negligible impacts from livestock or humans disrupting breeding, dislodging nests, or causing adult to leave eggs or chicks unattended.
Migratory bird species (Various)	Multiple vegetation types are used for breeding, foraging and wintering, with habitat types ranging from grasslands and shrub-steppe to woodlands and riparian areas.	K	MIIH	Trampling of nests may occur. Negligible impacts from livestock or humans disrupting breeding, dislodging nests, or causing adult to leave eggs or chicks unattended. Ongoing livestock operations should not create significant additional impacts.
Plains Sharp-Tailed Grouse (*Tympanuchus phasianellus jamesi*)	Short and mixed-grass prairie, sagebrush shrublands, woodland edges, and river canyons. Common where grasslands are intermixed with other shrublands, especially wooded draws, shrubby riparian area, and wet meadows. Diets include a variety of forbs, grasses and insects. In winter, sharp-tailed grouse also feed on buds and catkins of deciduous trees or shrubs and berries. Birds are also known to feed on the buds of aspen and willow.	S	MIIH	Properly managed grazing will maintain quality cover and habitat. Nests or chicks may occasionally be trampled. There are two known leks located within 2 miles of the South Rosie Draw and Spring Creek #2 allotments. Ongoing livestock operations are not likely to change use of this area by Sharp-tailed grouse.
Mountain plover (*Charadrius montanus*)	Short-grass prairie with slopes < 5% (SS Policy). Low, open habitats such as arid shortgrass and mixed-grass prairies dominated by blue grama and buffalo grass with scattered clumps of cacti and forbs, and saltbush habitats of the shrub-steppe. Prefers to nest in large, flat grassland expanses with sparse, short vegetation (<=4") and bare ground. Adapted to areas that have been disturbed by prairie dogs, heavy grazing, or fire (WGFD CWCS).	NS	NI	There is little to no suitable plover habitat present. If present, birds may prefer grazed areas.
Fish				
Yellowstone cutthroat trout (*Oncoryhynchus clarki bouvieri*)	Mountain streams and rivers in Tongue River drainage	NP	NI	Habitat not present.
Mammals				
Black-tailed prairie dog (*Cynomys ludovicianus*)	Prairie habitats with deep, firm soils and slopes less than 10 degrees (SS Policy). Inhabits dry, flat, open, shortgrass and mixed-grass grasslands with low, relatively sparse vegetation, including areas overgrazed by cattle. Constructs burrows in fine to medium soils (WGFD CWCS).	K	MIIH	Prairie dogs often prefer habitats grazed by livestock. Prairie dog colonies are scattered throughout the allotments

Common Name (scientific name)	Habitat	Presence	Project Effects	Rationale
Fringed myotis (*Myotis thysanodes*)	Conifer forests, woodland chaparral, caves and mines (SS Policy). Found in a wide range of habitats, including coniferous forests, woodlands, grasslands, and shrublands. Probably most common in xeric woodlands, such as juniper, ponderosa pine, and Douglas-fir. Typically forages over water, along forest edges, or within forests and woodlands. During summer, uses a variety of roosts, including rock crevices, tree cavities, caves, abandoned mines, and buildings. During winter, it hibernates in caves, abandoned mines, and buildings (WGFD CWCS). Must remain within commuting distance of drinking water. Roosts in rock crevices that typically face southeast or southwest and are in low elevation forests or woodlands (WGFD Bat Conservation Plan).	NS	NI	Scattered conifer woodlands present. Livestock will have negligible impacts to bats.
Long-eared myotis (*Myotis evotis*)	Conifer and deciduous forest, caves and mines (SS Policy). Primarily inhabits coniferous forest and woodland, including juniper, ponderosa pine, and spruce-fir. Typically forages over rivers, streams, and ponds within the forest-woodland environment. During summer, it roosts in a wide variety of structures, including cavities in snags, under loose bark, stumps, buildings, rock crevices, caves, and abandoned mines. During winter, it probably hibernates primarily in caves and abandoned mines (WGFD CWCS). Occasionally found in cottonwood riparian areas, basins, and sagebrush grasslands where roost sites are available (WGFD Bat Conservation Plan). Most likely found in areas close to a water source. May also occur more frequently in suitable habitat near rock outcroppings or cliffs. Primarily forages over rivers, streams, and ponds within the forest-woodland environment. Also forages over open areas such as campgrounds, small forest openings, and edges, although foraging areas are most likely to be close to a water source. Large-diameter conifer snags provide primary roosting habitat (WGFD Bat Conservation Plan).	NS	NI	Scattered conifer woodlands present. Livestock will have negligible impacts to bats
Spotted bat (*Euderma maculatum*)	Cliffs over perennial water (SS Policy). Occupies a wide variety of habitats, from desert scrub to coniferous forest. Most often observed in low deserts and basins and juniper woodlands. Roosts in cracks and crevices in high cliffs and canyons. May occasionally roost in buildings, caves, or abandoned mines, although cliffs are the only roosting habitat in which reproductive females have been located (WGFD CWCS). Often occurs in association with canyons, prominent rock features, and permanent water sources. In desert environments, it forages in canyons, in the open, or over riparian vegetation. All recorded occurrences of spotted bats in WY were close to a permanent water source (WGFD Bat Conservation Plan).	NP	NI	Cliffs not present.
Swift fox (*Vulpes velox*)	Grasslands (SS Policy). Inhabits shortgrass and mixed-grass prairies. Often uses highway and railroad ROWs, agricultural areas, and sagebrush-grasslands. Closely associated w/ prairie dog colonies and uses underground dens year-round. Selects habitat with low-growing vegetation, relatively flat terrain, friable soils, and high den availability (WGFD CWCS).	S	MIIH	Inappropriate grazing could reduce hiding cover and increase susceptibility to predation.
Townsend's big-eared bat (*Corynorhinus*	Caves and mines (SS Policy). Occupies a variety of xeric to mesic	S	NI	Availability of roost sites is unknown, but

Common Name (scientific name)	Habitat	Presence	Project Effects	Rationale
townsendii)	habitats, including coniferous forests, juniper woodlands, deciduous forests, basins, and desert shrublands, and is absent only from the most extreme deserts and highest elevations. Requires caves or abandoned mines for roost sites during all seasons and stages of its life cycle, and its distribution is strongly correlated with the availability of these features (WGFD CWCS). May be limited to areas with reliable, accessible sources of drinking water. Forages primarily along forest and woodland edges, riparian corridors, and in open areas near wooded habitat. May avoid open, grazed pasture land.			foraging habitat is present. Ongoing livestock grazing unlikely to affect prey abundance or availability of foraging habitat.
Plants				
Limber Pine (*Pinus flexilis*)	High-elevation pine, often marking the tree line either on its own, or with Whitebark Pine (*Pinus albicaulis*), either of the Bristlecone pines, or Lodgepole Pine (*Pinus contorta*). Found in steeply-sloping, rocky and windswept terrain in the Rocky Mountains.	NP	NI	Habitat not present
Porter's sagebrush (*Artemisia porteri*)	Sparsely vegetated badlands of ashy or tufaceous mudstone and clay slopes 5300-6500 ft.	NP	NI	Habitat not present
William's wafer parsnip (*Cymopterus williamsii*)	Open ridgetops and upper slopes with exposed limestone outcrops or rockslides, 6000-8300 ft.	NP	NI	Habitat not present

Presence
K - Known, documented observation within project area.
S - Habitat suitable and species suspected, to occur within the project area.
NS - Habitat suitable but species is not suspected to occur within the project area.
NP - Habitat not present and species unlikely to occur within the project area.
Project Effects
NI - No Impact.
MIIH - May Impact Individuals or Habitat, but will not likely contribute to a trend towards Federal listing or a loss of viability to the population or species.
WIPV - Will Impact Individuals or Habitat with a consequence that the action may contribute to a trend towards Federal listing or cause a loss of viability to the population or species.
BI - Beneficial Impact

Table A.2. Summary of Threatened and Endangered Species Habitat and Project Effects

Common Name (scientific name)	Habitat	Presence	Project Effects	Rationale
Endangered				
Black-footed ferret (*Mustela nigripes*)	Black-tailed prairie dog colonies or complexes > 1,000 acres.	NP	NE	Black-footed ferrets have been "block-cleared" for Northeast Wyoming.
Threatened				
Ute ladies'-tresses orchid (*Spiranthes diluvialis*)	Riparian areas with permanent water	NP	NE	Habitat not present
Candidates for listing				
Greater sage-grouse (*Centrocercus urophasianus*)	Basin-prairie shrub, mountain-foothill shrub (SS Policy). Also includes wet-moist meadows, and alfalfa and irrigated meadows when adjacent to sagebrush (WGFD CWCS).	S	MIIH	There are twelve leks within four miles of BLM land in the EA area. Incubating female, eggs, and/or chicks may occasionally be trampled. Ongoing livestock operations are not likely to change current use of this area by nesting GSG.

Presence
K - Known, documented observation within project area.
S - Habitat suitable and species suspected, to occur within the project area.
NS - Habitat suitable but species is not suspected to occur within the project area.
NP - Habitat not present and species unlikely to occur within the project area.

Project Effects
LAA - Likely to adversely affect
NE - No Effect
NLAA - May Affect, not likely to adversely affect individuals or habitat.
NLJ – Not likely to jeopardize continued existence
MIIH – May impact individuals and habitat
NP—Habitat not present and species unlikely to occur within the project area.

Table A.3 This EA Incorporates by Reference the Following NEPA Analysis from the Analysis Area of the 6 Proposed Allotment Renewals.

#	Project Name	NEPA Document #	Twn Rng	Allotment Analysis Area	Well Type / #	Approval
1	Big Bend	WY-070-EA07-201	T43N, R78W	Farm	CBNG/19	2007
2	Albacore	WY-070-390CX1-274	T43N, R78W		CBNG/1	2011