Environmental Assessment (EA) DOI-BLM-WY-070-EA14-240

Lease Renewal

Hilight/#12231
Mills Brothers
Lease # 4907368

Linch/#02325
Iberlin Ranch
Lease # 4907549

Osborn/#02249
Dale V. Osborn
Lease # 4907410

Willow Creek (T Chair)/#12036
T Chair Land Company
Lease # 4907062

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The BLM's multiple-use mission is to sustain the health and productivity of the public lands for the use and enjoyment of present and future generations. The Bureau accomplishes this by managing such activities as outdoor recreation, livestock grazing, mineral development, and energy production, and by conserving natural, historical, cultural, and other resources on public lands.

1.0 INTRODUCTION

1.1 Background

The Bureau of Land Management (BLM), Buffalo Field Office (BFO) proposes to renew 10 year grazing leases for the following 4 allotments: Hilight (#12231), Linch (#02325), Osborn (#002249), and Willow Creek (T Chair) (#12036). The allotments are within a 50 Mile Radius to one another in Johnson and Campbell Counties in Wyoming. The allotments are 10-40 miles from Wright, Wyoming. The Linch and Willow Creek (T Chair) allotments are primarily in the greater Powder River watershed while the Osborn and Hilight allotments are within the greater Cheyenne River watershed. Elevations are from 4,600 feet to 6,000 feet. The allotments contain about 140,410 total acres of which 1.46% is BLM land, 7.54 % is state land, and 91.00 % is deeded land. The leases authorizing grazing on these allotments include a total of 2,052.18[1] acres of federal land and 277 animal unit months (AUMs) of forage. Grazing use authorized is for cattle on the Willow Creek (T Chair) and Osborn allotments and sheep on the Linch and Hilight allotments. BLM is analyzing these allotments and their 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. Combination of the will improve the efficiency of the lease renewal process. The BLM parcels associated with each allotment are listed below and shown in Attachment 1:

- Hilight (#12231):

T45N R70W - Sec. 30 Lot 3

- Linch (#02325):

T42N R76W - Sec. 20 SE¼SE¼; Sec. 21 SW¼NW¼, NW¼SW¼; Sec. 29 NE¼NE¼
T41N R78W - Sec. 5 E½NE¼, NE¼SE¼, S½SE¼; Sec. 8 E½W½, E½; Sec. 9 S½S½, N½SW¼, S½NW¼, NW¼NW¼
T42N R78W - Sec. 13 E½SW¼ (Stock Driveway (W½) withdrawn); Sec. 32 E½E½

- Osborn (#02249):

T46N R70W - Sec. 26 NW¼SW¼; Sec. 27 SW¼NW¼; Sec. 32 NE¼SW¼, N½SE¼; Sec. 34 N½NE¼

- Willow Creek(T Chair) (#12036):

T43N R75W - Sec. 5 Lots 6, 7, and 8, the portions of which lie north of the south rimrock of North Middle Butte and west of the existing fence (Project No. 1009, located in Lot 8); Sec. 6 Lot 8, the portion of which lies west of the existing fence (Project No. 1009); Lot 9 in its entirety; Lot 10, the portion of which lies south and west of the line staked 6/19/1970 (Project No. 4224); Sec. 9 W½NW¼, the portion of which lies west of the west rimrock on South Middle Butte and northwest of the existing fence
T44N R75W - Sec. 31 Lots 13, 14, 19, and 20; Sec. 32 Lots 12 and 13

This EA, WY-070-EA14-240 analyzes the impacts of the proposed action on the environment in accordance with the National Environmental Policy Act (NEPA). The current grazing lessees own or control the base property associated with their allotment and currently holds the grazing authorization for that allotment. Dale Osborn leases the base property associated with the Osborn allotment from Thunder Basin Coal Company, LLC. Leases #4907368, #4907549, and #4907062 were last renewed per Section 415, H.R. 2055 (Consolidated Appropriations Act, 2012) on March 1st, 2012 and expire on February 28th, 2022. Lease #4907410 was last renewed per Section 416, Public Law 111-88 (Consolidated Appropriations Act) on May 1st, 2010 and expired on May 31st, 2013.

[1] 115 acres and 15 AUMs will be removed temporarily from the lease due to mining activities within the Osborn allotment. These numbers include the reduction.

The current lessees have each applied for renewal and/or issuance of the lease authorizing grazing on their allotment(s). Per 43 CFR 4110, the previous grazing lessees have preference in retaining the grazing privileges attached to each property. If the proposed action is implemented, a new term grazing lease will be offered to each lessee.

The Buffalo Resource Management Plan (RMP) was 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) (S&Gs). A formal assessment of the S&Gs has not yet been conducted for the allotments. Although no assessments have been completed, the BLM expects that recent range monitoring and field visits to the allotments would confirm that the allotments are meeting the S&Gs 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 Need for the Proposal

BLM's need for the proposal is to determine whether, how, and under what conditions to support the Buffalo Resource Management Plan's (RMP) goals, objectives, and management actions (1985, 2001, 2003, and 2011) with allowing livestock grazing on public lands managed by the BLM. Allotment information is an integral part of this EA, which BLM incorporates here by reference. Conditional livestock grazing finds support in the RMP, Taylor Grazing Act, FLPMA, and other laws and regulations.

Decision to be made: The BLM will decide whether or not to approve the proposed action, and if so, under what terms and conditions agreeing with the BLM's multiple use mandate, environmental protection, and RMP.

1.3 Scoping and Issues

The BLM conducts its decision-making per the requirements of the Council on Environmental Quality (CEQ) regulations implementing the NEPA, 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 interdisciplinary resource specialists in the BLM Buffalo Field Office. The identified issues are listed below and are incorporated in Sections 3 and 4 of this EA.

- 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 Greater Sage-Grouse (candidate species)?
- How would the proposal impact cultural resources or lands with wilderness characteristics?
- How can grazing impact native vegetation?
- Whether rangeland health assessment has been completed on the allotment

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: http://www.blm.gov/wy/st/en/info/NEPA/documents/bfo.html. The BLM received comments to assess whether the EA covers the issues raised and adequately addresses their significance. The BLM's response consists of addressing public comments in the decision record or results in the preparation of a new EA.

2.0 PROPOSED ACTION (PROPOSAL) AND ALTERNATIVES

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

The BLM 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 proposed, the Proposed Action Alternative and the No Action Alternative are the same (per BLM IM 2000-022, Change 1 (1999)). The proposed action is to offer a new 10 year term grazing for each of the following allotments: Hilight (#12231), Linch (#02325), Osborn (#002249), and Willow Creek (T Chair) (#12036). Each lease will have the same terms and conditions as the expiring/expired leases. Decisions will be written separately for each grazing lease. Table 1 shows the current authorized use (mandatory terms and conditions) for each lease.

Table 1 Mandatory Terms and Conditions of the grazing leases affected by the proposed action

Authorization Number	Allotment Number	Allotment Name	Public Acres	% Public Land*	Livestock Number*	Livestock Kind	Season of Use	AUMs	Type of Use
4907368	12231	Hilight	40	2	500	Sheep	3/1 to 4/30	4	Active
					500	Sheep	1/1 to 2/28	4	Active
4907549	02325	Linch	1440.83	2	3605	Sheep	3/1 to 2/28	173	Active
4907410	02249	Osborn*	280	10	27	Cattle	3/1 to 4/30	5	Active
				15	27	Cattle	5/1 to 9/30	20	Active
				10	27	Cattle	10/1 to 2/28	13	Active
4907062	12036	Willow Creek (T Chair)	406.35	100	6	Cattle	3/1 to 2/28	72	Custodial
		Total 2,2167					**Total**	291	

*Note: The Percent public land and livestock numbers will be changing from the existing leases for the Hilight, Osborn, and Willow Creek (T Chair) allotments. See table 2 describing the changes to the leases.
*The Osborn allotment acres and AUMs will be changing due to mining activities, see table 2 for new numbers.

BLM identified a variety of administrative errors including boundary inaccuracies, confusing grazing lease dates, and percent public lands. Table 2 shows the adjustment to the grazing leases due to the administrative errors. These changes will clear up any confusion on the lease and better illustrate the public lands within the allotment. No changes will be applied to the Linch lease. This is administrative correction is similar to an administrative maintenance action not needing any further analysis; see 43 CFR 1610.5-4. Acres are being used to calculate percent public land. The percent public land and livestock numbers are not indicative of the actual stocking rate because the percent public land is calculated on an acreages basis and not the available forage. BLM recognizes that the allotments consist primarily of non-federal lands with the exception of the Salt Creek allotment. As such, BLM will not limit the season of use or number of livestock as long as grazing use is not to the detriment of the public lands. The lease schedule shown is primarily for billing purposes.

Table 2 New Leases

Authorization Number	Allotment Number	Allotment Name	Public Acres	% Public Land	Livestock Number	Livestock Kind	Season of Use	AUMs	Type of Use
4907368	12231	Hilight	40	1	629	Sheep	3/1 to 2/28	8	Custodial
4907549	02325	Linch	1440.83	2	3605	Sheep	3/1 to 2/28	173	Active
4907410	02249	Osborn*	165	5	40	Cattle	3/1 to 2/28	24	Active
4907062	12036	Willow Creek (T Chair)	406.35	1	600	Cattle	3/1 to 2/28	72	Custodial
		Total	2,052.18				**Total**	277	

*Note: The Osborn allotment lease will have 15 AUMs in suspension due to mining activity.

The "other terms and conditions" for each lease are listed below. These ensure the lease conforms to the goals and objectives of the Buffalo RMP Records of Decision (RODs).

- 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

In order to ensure that the BLM lease transfers back to the base property owner or new base property lessee upon cancellation or transfer of the base property lease, the following term will be included in the Osborn Lease where the base property is leased to the BLM grazing lessee Dale Osborn:

- This lease will be terminated upon notification of cancelation or termination of the base property lease. Once canceled the BLM lease will be transferred to the base property owner or the new base property lessee for the remaining term of the BLM grazing lease.

The proposal will issue new 10 year term grazing leases to the grazing lease applicants. The applicants are in good standing with the BLM and meet all qualifications for obtaining a grazing lease under 43 CFR 4110.1 and 4110.2. Per 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 [BLM] that are designated as available for livestock grazing through land use plans." During the 10 year lease term or following the expiration of the lease, the lease may be modified if information indicates changes in management are needed to ensure the allotments are meeting or progressing towards achieving the S&Gs.

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 analysis.

2.2 Alternative II – No Grazing Alternative

Under this alternative the BLM will not permit livestock grazing on the Hilight (#12231), Linch (#02325), Osborn (#002249), and Willow Creek (T Chair) (#12036) allotments. Alternative II allows the BLM to place a no grazing provision on any or all of the allotments listed in Table 1, singularly or in any combination, in the most efficient, effective legal means. BLM would cancel the existing grazing leases per 43 CFR parts 4100 and 1600 to eliminate grazing on the allotments.

2.3 Alternatives Considered but not Analyzed in Detail

2.3.1 Greater Sage-Grouse (GSG) 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 GSG 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, continuity, and management opportunity of the public lands in the allotments make a BLM-administered deferred or rest-rotation grazing system an unreasonable alternative in these specific cases. Therefore a GSG alternative is not warranted. Although the a portion of private land within the Osborn allotment is in (GSG) Core Population area, the management opportunity does not warrant a BLM administered deferred grazing system.

2.4 Conformance to the Land Use Plan, Regulations, and Laws

This proposal does not diverge from the goals and objectives in the Buffalo Resource Management Plan (RMP), 1985, 2001, 2003, 2011, and generally conforms to the terms and conditions of that land use plan, its amendments, and supporting FEISs, 1985, 2003.

3.0 AFFECTED ENVIRONMENT

3.1 Introduction

The Hilight (#12231), Linch (#02325), Osborn (#002249), and Willow Creek (T Chair) (#12036) allotments are located in Campbell and Johnson Counties and are best approached by various county roads and Wyoming state highways. There is limited to no legal public access to BLM land in the allotments. The allotments are in the Powder River Basin level IV ecoregion. The Powder River Basin region has unglaciated, rolling, irregular and dissected plains. Perennial streams in the area are of montane origin with sand, gravel, and cobble substrates. The area's ephemeral or intermittent streams have sand, sandy or silty substrates. The allotments lie within the 10-14" Northern Plains (NP) precipitation zone, Major Land Resource Areas (MLRA) 58B. Mean temperatures in January are 0ºF (low) and 36ºF (high) and in July they are 52ºF (low) and 88ºF (high). (Chapman, et al., 2004)

In addition to the grazing leases, BLM authorizes other uses on the public lands the allotments, see Section 4.2. Livestock grazing, wildlife use, and oil and gas production are common area land uses. Recreation, primarily big game hunting, may also occur. The public lands in these allotments are clearly lacking in wilderness characteristics due to their small size (less than 5,000 acres). Table 3 shows the authorized rangeland improvement projects in or boarding these allotments. Maintenance of these projects is the grazing lessee's responsibility.

Table 3. Rangeland Improvements on public lands

Allotment Name	Allotment #	Project Name (Project #)	
Hilight	12231	None	
Linch	02325	Linch Fence #960886	*Meike Brothers Fence #961742
		*Rafter L Ranch/ Guy Leroy Smith Division Fence #964129	
		*Duncan Fence #964104	*Moore Division Fence #964465
Osborn	02249	*Deaver Fence #960716	
Willow Creek (T Chair)	12036	Brown Land CO Fence #961198	*Brown-Ruby Fence #964224
		*Pumpkin Butte Fence #2 #964225	Brown Spring Development #961467

*Those Improvements with an asterisk (*) are boundary fence projects.

The proposed action does not affect the following resources, which receive no further analysis:

Air Quality	Mineral Resources	Visual Resource Management
Areas of Critical Environmental Concern (ACEC)	Native American Religious Concerns	Water Quality and Prime or Sole Source of Drinking Water
Environmental Justice	Paleontology	Wetlands and Riparian Zones
Prime or Unique Farmlands	Recreation	Wild and Scenic Rivers
Flood Plains	Traditional Cultural Properties	Wilderness Values
Hazardous or Solid Wastes		

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 Hilight (#12231), Linch (#02325), Osborn (#002249), and Willow Creek (T Chair) (#12036) allotments are category "C" allotments, meaning their management is minimal, due to the small amount of public land in 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 BLM management. 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 1. The total AUMs available for grazing on public lands within the allotments is 277 AUMs. The allotments consist primarily of private lands. Authorized range improvements include those shown above in Table 3. Table 4 describes the current breakdown of land ownership and AUMs.

Table 4-Land ownership and AUMs

Allotment #	Allotment Name	Surface Ownership*	Acres	Percent	AUMs
12231	Hilight	BLM	40	0.53%	8
		Private	6,898	90.93%	1,380
		State	648	8.54%	130
		Total	**7,586**		**1,517**
02325	Linch	BLM	1,440.83	1.93%	173
		Private	68,019	91.08%	8,167
		State	5,218	6.99%	626
		Total	**74,678**		**8,967**
02249	Osborn	BLM	165	5.44%	24
		Private	2,868	94.56%	417
		State	0	0%	0
		Total	**3,033**		**441**
12036	Willow Creek (T Chair)	BLM	406.35	0.74%	72
		Private	49,999	90.70%	8,859
		State	4,723	8.57%	837

	Total	**55,128**		**9,768**
	Total (all allotments)	**140,424**		**20,693**
	BLM (all allotments)	**2,052.18**	**1.46%**	**277**
	Private (all allotments)	**127,783**	**91.00%**	**18,823**
	State (all allotments)	**10,588**	**7.54%**	**1,593**

*Note: Data in this table were estimated by BLM and compiled using ArcGIS data, thus acreages and AUMs on private and state land are approximate.

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. According to the sensitive soils layer for the Buffalo Field Office, approximately 40 acres of 233-Ustic Torriorthents, gullied are present in the Linch and Willow Creek (T Chair) allotments. These soils are specifically susceptible to water erosion. No other soils found on BLM land in the allotments were especially sensitive to wind or water erosion.

The allotments have a variety of soil mapping units from the Soil Survey of Johnson County, Southern Part and Soil Survey of Campbell County, Southern Part. Most often the mapping units are two or more soil types, forming complexes or associations. There are about 29 different mapping units on BLM lands in the assessment area. The 10 most common soils present have been placed in the following soil map units:

Soil Survey of Johnson County
SNe- Shingle-Tassel association
STb- Stoneham-Ascalon association
STd- Stoneham-Cushman association
SNd- Shigle-Kim association, valleys
VC- Valent-Cushman association

Soil Survey of Campbell County, Southern Part
206- Samday-Shingle-Badland Complex, 10 to 45 percent slopes
147- Forkwood-Cushman loams, 6 to 15 percent slopes
124- Cushman-Shingle loams, 6 15 percent slopes
163- Hilight-Wags-Badland complex, 3 to 45 percent slopes
143- Felix clay, ponded, 0 to 2 percent slopes

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

3.4 Vegetation

Based on soil mapping units, the ecological sites present in the area are predominately Northern Plains Shallow Loamy 10-14” precipitation, Northern Plains Loamy 10-14” precipitation, and Northern Plains Shallow Clayey 10-14” precipitation. Vegetation is predominantly Wyoming big sagebrush type and mixed grass prairie. Wyoming big sagebrush is the most common species of sagebrush found in this area. Other shrubs, including low sage, greasewood, snakeweed, birdfoot sage, fringed sage, yucca, juniper, and winterfat also occur in the area. Perennial grasses that occur on the uplands include western wheatgrass, bluebunch wheatgrass, needle and thread grass, green needle-grass, Sandberg bluegrass,

prairie junegrass, blue grama, and threadleaf sedge. Common forb species include phlox, sego lily, buckwheat, yarrow, fleabane, aster, hawksbeard, onion, scarlet globemallow, and scurfpea. Most vegetation growth occurs in May and June. A complete description of the vegetation types can be found in each specific Ecological Site Description (ESD) (U.S. Department of Agriculture, Natural Resources Conservation Service, 2012).

Currently BLM authorizes 291 total AUMs in the allotments. BLM calculated the AUMs using light-to-moderate stocking rates, per 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).

3.5 Noxious Weeds and Invasive Non Native Plant Species

Cheatgrass (downy brome) and Japanese brome are an invasive species that are common in all ecological sites in the BFO area. Theses invasive annuals are uncommon on all the allotments. Cheatgrass is present primarily in isolated areas and areas and along road. The BLM lands in the allotments are relatively free of noxious weeds except along travel corridors, in drainage bottoms and in areas with a history of heavy disturbance. The most common noxious weeds present are thistle species. These weeds are a minor component of the plant species present in the allotments.

3.6 Water Resources

The allotments are located primarily within the Powder River(Linch and Willow Creek (T Chair)) and Belle Fourche River (Hilight and Osborn) level 6 sub-watersheds identified by the United States Geological Survey (USGS) (Subcommittee on Spatial Water Data, 2000). The perennial streams within the allotments are all on private lands. All other drainages on BLM land in the allotments are ephemeral or intermittent. This means that water flow generally occurs during the wet season (50% of the year or less) so water typically only flows in these channels during times such as spring runoff. Water ceases to flow in these channels during drier periods but may still continue to run underground. As such, there may or may not be riparian vegetation associated with intermittent stream channels. Also, they are not a reliable source of water for livestock or wildlife.

3.7 Wildlife

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

BLM conducted wildlife evaluations including comparison of past and current aerial imagery and review of wildlife geospatial datasets (available at BFO). They assessed the occurrence of selected wildlife species and their habitats, and evaluated the anticipated effects associated with issuing these grazing leases on the Allotments. The evaluations included selected individual species or species groupings that are ecologically, economically, or socially important. Tables A.1 and A.2 in the appendix summarize the affected environment for selected wildlife.

3.7.2 Candidate Species

This EA discusses GSG in detail because they are a candidate species, currently warranted for listing under the Endangered Species Act (U.S. Fish and Wildlife Service(USFWS), 2010)and are of heightened management concern in the BFO. GSG are also a Wyoming BLM sensitive species and a Wyoming Game & Fish Department (WGFD) Species of Greatest Conservation Need (SGCN). GSG seasonal habitat is present on BLM lands in the all allotments There are 30 occupied GSG leks within 2 miles of the allotments and 17 of those reside within allotment boundaries (Reference Table 5 below for all leks within the associated allotment boundaries).

Table 5 Greater Sage-Grouse leks and their associated Allotments.

Lek Name	Status	Allotment Name
Collins SE	Occupied	Linch
Collins SW	Occupied	Linch
Bushwhacker Creek III	Occupied	Linch
Cedar Canyon	Occupied	Linch
T-Chair	Occupied	Willow Creek (T Chair)
Collins North	Occupied	Willow Creek (T Chair)
Brown Ranch	Occupied	Willow Creek (T Chair)
Cottonwood Creek 3	Occupied	Linch
Cottonwood Creek 1	Occupied	Linch
Little Black Butte	Occupied	Willow Creek (T Chair)
Cottonwood Creek 2	Occupied	Willow Creek (T Chair)
Hines NW	Occupied	Willow Creek (T Chair)
Windmill	Occupied	Willow Creek (T Chair)
Windmill NW	Occupied	Willow Creek (T Chair)
Windmill North	Occupied	Willow Creek (T Chair)
Gilbertz III	Occupied	Willow Creek (T Chair)
North Butte	Occupied	Willow Creek (T Chair)

3.7.3 Big Game

Big game species occurring in the EA area include Elk, pronghorn, white-tailed deer, and mule deer. Table 6 summarizes WGFD big game seasonal range data for the allotments.

Table 6. Big Game Seasonal habitat provided in each Allotment

Species	Hilight	Osborn	Linch	Willow Creek (T Chair)
Mule deer	Yearlong	Yearlong	Yearlong/Winter Yearlong	Yearlong/Winter Yearlong
Pronghorn	Yearlong/Winter Yearlong	Yearlong/Winter Yearlong	Yearlong/Winter Yearlong	Yearlong/Winter Yearlong

Yearlong use is when a population makes general use of suitable documented habitat sites in 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 in 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. As of the most recent available report, (Wyoming Game and Fish Department(WGFD), 2011b). Populations of mule deer and pronghorns are below their WGFD objective.

3.7.4 Raptors

Raptors use the Allotments for breeding, foraging, wintering, or migration. Common raptor species frequenting the allotments include golden eagle, northern harrier, red-tailed hawk, Swainson's hawk, American kestrel, short-eared, prairie Falcon, burrowing owl, bald eagle and great-horned owls. Bald eagles occasionally roost in cottonwoods in nearby riparian areas in the winter and forage in the area. Raptors prey upon small mammals, reptiles, and fish. Their survival and reproductive success depends on the availability and abundance of these food sources.

3.8 Cultural and Historic Values

Class III inventory for cultural resources has not occurred on the majority of the Hilight Allotment, although the Wyoming Cultural Records Office (WYCRO) database revealed that inventories related primarily to oil and gas development and coal mining have discovered cultural sites. The Hilight Allotment contains 23 known cultural sites, seven of which are unevaluated for the National Register of Historic Places (NRHP), three of which are eligible for the NRHP, and 13 of which are not eligible for the NRHP. There may be many more unrecorded cultural sites, some which may be eligible for listing on the NRHP within the allotment.

Class III inventory for cultural resources has not occurred on the majority of the Linch Allotment, although the WYCRO database revealed that inventories related primarily to oil and gas development have discovered cultural sites. The Linch Allotment contains 146 known cultural sites, 18 of which are eligible for the NRHP, one of which is listed on the NRHP, 101 of which are not eligible for the NRHP, and 26 of which are unevaluated. There may be many more unrecorded cultural sites, some which may be eligible for listing on the NRHP within the allotment.

Class III inventory for cultural resources has not occurred on the majority of the Osborn Allotment, although the WYCRO database revealed that inventories related primarily to oil and gas development and coal mining have discovered cultural sites. The Osborn Allotment contains 26 known cultural sites, 21 of which are unevaluated for the NRHP and five of which are not eligible. There may be many more unrecorded cultural sites, some which may be eligible for listing on the NRHP within the allotment.

Class III inventory for cultural resources has not occurred on the majority of the Willow Creek (T Chair) Allotment, although the WYCRO database revealed that inventories related primarily to oil, gas, and uranium development have discovered cultural sites. The Willow Creek (T Chair) Allotment contains 331 known cultural sites, 47 of which are eligible for the NRHP, 192 of which are not eligible for the NRHP, and 92 of which are unevaluated. There may be many more unrecorded cultural sites, some which may be eligible for listing on the NRHP within the allotment.

3.9 Socioeconomics

Ranching is a strong component of local society and has a historical value, as grazing has occurred in northeast Wyoming since the late 1800s. According to the U.S. Department of Agriculture Agricultural Census (U.S. Department of Agriculture, 2010), Wyoming ranked 24th in the nation in the value of sale of cattle and calves, and 4th for value of sale of sheep and lambs. Within Wyoming, sales of cattle and calves ranked first in market value of agricultural products sold, with sheep and goat sales ranking 5th.. These statistics show that ranching is a key component in both Wyoming and the nation's agricultural industry. The sale of livestock is linked to the commodity value of public rangelands. Public lands are an essential part of many ranch operations in the Buffalo Field Office, as they are intermingled with and grazed in conjunction with private and state lands. The BLM grazing lease helps maintain the successful functioning of the ranch operation and support the cultural lifestyle of the lessee.

Public land grazing contributes to the State of Wyoming's revenue through "payment in lieu of taxes" by the Federal government. All of the grazing allotments managed by the Buffalo Field Office were established according to provisions of Section 15 of the Taylor Grazing Act. Receipts from grazing on Section 15 lands are distributed as follows: 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 analyzed in this EA generate approximately $392 in federal grazing fees each year.

4.0 ENVIRONMENTAL EFFECTS

4.1 Direct, Indirect, Residual Effects, Mitigation Measures, Cumulative Effects

4.1.1 Livestock Grazing

Alternative I-Proposed Action/No Action Alternative

The direct, indirect, and residual impacts associated with livestock grazing include nutrient cycling, physical damage to vegetation, trailing along fences, trampling and heavier grazing use at salted areas. These impacts are likely to continue upon issuing new leases. The proposed action would allow for the grazing lessees to continue grazing on their respective grazing allotments. Livestock would continue to use up to 277 public AUMs annually; see Table 1. Range vegetation inventory (DOI BLM, 1956) data, along with monitoring data from previous years indicate adequate forage is available in the allotments to support the proposed number of livestock, as well as provide for wildlife use, while withstanding the effects of that use. The new grazing leases authorize the same of livestock and season of use relative to each BLM parcel as the previous leases. This action is not proposing any changes to grazing management. The BLM does not expect the issuances of the grazing leases to have any effect on range management.

BLM has identified the scope of the proposed action and alternatives as well as the cumulative effects affected area (CEAA) for livestock grazing as the area within the allotment boundaries. BLM anticipates the direct impacts to last for the life of the grazing lease (10 years), while the indirect and long term impacts may persist.

Cumulative Incremental Effect from the Proposal: The incremental loss of forage available for livestock will occur with the addition of grazing to the past, present, and reasonably foreseeable actions. As long as mitigation and monitoring techniques are implemented to ensure new roads and trails from recreationists and hunters are not made, and fires are suppressed, the loss of vegetation available for livestock should be negligible. Additionally, oil and gas development and rights-of-way may be permitted, thus decreasing the amount of forage available for grazing. However, with best management practices (BMPs) being implemented, their effects should be negligible.

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 emergencies, to give 2 years' notification when cancelling, in whole or in part, an authorization for domestic livestock grazing to devote the associated lands to another public purpose, including disposal. The Buffalo RMP resource management decision reads that livestock grazing is allowed on all area BLM lands except on about 6,000 acres where it is 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 lessee 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 its land parcels, fences will likely be 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 grazed.

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

Cumulative Incremental Effect from the No Grazing Alternative: Reduced surface disturbance would occur with the removal of grazing. The incremental impacts would be less than those expected under the proposed action.

4.1.2 Soils

Alternative I-Proposed Action/No Action Alternative

Grazing can exert both beneficial and detrimental direct, indirect, and residual effects on a soil resource. The main effects that grazing has on the soil resource is removal of aboveground vegetation and hoof action, potentially leading to increased erosion, increased runoff, reduced infiltration rates and increased bulk density (soil 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, fences 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.

From a positive standpoint, large quantities of dung and urine are deposited in the allotments adding nutrients and organic matter to the soil (McNaughton, 1979). Hoof action benefits 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 proposal, impacts to the soil resource would remain the same and BLM expects no changes from the current state of the resource.

The CEAA for soils is the area inside the grazing allotment boundaries, selected by BLM due to the scope of the proposed action and alternatives. BLM anticipates the direct impacts last for the life of the grazing lease (10 years), while the indirect and long term impacts may last longer.

Cumulative Incremental Effect from the Proposal: The effects of the proposed action, when added to the reasonably foreseeable actions, should be minimal because range health objectives are used in livestock grazing management, hunters and recreationists will be monitored for land abuse, fire suppression will mitigate the severity of fire 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 trails made from livestock, roads and trails used by hunting and recreationists, new oil and gas roads, and areas where fires occur. Severity of these impacts would be dependent on the amount of hunter and recreationist use on the allotments, number of oil/gas/ROWs permitted, and the intensity/size of the wildfires.

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 is anticipated (Pluhar, Knight, & Heitschmidt, 1987). The allotment's nutrient cycle would likely change. Cattle

increase soil nutrients by depositing excrement on the soil surface. However, with improper management, they may decrease nutrients by consuming and permanently removing plants that put nutrients into the soil system.

Cumulative Incremental Effect from the No Grazing Alternative: Reduced surface disturbance would occur with the removal of grazing. The incremental impacts would be less than those expected under the proposed action.

4.1.3 Vegetation

Alternative I-Proposed Action/No Action Alternative

The direct, indirect, and residual effects grazing has on vegetation varies greatly depending on many 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 et al. Beneficial impacts may include, but are not limited to: growth stimulation from grazing ruminants saliva (McNaughton, 1979), trampling of seed into the ground (Holechek, 1981), reducing excess accumulation of standing dead vegetation and litter 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), reduced tillering (Belsky, 1986), modified plant growth form caused by consumption of terminal buds, thus promoting lateral branching (Fleischner, 1994), and disruption of ecological succession (Fleischner, 1994).

Under the proposed action, livestock will annually remove approximately 277 AUMs of forage from BLM land in the allotments. Most studies show that light to moderate stocking rates do not compromise rangeland health. BLM authorizes the AUMs based on a light to moderate stocking rate. Therefore, as long as the total number of permitted AUMs consumed does not exceed the allotments' authorized use; the impacts from renewing the grazing leases should not have an undesirable effect on vegetation.

BLM has determined the CEAA for vegetation, noxious weeds, and invasive plants to be the area within the grazing allotment boundaries and the area within one-half mile of those boundaries, in accordance with the scope of the proposed action and alternatives. BLM anticipates the direct impacts to last for the life of the grazing lease, while the indirect and long term impacts may last longer.

Cumulative Incremental Effect from the Proposal: The effects of the proposed action, when added to the reasonably foreseeable actions, should be minimal because rangeland health assessment is used to inform livestock grazing management, hunters and recreationists will be monitored for land abuse, fire suppression will mitigate the severity of fire impacts, and BMPs will be used for new oil, gas and ROW activities. Incremental effects of the proposed action may include forage loss and introduction of non-native species along new trails made by livestock, roads used for hunting and recreation, new oil and gas roads, and in areas where fires occur. The severity of these impacts would depend on the amount of hunter and recreationist use on the allotments, number of oil/gas/ROWs permitted, and the intensity/size of the wildfires.

Alternative II-No Grazing Alternative

The no grazing alternative would eliminate both the beneficial and detrimental impacts associated with 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 grazing. Other studies 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).

Cumulative Incremental Effect from the No Grazing Alternative: Reduced surface disturbance would occur with the removal of grazing. The incremental impacts would be reduced compared to those expected under the proposed action.

4.1.4 Noxious Weeds and Invasive Non Native Plant Species

Alternative I-Proposed Action/No Action Alternative

Livestock can transport noxious weeds and invasive nonnative plant species on their coats, feet, and in their digestive tract. Livestock may carry undesirable plants that exist within the allotments or bring them into the allotment from other pastures they have inhabited during their lifetime. 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 are present in the allotments, and recreation opportunities exist in the area, new weed introductions are likely to regularly occur. BLM, the county weed and pest agencies, and the grazing lessee monitor these infestations to determine if management changes are needed to control the infestations. Because current and proposed management does not exceed recommended grazing levels and no grazing management concerns occur at this time, BLM anticipates that there will be no increase in noxious weeds or invasive non-native plant species under the proposed action.

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. However the overgrowth of vegetation increases the availability of fine fuels, which also increases the wildfire risk. If fires occurred, they would likely be more intense, allowing opportunistic noxious and invasive species to colonize the public lands. Cooperative weed control efforts could discourage vegetation overgrowth and decrease the fire return interval.

[Cumulative effects for this affected resource are addressed in 4.1.3, Vegetation.]

4.1.5 Water Resources

Alternative I-Proposed Action/No Action Alternative

Riparian areas attract livestock due to environmental and nutritional factors and they may use riparian vegetation disproportionately more than adjacent uplands (Gillen, Krueger, & Miller, 1985) (Howery, Provenza, Banner, & Scott, 1996). This attraction can lead to higher use in riparian areas, thus decreasing streambank stability and cover while increasing soil erosion of the uncovered/unstable streambank (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 not detrimental to water quality and may increase water quantity (Holechek, 1981). No major degradation problems existed under the past and current management of livestock in these allotments. BLM expects direct, indirect, and residual impacts to water resources to remain unchanged.

The CEAA for water resources is the area within the grazing allotment boundaries and areas extending up and downstream from the allotments, as selected by BLM due to the scope of the proposed action and alternatives. 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.

Cumulative Incremental Effect from the Proposed Action: Implementation of the proposed action in combination with any past, present, and reasonably foreseeable actions may increase the possibility for decreased water quality and quantity. This could result from soil erosion into riparian areas. The incremental impacts should be minimal as BLM uses range health objectives in livestock grazing management, and monitors hunters and recreationists for land abuse. Fire suppression will mitigate fire impact severity and BLM uses BMPs for oil, gas, and ROWs.

Alternative II-No Grazing Alternative
The removal of grazing would improve and/or maintain riparian health. Use of riparian plants will decrease, 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).

Cumulative Incremental Effect from the No Grazing Alternative: Reduced surface disturbance would occur with the removal of grazing. The incremental impacts would be less than those expected under the proposed action.

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
Rationale for species not discussed below see tables A.1 and A.2 in the appendix.

Geographic Scope and Timeframe for Migratory Birds, Special Status Species, Threatened and Endangered Species, and Small Mammals: The CEAA is the local Upper Powder River and Clear Creek watershed boundary. Many of the species in the watershed are contained therein. Migratory species may travel outside the boundary but most of the life cycle likely occurs in the CEAA. BLM anticipates the direct impacts 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 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.

Cumulative Incremental Effect from the Proposal on Wildlife (Migratory Birds, Special Status Species, Threatened and Endangered Species, Small Mammals, Big Game, Raptors): Incremental impacts from the proposal 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 BLM uses S&Gs in livestock grazing management, monitors hunters and recreationists for land abuse, uses fire suppression will mitigate the severity of its impacts, and uses BMPs for new oil, gas and ROWs.

Alternative II-No Grazing Alternative
Cumulative Incremental Effect from the No Grazing Alternative on Wildlife (Migratory Birds, Special Status Species, Threatened and Endangered Species, Small Mammals, Big Game, Raptors): Reduced

surface disturbance would occur with the removal of grazing. The incremental impacts would be less than those expected under the proposed action.

4.1.6.2 Candidate Species – Greater Sage-Grouse (GSG)

Alternative I-Proposed Action/No Action Alternative

As noted in BLM WY-IM-2012-019 (2012), domestic livestock grazing has occurred in and around these allotments and "within the range of [GSG] 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 Wyoming Big 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 [GSG]. However, poor livestock grazing practices can have long-term negative impacts on [GSG] habitat by degrading sagebrush, meadow, and riparian communities (Bohne, Rinkes, & Kilpatirck, 2007)."

The proposal's direct, indirect, and residual effects will impact GSG habitat. Livestock grazing can benefit or degrade GSG habitat, depending on the timing, stocking rate, and habitat affected. Fall grazing may favor upland forb production, and ranchers may use spring grazing 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 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 (BLM, 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. Forbs are positively associated with survival and recruitment of GSG chicks. Inappropriate grazing that damages meadows and riparian areas can harm GSG, 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 historically occurred on these allotments and the BLM expects no additional impacts, other than those that occurred as a result of long-term use, from implementation of the proposed action. Continuing to manage for the Wyoming Standards for Rangeland Health may facilitate GSG habitat viability.

Because staffing and workload issues limit S&G assessment on "C" category allotments, BLM did not assess S&Gs on the allotments.

The CEAA for GSG is any area within a 2 mile radius of GSG leks in an allotment and leks that have a 2 mile buffer within an allotment. 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.

Cumulative Incremental Effect from the Proposal: Incremental impacts from the proposed action when added to the past, present and reasonably foreseeable action may result in habitat alteration of 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 within 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).

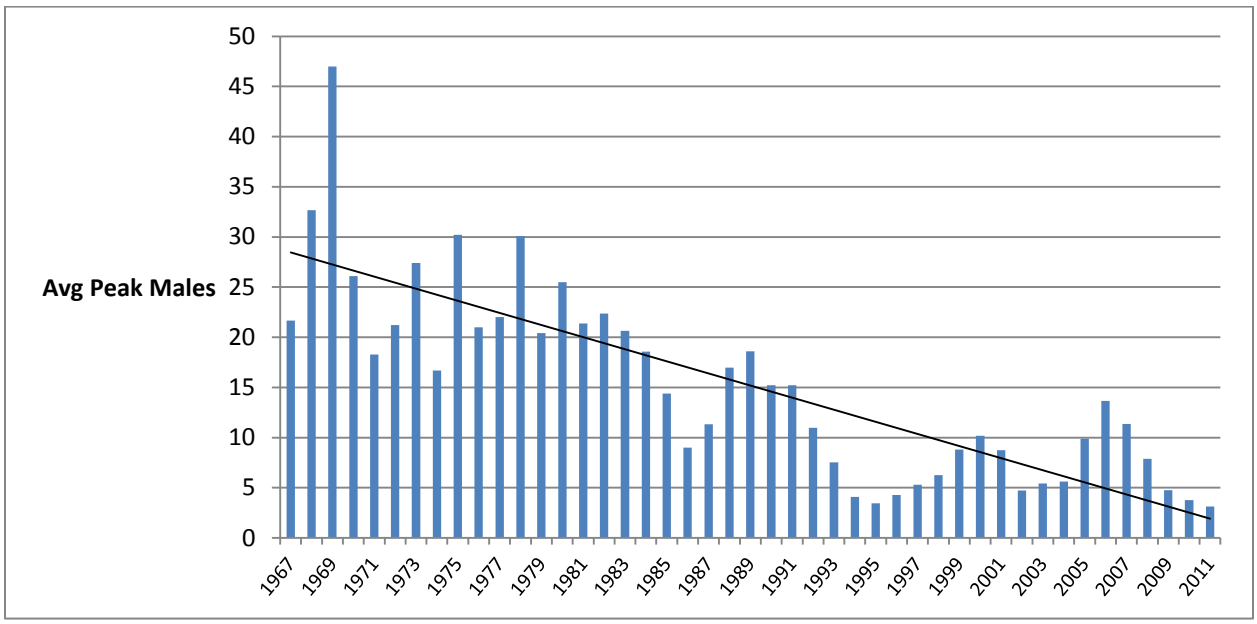

Figure 1. Average peak number of male Greater Sage-Grouse / active leks: BFO 1967-2009

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 BLM uses Rangeland Health objectives in livestock grazing management, monitors hunters and recreationalist for land abuse, uses fire suppression to mitigate the severity of its impacts, and uses BMPs for new oil, gas and ROWs.

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 condition or guarantee improvements in species richness, diversity, or vegetation production (Manier & Hobbs, 2007). Some habitats reach a threshold where livestock exclusion does not affect the current trend (Wambolt & Payne, 1986), (Sanders & Both, 1983). Other research shows that rest from 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 grazing can increase fire risk which results in habitat degradation (Peters & Bunting, 1994), (West , 1999).

Cumulative Incremental Effect from the No Grazing Alternative: Less surface disturbance would occur with grazing's removal. Incremental impacts when compared to the proposal will be less.

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

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 primarily on private land and are not subject to BLM management.

[BLM addressed cumulative effects for these alternatives, above, in Wildlife, Migratory Birds.]

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). 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 historically occurred on this allotment and the BLM expects no additional impacts, other than those that occurred as a result of long-term use, from implementation of the proposal. Good grazing management could maintain or improve nesting habitats for ground-nesting raptor species, improve prey abundance, and availability by enhancing habitat conditions.

[BLM addressed cumulative effects for these alternatives, above, in Wildlife, Migratory Birds.]

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, Historic Values & National Register of Historic Places (NRHP) Eligibility

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 March 28, 2014, the Bureau electronically notified the Wyoming State Historic Preservation Office (SHPO) of this grazing lease renewal.

Cumulative Incremental Effect from the Proposal: No new effects are anticipated.

Alternative II-No Grazing Alternative
The absence of grazing will not result in impacts to cultural resources.

Cumulative Incremental Effect from the No Grazing Alternative: Reduced surface disturbance would occur with the removal of grazing. The incremental impacts would be less than those expected under the proposed action.

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 continue to contribute to the state economy, benefiting Wyoming, Johnson and Campbell Counties and local governments. The federal government would continue to collect grazing fees from the lessees and this use would continue to generate revenue for the Wyoming state government and provide funds for the BLM to construct range improvement projects.

The CEAA for socioeconomics includes the Wyoming economy and BLM revenue. 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.

Cumulative Incremental Effect from the Proposal: The most significant incremental impact to socioeconomics would be the continued revenue generated from grazing receipts and other permitted actions.

Alternative II-No Grazing Alternative
The removal of grazing would increase financial stress on both the BLM and adjacent landowners as the federal land would have to be fenced off from private land to ensure no unauthorized grazing occurs on federal land. The landowners rely on the public lands for their livestock operation; the removal of federal grazing would mean they would need to adjust their operating plan, either through sale of livestock or renting expensive private grazing lands.

Cumulative Incremental Effect from the No Grazing Alternative: The loss of livestock grazing would reduce the income generated from permitted activities on BLM lands. This would impact the Wyoming economy negatively, as livestock grazing and the funds it generates are a large part of the Wyoming economy.

4.2 Cumulative Effects Summary

Cumulative effects are "the impact[s] on the environment which result 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). BLM anticipates 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 CEAAs that may contribute to cumulative effects on various resources include livestock grazing, hunting, recreational activities, fire, oil/ gas activities, and ROWs. The results of the impacts of past and present actions are described in Sections 3 and 4 above. Livestock grazing has occurred in the area for over 100 years. Approximately 277 total AUMs are authorized annually on these allotments. BLM anticipates no changes to authorized AUMs, season of use, and kind/number of livestock in the allotments. Livestock grazing will likely continue unless resources conditions or rangeland health assessments indicate otherwise. Additional activities associated 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 in the allotments for many years and are still a significant area land use. BLM expects these land uses to continue, with no material changes in these uses.

Fire has occurred in the area over many years. Fire regime is the role fire plays 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 overstory vegetation being replaced). The fire regime condition classes (FRCC) indicate 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 to its historic state, including vegetation and disturbances such as fire. Wildfires are likely to occur in future.

The BLM permits federal mineral development (coalbed natural gas, conventional oil, and coal) in the Powder River Basin (PRB). This includes federal minerals below federal and/or private (split estate) surface. The BLM prepares NEPA analyses prior to federal mineral development. Generally, companies submit proposals, often as plans of development (PODs) consisting of 1 to 200 wells. Mineral development is common in the area and numerous PODs are present. Although permitting of oil and gas wells has decreased in the PRB, it is likely this activity will continue. There are various allotments that have BLM lands that are within the boundaries of approved PODs, and have numerous oil and gas wells. A POD-specific analysis evaluated the environmental impacts from federal mineral development, and this EA incorporates those by reference to update the current situation and to aggregate the cumulative effects; see Table A.3 for a listing of allotments impacted by PODs. Rights-of-way (ROWs) exist in the allotments and more be approved in the future. These ROWs may include water pipelines, power lines, roads, and other federal ROWs. Maintenance and construction of these ROWs will create some surface disturbance that would contribute to the cumulative impacts on various resources.

4.3. Mitigation/Residual Impacts/Monitoring Summary

BLM does not require additional mitigation measures for this proposed action. The BLM incorporated all measures needed to mitigate the proposals' impacts as design features. BLM analyzed the impacts of any mitigation measures in Section 4, above. Per 40 CFR 1505.2(c), monitoring to ensure the success of the proposed action and any design/mitigation features will occur. This monitoring will follow BLM policy and management guidelines that may include use supervisions and trend monitoring when time and priorities permit.

5.0 TRIBES, INDIVIDUALS, ORGANIZATIONS, or AGENCIES CONSULTED

Dale V. Osborn	Lessee, Osborn Allotment	**Iberlin Ranch**	Lessee, Linch Allotment
Mills Brothers	Lessee, Hilight Allotment	**T Chair Land Company**	Lessee, Willow Creek (T Chair)
Wyoming State Agencies			

6.0 LIST OF PREPARERS

Dustin Kavitz, Rangeland Management Specialist, BLM, Buffalo Field Office

6.1 List of Reviewers

Name	Title	Duty	Name	Title	Duty
Kay Medders	Range Management	Range, Soils	Chris Sheets	Wildlife Biologist	Wildlife
Ardeth Hahn	Archeologist	Cultural Resources	Charlotte Darling	Range Management	Vegetation, Soils
Chris Durham	Asst. Field Manager	Resources	John Kelley	Coordinator	NEPA Planning

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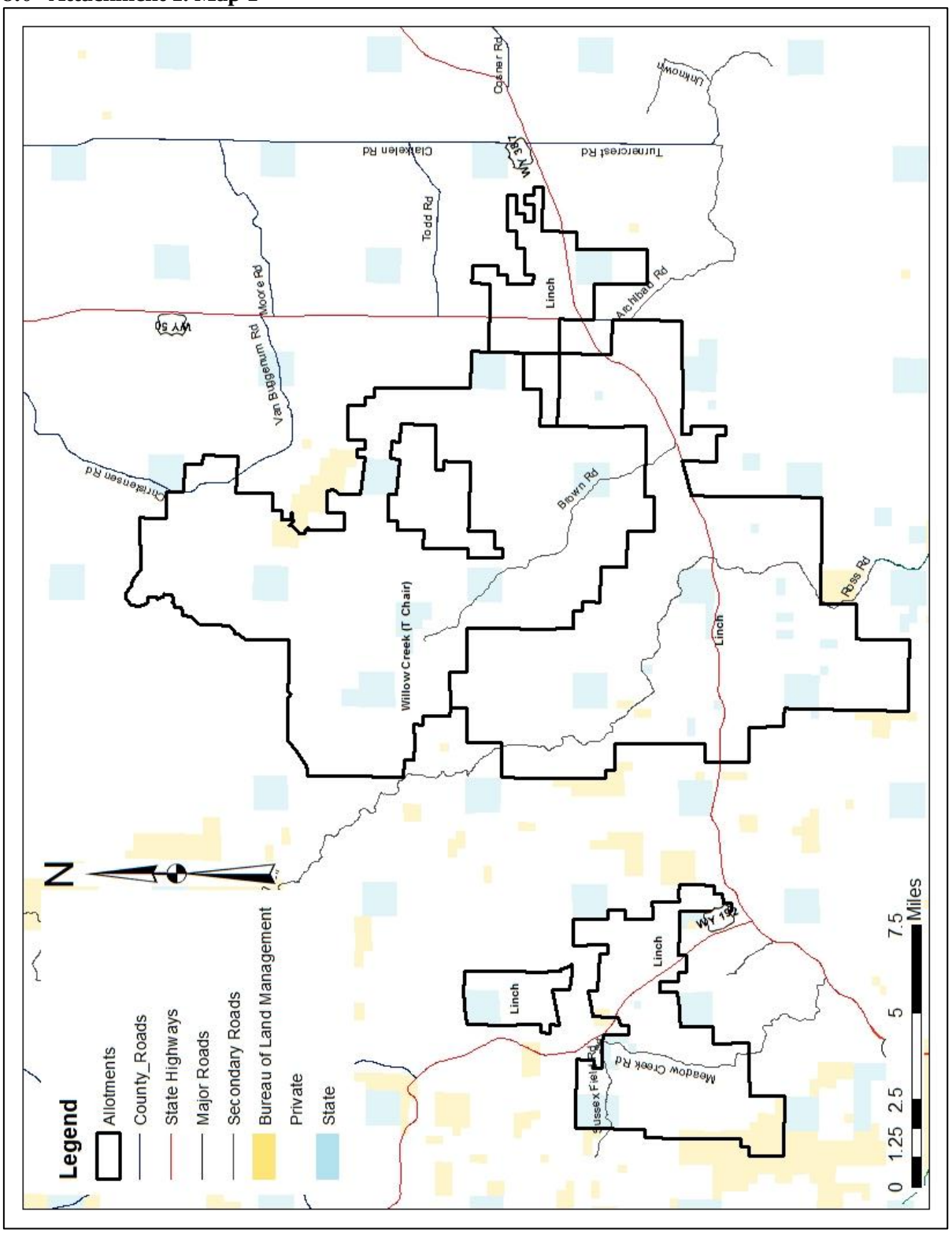
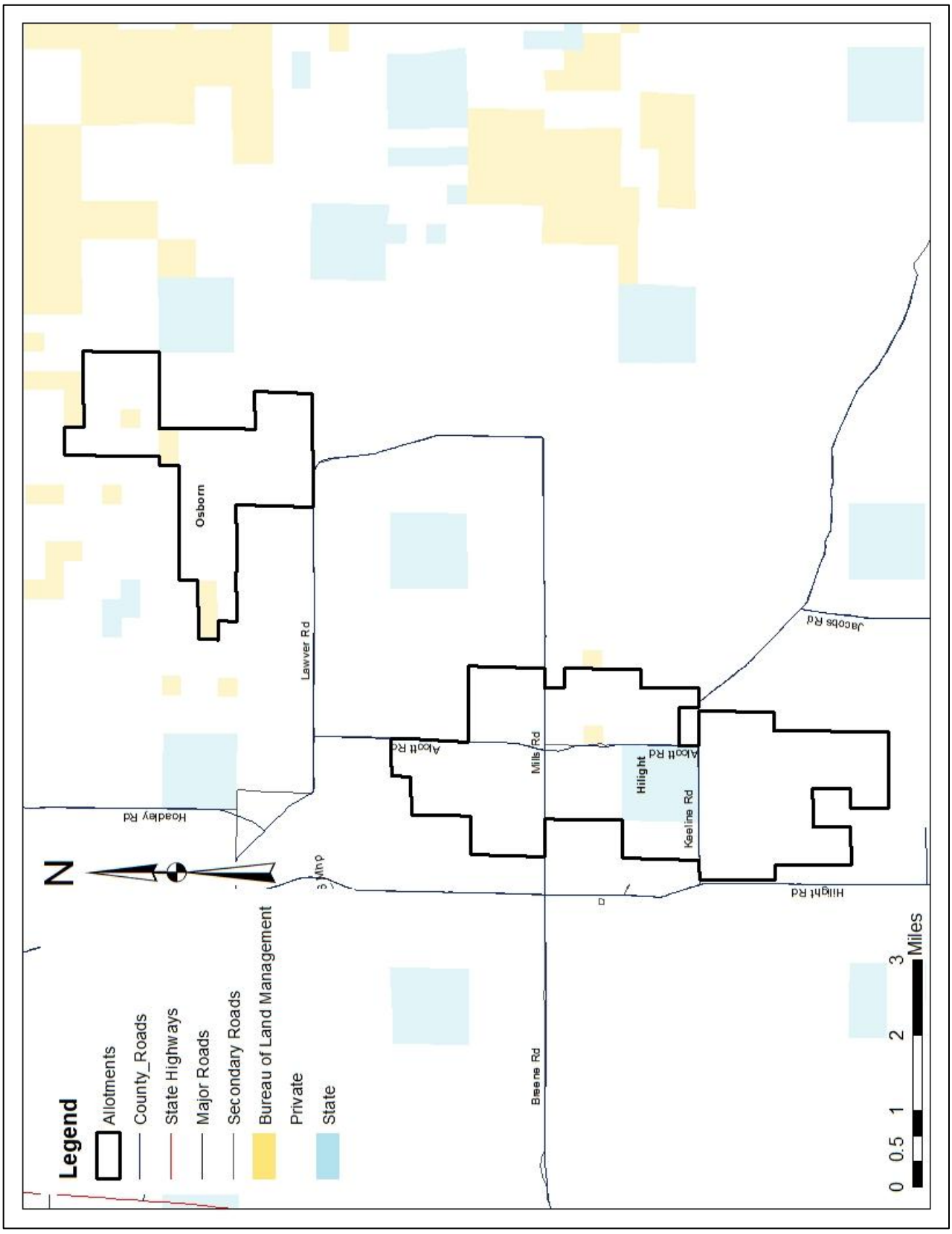
8.0 Attachment 1. Map 1



8.0Attachment 1. Map 2



9.0 Appendix 1. Tables.

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

Common Name (scientific name)	Habitat	Presence	Project Effects	Rationale
Proposed				
Northern Long-eared Bat	Conifer and deciduous forest, caves and mines	NP	NE	The project area is outside the species' range, and the species is not expected to occur. Only known to occur in extreme Northeast WY (mainly Crook and Weston counties, very limited in northern Campbell county.)
Candidate				
Greater Sage-grouse	Basin-prairie shrub, mountain-foothill shrub	K	MIIH	Habitat present and species is known to occur.

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

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 the continued existence of the species
MIIH – May impact individuals and habitat
NP - Habitat not present and species unlikely to occur within the project area.

Table A.3. Summary of Sensitive Species Habitat and Project Effects. (Tables 1 & 2: delete species row if no habitat, none present, unless T, E, or C)

Common Name (scientific name)	Habitat	Presence	Project Effects	Rationale
Amphibians				
Northern leopard frog (Rana pipiens)	Beaver ponds and cattail marshes from plains to montane zones.	NP	NI	Habitat not present.
Columbia spotted frog (*R*anus pretiosa)	Confined to headwaters of the S Tongue R drainage and tributaries.	NP	NI	The project area is outside the species' range, and the species is not expected to occur.
Fish				
Yellowstone cutthroat trout (Oncoryhynchus clarki bouvieri)	Cold-water rivers, creeks, beaver ponds, and large lakes in the Upper Tongue sub-watershed	NP	NI	The project area is outside the species' range, and the species is not expected to occur.
Birds				
Baird's sparrow (Ammodramus bairdii)	Shortgrass prairie and basin-prairie shrubland habitats; plowed and stubble fields.	NP	NI	Habitat not present.
Bald eagle (Haliaeetus leucocephalus)	Mature forest cover often within one mile of large water body with reliable prey source nearby.	K	NI	Proposed action will not have additive effects to the species.
Brewer's sparrow (Spizella breweri)	Sagebrush shrubland	K	MIIH	Nesting & foraging habitat may be impacted by dust, noise, human activities, and direct loss. Species may avoid area.

Common Name (scientific name)	Habitat	Presence	Project Effects	Rationale
Ferruginous hawk (Buteo regalis)	Basin-prairie shrub, grasslands, rock outcrops	K	MIIH	Documented nests occur within 0.5 miles of the project. Nesting & foraging habitat may be impacted by dust, noise, human activities, and direct loss. Species may avoid area.
Loggerhead shrike (Lanius ludovicianus)	Basin-prairie shrub, mountain-foothill shrub	S	MIIH	Some mountain-foothill shrub habitat is present.
Long-billed curlew (Numenius americanus)	Grasslands, plains, foothills, wet meadows	S	MIIH	Nesting & foraging habitat may be impacted by dust, noise, human activities, and direct loss. Species may avoid area
Mountain Plover	Short-grass prairie with slopes < 5%	S	MIIH	Nesting & foraging habitat may be impacted by dust, noise, human activities, and direct loss. Species may avoid area
Northern goshawk (Accipiter gentilis)	Conifer and deciduous forests	NP	NI	Habitat not present.
Peregrine falcon (Falco peregrinus)	Cliffs	NP	NI	Habitat not present.
Sage sparrow (Amphispiza billneata)	Basin-prairie shrub, mountain-foothill shrub	NP	NI	Habitat not present.
Sage thrasher (Oreoscoptes montanus)	Basin-prairie shrub, mountain-foothill shrub	K	MIIH	Nesting & foraging habitat may be impacted by dust, noise, human activities, and direct loss. Species may avoid area
Trumpeter swan (Cygnus buccinator)	Lakes, ponds, rivers	NP	NI	Habitat not present.
Western Burrowing owl (Athene cunicularia)	Grasslands, basin-prairie shrub	K	MIIH	Nesting & foraging habitat may be impacted by dust, noise, human activities, and direct loss. Species may avoid area
White-faced ibis (Plegadis chihi)	Marshes, wet meadows	NP	NI	Habitat not present.
Yellow-billed cuckoo (Coccyzus americanus)	Open woodlands, streamside willow and alder groves	NP	NI	Habitat not present.
Mammals				
Black-tailed prairie dog (Cynomys ludovicianus)	Prairie habitats with deep, firm soils and slopes less than 10 degrees.	K	MIIH	Documented colonies may benefit from grazing activities by reducing vegetation cover, although poisoning is known to occur to benefit livestock operations.
Fringed myotis (Myotis thysanodes)	Conifer forests, woodland chaparral, caves and mines	S	NI	Suitable roosting habitat not present. Foraging individuals may be impacted by dust, noise, human activities, or habitat loss. Mitigation excluding birds and bats from production facilities will reduce mortality risk.
Long-eared myotis (Myotis evotis)	Conifer and deciduous forest, caves and mines	S	NI	Construction may impact foraging areas and alter habitat conditions.
Spotted Bat (Euderma maculatum)	Prominent rock features in extreme, low desert habitats to high elevation forests.	NP	NI	Habitat not present.

Common Name (scientific name)	Habitat	Presence	Project Effects	Rationale
Swift fox (Vulpes velox)	Grasslands	K	NI	Renewals will not have additive impacts to the species.
Townsend's big-eared bat (*Corynorhinus townsendii*)	Caves and mines.	NP	NI	Construction may impact foraging areas and alter habitat conditions.
Plants				
Limber Pine (Pinus flexilis)	Mountains, associated with high elevation conifer species	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	Project area outside of species' range.

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.3. This EA Incorporates by Reference the Following NEPA Analysis from the Analysis Area of the Proposed Allotments

#	Operator / Project Name	NEPA Document #	Proposed Allotment Analysis Area	Approval
1	Devon / West Pine Tree Kokanee	WY-070-EA06-114	Linch #02325	2007
2	Devon / West Pine Tree Unit Grayling	WY-070-EA10-332	Linch #02325	2011
3	Anadarko / Dry Willow Phase 1	WY-070-EA07-048	Willow Creek (T Chair)	2007