Bureau of Land Management, Buffalo Field Office
North Scotch, Johnson Creek, & Mountain (Elm) Allotments Grazing Lease Renewals
Environmental Assessment (EA), WY-070-EA12-90

1.0 Introduction

PROJECT TITLE: North Scotch, Johnson Creek, & Mountain (Elm) Allotments Term Grazing Lease Renewals

LOCATION: **North Scotch Allotment (02444):** T45N, R85W: Sec. 6: Lot 6, NE¼SW¼; T45N, R86W: Sec.1: S½NE¼, NE¼SE¼, 201 acres of public land.
Johnson Creek Allotment (02460): T46N, R84W: Sec.6: Lots 8,9, NE¼SW¼, N½SE¼; T47N, R84W: Sec.31: E½SW¼, W½SE¼, 354 acres of public land.
Mountain (Elm) Allotment (02449): T47N, R85W: Sec.5: Lots 8,9,14, Sec.8: E½NE¼, NE¼SE¼, 241 acres of public land.
(See attached maps)

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CASEFILE NUMBERS: 4907235; 4907577; 4907087

APPLICANTS: Mike Curuchet; Adami Ranch, LLC; Walter Elm.

This site-specific Environmental Assessment (EA) tiers to and incorporates by reference the Buffalo Resource Management Plan (RMP) dated October 4, 1985, and the 2001 amendment. This EA follows the format in Chapter 8 of the BLM National Environmental Policy Act Handbook, H-1790-1.

1.1 Background

Mike Curuchet owns the base property associated with the North Scotch Allotment, Adami Ranch, LLC controls the base property associated with the Johnson Creek Allotment, and Walter Elm controls the base property associated with the Mountain (Elm) Allotment. Each party currently holds the grazing authorization for their respective allotment. The previous grazing leases expired in 2008. Mike Curuchet, Adami Ranch, and Walter Elm applied for renewal of the grazing leases authorizing grazing on the North Scotch, Johnson Creek, and Mountain (Elm) Allotments, respectively. Per 43 CFR 4110, the applicants have preference in retaining the grazing privileges attached to this property.

Adami Ranch and Walter Elm lease the base property associated with these allotments from the landowners—Kuhn Ranch, LLC and Guy Mitchell, respectively. The terms of the proposed leases coincide with the terms of the lease agreement between the landowner and lessee, and expire with termination of the base property lease.

These three allotments are being analyzed in a single document due to their proximity to one another, similar vegetative and topographic characteristics, and because they are all located within the Middle Fork Powder River watershed. 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.

1.2 Purpose and Need for the Proposed Action

The BLM promotes healthy sustainable rangeland ecosystems and provides for the sustainability of the western livestock industry and communities that are dependent upon productive, healthy public rangelands while complying with land use plans and multiple use objectives, including environmental and economic values, as provided in 43 CFR 4100, the Taylor Grazing Act of 1934 and the Federal Land Policy and Management Act of 1976. The proposed action would allow livestock grazing on public land through the exercise of grazing preference attached to controlled base property while considering these multiple use objectives (43 CFR 4110).

There is need for the action due to the requirement that an individual or group desiring to graze livestock on public land must hold a valid grazing authorization in the form of a permit or lease; the BLM is to balance the authorization with other uses of public land. The current grazing lessee has a preference to receive the authorization if grazing is to continue on the associated allotment. The BLM issued the current grazing leases in 2008 under Public Law 106-291 allowing for authorization of grazing leases until completion of environmental analysis.

1.3 Decision to be Made

The BLM will decide whether or not to issue a grazing lease with no change in terms and conditions to Mike Curuchet for the North Scotch Allotment, to Adami Ranch for the Johnson Creek Allotment, and to Walter Elm for the Mountain (Elm) Allotment, and how to balance the proposed action with multiple public uses.

1.4 Conformance with Land Use Plan and Other Laws, Regulations, and Policies

The Proposed Action is in conformance with the Record of Decision for the Buffalo Resource Management Plan approved October 4, 1985, the 2001 and 2011 amendments, 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.

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

- Taylor Grazing Act of June 30, 1934
- Federal Land Policy and Management Act of 1976 (43 U.S.C. 1701 et seq.)
- Public Rangelands Improvement Act of 1978
- Endangered Species Act of 1973
- 43 CFR § 4100 Grazing Administration-Exclusive of Alaska
- Clean Water Act Section 303d
- National Historic Preservation Act of 1966 Section 106
- National Environmental Policy Act of 1969

- 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
- Grazing Regulations as codified in 43 CFR § 4100 as amended in 2005
- DOI Secretarial Order No.3310—Protecting Wilderness Characteristics on Lands Managed by the BLM, Dec. 2010
- BLM Instruction Memorandum No. WY-2012-019, Greater Sage-Grouse Habitat Management Policy on Wyoming Bureau of Land Management Administered Public Lands including the Federal Mineral Estate

BLM IM WY-2012-019 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. In addition, there is little to no sage-grouse habitat present. These allotments are category "C" allotments, meaning their management is custodial in nature. Intensive management of category "C" grazing allotments is at a public cost which largely outweighs public benefit; see generally, Ted Lapis v. U.S., 178 IBLA 62 (2009).

1.4.1 Wyoming Standards for Rangeland Health

Particularly applicable to livestock grazing management by the BLM are the Wyoming Standards for Healthy Rangelands and Guidelines for Livestock Grazing Management. The Secretary of the Interior developed and approved the Standards and Guidelines on August 12, 1997. They address watersheds, ecological condition, water quality and habitat for special status species. These policies and guidelines are critical to achieving ecologically sustainable range management.

The regulation at 43 CFR 4180.1 details four fundamentals of rangeland health. They are:

1. Watersheds are in or are making progress toward properly functioning physical condition, including their upland, riparian-wetland, and aquatic components; soil and plant conditions support water infiltration, soil moisture storage, and the release of water that are in balance with climate and landform and maintain or improve water quality, water quantity, and timing and duration of flow.

2. Ecological processes including the hydrologic cycle, nutrient cycle, and energy flow are maintained, or there is significant progress toward their attainment, in order to support healthy biotic populations and communities.

3. Water quality complies with state water quality standards and achieves, or is making significant progress toward achieving established BLM management objectives such as meeting wildlife needs.

4. Habitats are, or are making significant progress toward, being restored or maintained for Federal threatened and endangered species, Federal Proposed, Category 1 and 2 Federal Proposed Candidate and other special status species.

The BLM developed the Wyoming Standards for Healthy Public Rangelands and Guidelines for Livestock Grazing Management (S&Gs) to achieve the four fundamentals of rangeland health detailed above. These Standards relate the minimal acceptable conditions for BLM administered public rangelands, including the health, productivity, and sustainability of the land. Observing, measuring, and monitoring field conditions of range sites, on a watershed scale, determine whether a Standard is being achieved. In accordance with the grazing regulations, if livestock grazing practices are found to be contributing to a failure to meet a Standard, corrective action is developed and implemented before the next grazing season. Guidelines provide reasonable, responsible, and cost-effective management practices at the grazing allotment and watershed levels to attain and maintain rangeland Standards. These management practices either maintain existing desirable conditions or move rangelands toward statewide Standards within reasonable timeframes.

The six Standards for Healthy Public Rangelands are:

> Standard 1: Within the potential of the ecological site (soil type, landform, climate, and geology), soils are stable and allow for water infiltration to provide for optimal plant growth and minimal surface runoff.
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> Standard 2: Riparian and wetland vegetation have structural, age, and species diversity characteristic of the state of channel success and is resilient and capable of recovering from natural and human disturbance in order to provide forage and cover, capture sediment, dissipate energy, and provide for ground water recharge.
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> Standard 3: Upland vegetation on each ecological site consists of plant communities appropriate to the site which are resilient, diverse, and able to recover from natural and human disturbance.
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> Standard 4: Rangelands are capable of sustaining viable populations and a diversity of native plant and animal species appropriate to the habitat. Habitats that support or could support threatened species, endangered species, species of special concern, or sensitive species will be maintained or enhanced.
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> Standard 5: Water Quality meets state standards.
>
> Standard 6: Air Quality meets state standards.

The Buffalo RMP has been amended to adopt the Wyoming Standards for Healthy Rangelands. An assessment of the S&Gs has not yet been conducted for the North Scotch, Johnson Creek, or Mountain (Elm) Allotments. These allotments are "C" category allotments, which are low priority for evaluation (see Section 3.3). 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).

1.5 Scoping and Issues

The BLM conducts its decision-making in accordance with the requirements of the Council on Environmental Quality (CEQ) regulations implementing 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 to involve the interested public in their decision-making.

This EA received internal scoping. The identified issues are:

- How would the proposed action affect current livestock grazing management?
- Would the proposed action impact riparian areas?
- Would the proposed action impact invasive species?
- Would and how would the proposed action affect any special status species, particularly sage-grouse (candidate species)?
- Would the proposed action impact big game habitat?
- Would the proposed action impact migratory bird habitats or populations?
- Would the proposed action impact cultural resources and/or lands with wilderness characteristics?

A draft version of this EA is 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 draft 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 final EA.

2.0 PROPOSED ACTION AND ALTERNATIVES

2.1 Alternative A – No Livestock Grazing

Under this alternative the BLM will not permit livestock grazing on the North Scotch, Johnson Creek, and Mountain (Elm) Allotments. The existing grazing leases will be cancelled in accordance with 43 CFR parts 4100 and 1600 to eliminate grazing on the allotments.

2.2 Alternative B- Proposed Action – Issuance 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.

The BLM also proposes to issue new 10-year term grazing leases to Mike Curuchet for the North Scotch Allotment, to Adami Ranch, LLC for the Johnson Creek Allotment, and to Walter Elm for the Mountain (Elm) Allotment. There are no modifications to the terms and conditions outlined in the expiring leases. Table 1 lists the details of these BLM grazing leases.

Table 1

Allotment*	Livestock		Season of Use	% PL	AUMs	Type Use
	Number	Kind				
North Scotch Allotment (02444)	715	Sheep	6/15 – 9/15	19	83	Active
Johnson Creek Allotment (02460)	100	Cattle	6/01—11/02	6	31	Active
Mountain (Elm) Allotment (02449)	80	Cattle	7/01—9/25	5	11	Active

*BLM recognizes that these allotments consist primarily of non-federal lands. 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.

The proposed action will issue new 10-year term grazing leases to Mike Curuchet, Adami Ranch, and Walter Elm. All 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."

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.

3.0 AFFECTED ENVIRONMENT

3.1 Introduction

3.1.1 Location

The North Scotch, Johnson Creek, and Mountain (Elm) Grazing Allotments are about thirty miles northwest of Kaycee, Wyoming in western Johnson County. The allotments are mixtures of public, private, and state lands (lands managed by the Office of State Lands and Investments). Private lands compose the majority of each allotment, with one 201 acre parcel of BLM land in the North Scotch Allotment, two parcels of BLM totaling 354 acres in the Johnson Creek Allotment, and one 241 acres parcel of BLM in the Mountain (Elm) Allotment. There is no legal public access to the public lands in the North Scotch and Johnson Creek allotments. There is cross-country public access to BLM land in the Mountain (Elm) Allotment via state and Forest Service land.

3.1.2 General Description

The North Scotch (NS), Johnson Creek (JC), and Mountain (Elm) (ME) Allotments are typical of the land forms, soils, and vegetation in the area of influence for the southern Bighorn Mountains. Differences in dominant species within the allotment vary with soil type, aspect, topography, and water availability. Annual precipitation and growing season are the principal factors limiting forage production. Floodplains and lowlands with streams are the most productive sites and the very steep escarpments, ridges, and slopes are the least productive.

The soils within the NS, JC, and EM Allotments vary greatly depending on topographic location, slope, elevation, and precipitation. The climate of the area is characterized by moderate amounts of precipitation, averaging between 15 and 19 inches annually. The majority of soils within these allotments are loams.

Wyoming big sagebrush is a significant component of the plant community associated with loamy sites, especially in the JC and NS allotments, with densities ranging from 2-12% throughout the allotments. The ME allotment also contains a significant amount of forested habitat. This vegetative community is dominated by Limber pine, lodgepole pine, and Douglas fir trees. Cool-season mid-grasses make up the majority of the understory in both communities, with the balance made up of short warm-season grasses, introduced annual grasses, and miscellaneous forbs. The dominant cool season mid-grass species include Idaho fescue (*Festuca idahoensis*), green needlegrass (*Nassella viridula*), needleandthread (*Hesperostipa comata*), and rhizomatous wheatgrasses. Grasses can account for up to 75% of the vegetation in this type of ecological site. With elevations ranging from 7000 to 8500 feet, the growing season is short, consisting of the months of May 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.

The public land in the NS allotment is clearly lacking in wilderness characteristics due to its small size (less than 5,000 acres). The public land in the ME is contiguous with a 5,730 acre tract of public land, but this tract is clearly lacking in wilderness characteristics due to the presence of several mechanically maintained roads throughout the parcel.

BLM-administered lands within the Johnson Creek grazing allotment are within the North Fork Wilderness Study Area (WSA). These lands are subject to the Interim Management Policy and Guidelines for Lands Under Wilderness Review (BLM Manual 8550). Livestock grazing is considered compatible with WSA or wilderness designation and will not affect wilderness values. There are no proposed range improvements; and this proposal will not affect wilderness values or constrain future decisions about the WSA or its management.

3.1.3 Energy Development

The BLM permits federal mineral development (coal bed natural gas, conventional oil, and coal) 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 one to 200 wells. Currently the NS, JC, and ME Allotments do not lie within any mineral development.

This grazing lease issuance 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	Wild and Scenic Rivers
Prime or Unique Farmlands	Recreation	Wilderness Values
Flood Plains	Soils	
Hazardous or Solid Wastes	Traditional Cultural Properties	

3.2 Cultural Resources

Class III inventory for cultural resources has not occurred on the North Scotch or Johnson Creek allotments, and no known cultural resources exist. Cultural inventory has been conducted on portions of the Mountain (Elm) allotment and led to the discovery of cultural resources. The Mountain (Elm) allotment contains 3 known cultural sites, 1 of which is unevaluated for the National Register of Historic Places and 2 are not eligible. There may be many more unrecorded cultural sites, some which may be eligible for listing on the National Register, within the allotment.

3.3 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 NS, JC, and ME allotments are category "C" allotments, meaning their management is minimal in nature, due to the small and isolated nature 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 a low potential for yielding a positive return on public investment in management or rangeland project development.

The North Scotch Allotment consists of 201 acres of public land and 846 acres of deeded land. There are 83 AUMs associated with the federal lands in the allotment. The Johnson Creek allotment consists of 354 acres of public land and 1515 acres of deeded land. There are 31 AUMs associated with the public lands in the allotment. The Mountain (Elm) allotment consists of 241 acres of BLM land and 1461 acres of deeded land. There are 35 AUMs associated with the federal lands. In all three allotments, grazing of public land parcels is in conjunction with deeded lands.

3.4 Invasive Species/Noxious Weeds

Invasive species and noxious weeds exist in the affected environment. The primary species in the allotment are downy brome *(Bromus tectorum*) and Japanese brome (*Bromus Japonicus).* These *Bromus* species occur in such high densities and numerous locations throughout Northeast Wyoming that a control program is not considered feasible at this time.

3.5 Wetlands and Riparian Zones

The North Fork Powder River and Johnson Creek run through the Johnson Creek allotment. Of the 2.5 miles of Johnson Creek that flows through the allotment, only approximately 0.25 miles of the stream are located on BLM land. Approximately 1.3 miles of the North Fork Powder River flow through the eastern portion of the JC allotment, with about 0.9 miles of the river located on BLM land. Both of these waterways are located at the bottom of steep, rocky canyons, which discourage livestock from entering these areas. In the adjacent Township 46N, Range 84W, Sections 5 and 8, livestock grazing is excluded from BLM lands along the North Fork Powder River due to steep topography and in order to prevent riparian degradation. The North Fork was rated in Proper Functioning Condition in 1993, and there have been no changes to management strategy since that time. Remoteness and inaccessibility limit monitoring opportunities, but the North Fork Powder River is expected to be in Proper Functioning Condition at this time.

Any other stream channels lying on public land in these three allotments are intermittent streams. 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.

3.6 Wildlife, Migratory Birds, Threatened & Endangered, Candidate and Sensitive Species

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 issuance of these grazing leases on the NS, JC, and ME 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 NS, JC, and ME allotments are results of a complex history of natural and man-caused influences. Important natural influences included short- and long-term climate variation, infrequent wildfire, and ungulate grazing; especially by bison (Baker 2006; Mack and 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 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 and Miller 1954). Enactment of the Taylor Grazing Act of 1934 repaired early range degradation and aided the recoveries of reduced wildlife populations (Patterson 1952).

The following tables summarize the affected environment relative to selected wildlife.

Table 2. Summary of Species Habitat and Project Effects.

Common Name (scientific name)	Habitat	Presence	Project Effects	Rationale
Amphibians				
Columbia Spotted frog (*Ranus pretiosa*)	Breeds in the shallows of lakes, ponds, marshes, and small streams (NatureServe).	S	MIIH	Habitat may be present. Individuals or eggs may be trampled.
Northern leopard frog (*Rana pipiens*)	Beaver ponds, permanent water in plains and foothills (SS Policy). Swampy, cattail marshes on the plains (WGFD CWCS).	S	MIIH	Habitat may be present. 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.	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.
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 wher 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	Roosting and nesting habitat is present within one mile of the allotments. Bald eagles may use the area for foraging. At least one individual has been observed 2 miles from the ME and JC allotments near Dull Knife Reservoir. 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).	NS	NI	Habitat not present.
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	NI	Ferruginous hawks may forage in this area. Livestock activity should not affect foraging behavior.
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 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).	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. Ongoing livestock operations should not create significant additional impacts.
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.
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).	S	MIIH	Some suitable plover habitat may be present. Birds may prefer grazed areas. 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).	S	NI	Habitat is present in the JC and ME allotments. Ongoing livestock operations will not affect species.
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).	S	NI	Nest substrate is present in the allotments. Ongoing livestock operations should not affect species.

Common Name (scientific name)	Habitat	Presence	Project Effects	Rationale
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. Ongoing livestock operations are not likely to change use of this area by Sharp-tailed grouse.
Sage sparrow (*Amphispiza billneata*)	Basin-prairie shrub, mountain-foothill shrub (SS Policy). Considered a sagebrush obligate. Inhabits prairie and foothills shrubland 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 unfragmented 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 a sagebrush obligate. Inhabits prairie and foothills shrubland 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 bulrushes, cattails, or reeds; on a floating mat; or in a low tree.	S	MIIH	Habitat may be present in the allotments. Nests may be trampled.
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.	S	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.
Fish				
Yellowstone cutthroat trout (*Oncoryhynchus clarki bouvieri*)	Mountain streams and rivers in Tongue River drainage	NP	NI	Habitat not present.

Common Name (scientific name)	Habitat	Presence	Project Effects	Rationale
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).	NS	BI	No colonies have been identified. Prairie dogs often prefer habitats grazed by livestock.
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).	S	MIIH	Some individuals may be disturbed by livestock.
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).	S	MIIH	Some individuals may be disturbed by livestock.
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	S	NI	Habitat is present in the allotments. Roost sites in cliffs should not be disturbed by ongoing livestock operations.

Common Name (scientific name)	Habitat	Presence	Project Effects	Rationale
	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).			
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).	NS	MIIH	Inappropriate grazing could reduce hiding cover and increase susceptibility to predation.
Townsend's big-eared bat (*Corynorhinus townsendii*)	Caves and mines (SS Policy). Occupies a variety of xeric to mesic 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 avaiilability 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.	S	NI	Availability of roost sites is unknown, but 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.	K	MIIH	Limber pine may be present in association with conifer species. Livestock may forage on young seedlings.
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.	S	MIIH	Modeled habitat is present in the allotment. Individual plants may be trampled.

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 3. Summary of Threatened and Endangered Species Habitat and Project Effects

Common Name (scientific name)	Habitat	Presence	Project Effects	Rationale
Threatened				
Ute ladies'-tresses orchid (*Spiranthes diluvialis*)	Riparian areas with permanent water, sub-irrigated meadows.	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 no identified leks located within the allotments or within 4 miles of the allotments. There is no modeled habitat present in the allotments, but the North Scotch allotment may provide suitable summer habitat for grouse. 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 sage-grouse.

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.

3.6.1 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 (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 not present in the JC and ME allotments, but is present on BLM lands in the NS allotment. There are no known leks within the allotments, or within four miles of the allotments. The NS allotment likely provides habitat for a population of sage-grouse that spend summers at high elevations.

As noted in BLM WY-IM-2010-012, 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 et al. 2007)."

3.6.2 Big Game

Big game species occurring within the North Scotch, Johnson Creek, and Mountain (Elm) allotments include elk, pronghorn, and mule deer. The following table (Table 4) summarizes WGFD big game seasonal range data for the allotments.

Table 4

Big Game Species	Seasonal habitat provided in North Scotch Allotment	Seasonal habitat provided in Johnson Creek Allotment	Seasonal habitats provided in the Mountain (Elm) Allotment
Elk	Yearlong	Crucial winter-yearlong, Spring, Summer, Fall	Spring, Summer, Fall
Mule deer	Spring, Summer, Fall	Spring, Summer, Fall	Spring, Summer, Fall
Pronghorn	Yearlong	Spring, Summer, Fall	None

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. Crucial ranges are seasonal habitats which are determining factors in a population's ability to maintain itself.

The Johnson Creek provides crucial winter-yearlong range for elk. This means that this area is used by elk throughout the year; however, in the winter months, availability of this habitat is a determining factor in the population's ability to maintain itself.

As of the most recent available report, populations of pronghorn within their respective hunt areas are above WGFD objectives (WGFD 2009a). Populations of mule deer are below their WGFD objective.

4.0 ENVIRONMENTAL EFFECTS

This section describes the environmental consequences of the no action alternative (Alternative A), and those of the proposed action, Alternative B. The effects analysis addresses the direct and indirect effects of implementing the proposed action, the cumulative effects of the proposed action combined with reasonably foreseeable Federal and non-federal actions, identifies mitigation measures, and discloses any residual effects.

4.1 Direct and Indirect Effects

4.1.1 Cultural Resources

Alternative A- No Grazing

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

Alternative B- Lease Renewal & Issuance

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 February 14, 2012 the Bureau electronically notified the Wyoming State Historic Preservation Office (SHPO) of this grazing lease renewal.

4.1.2 Livestock Grazing

Alternative A- No Grazing

FLPMA requires the BLM to manage public lands and resources according to the principals 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 EA. 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.

Alternative B- Lease Renewal & Issuance

Rangeland vegetation inventory (MRB 1957) 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 leases authorize the same numbers and kind of livestock and season of use as the expiring leases. 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.

4.1.3 Invasive Species/Noxious Weeds

Alternative A- No Grazing

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 risk of wildfire. These fires would also be more intense, 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.

Alternative B- Lease Renewal & Issuance

Implementing appropriate grazing use, as described in the Proposed Action, along with ongoing cooperative weed control efforts, benefits the health of the native plant community. A healthy native plant community often provides competition against the establishment and/or spread of noxious weeds. Issuing the grazing lease will not result in any additional impacts in relation to the spread of noxious weeds.

4.1.4 Wetlands and Riparian Zones

Alternative A- No Grazing

Removing livestock grazing from the public land in the North Scotch and Mountain (Elm) allotments will have no effect on wetlands and riparian zones, as none are present on the public lands.

Removing grazing from the Johnson Creek allotment should not affect the North Fork Powder River, because topography already restricts livestock access to the river. The river would likely remain in Proper Functioning Condition.

Alternative B- Lease Renewal & Issuance

Implementation of the proposed action would have no effect on wetlands and riparian zones in the NS and ME allotments, as these areas do not exist on public land in the allotments. Continuing to allow grazing in the Johnson Creek allotment would have a minimal effect, if any, on the North Fork Powder River, because topography already restricts livestock access to the water. If individual livestock did access the river, no major change to riparian condition is expected. The river would likely remain in Proper Functioning Condition.

4.1.5 Wildlife, Migratory Birds, Threatened & Endangered, Candidate and Sensitive Species

The U.S. Fish and Wildlife Service has issued a block clearance for the Powder River Basin for the endangered black-footed ferret and threatened blowout penstemon. These species do not occur in the area.

Alternative A- No Grazing

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. Cancelling grazing may have a negative impact on mountain plover by reducing the number of grazed areas, which provide preferred habitat for this species.

Alternative B- Lease Renewal & Issuance

(See tables in Section 3.6)

The proposed action will have "no effect" Ute ladies'-tresses orchid, as suitable habitat for this species is not present in the allotment. The proposed action is "not likely to jeopardize"—and may benefit—mountain plover, because the birds prefer areas with little vegetative cover (Derner et al. 2009).

4.1.5.1 Candidate Species

Alternative A- No Grazing

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 and Hobbs 2007). Some habitats reach a threshold where livestock exclusion does not have an effect on the current trend (Wambolt and Payne 1986, Sanders and Voth 1983). Other research suggests that rest from livestock grazing in Wyoming big sagebrush habitats may improve understory production while decreasing sagebrush cover (Wambolt and 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 and Bunting 1994, West 1999). Under the no grazing alternative, no benefits to sage-grouse habitat as a result of grazing management would occur.

Alternative B- Lease Renewal & Issuance

The proposed action "will impact" greater sage-grouse habitat. Livestock grazing can benefit or degrade sage-grouse 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 et al. 1979, Fulgham et al. 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 and Wallander 2001, Meritt et al. 2001, Riggs and Urness 1989).

Excessive or poorly managed grazing causes degradation of sagebrush ecosystems and thus sage-grouse 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 and Mitchell 2000, Bork et al. 1998). This may impact sage-grouse, 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 sage-grouse chicks. Inappropriate grazing that damages meadows and riparian areas can harm sage-grouse, because these areas are critical for sage-grouse in late summer. Livestock may occasionally trample sage-grouse nests or cause sage-grouse to abandon their nests (Call 1979, Patterson 1952).

The average stocking rate of approximately 7 acres per AUM on the NS, JC, and ME 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 sage-grouse 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 NS, JC, and ME allotments. However, an assessment of S&Gs was performed in March 2004 on the Hat Ranch allotment, which is located adjacent to the Johnson Creek allotment, and has similar habitat and vegetative features. The assessment found the Johnson Creek allotment in good condition and meeting all standards. Based on this parallel assessment, the BLM expects the NS, JC, and ME allotments to be in a similar condition. Continuing to manage for the Wyoming Standards for Rangeland Health will promote sage-grouse habitat viability.

4.1.5.2 Big Game

Alternative A- No Grazing

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 1949). Additionally, livestock would not remove unpalatable standing dead material, resulting in unimproved forage.

Alternative B- Lease Renewal & Issuance

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

Forage resources on winter ranges typically limit mule deer populations (Clements and Young 1997). Livestock grazing tends to favor shrubs over grasses, and thus may provide more desirable winter browse conditions on the allotments (Austin and Urness 1996, Austin et al. 1986, Smith 1949).

Livestock grazing may enhance big game forage by reducing unpalatable standing dead material (Short and 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 and McCuistion 2008).

Moderate grazing by sheep in late summer has been shown to have no effect on vegetative composition or production in sagebrush-grass range (Harniss and Wright 1982). Therefore, BLM expects no impact to elk, pronghorn or deer on the allotments with appropriate sheep management.

The fences on the allotments pose a hazard to mule deer and pronghorns. 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.

Cattle and elk have more similar dietary preferences than cattle and other big game species, and elk have been shown to prefer sites that have already been grazed by cattle. Proper grazing management can improve winter forage conditions for big game (Anderson and Scherzinger 1975). The moderate amount of grazing occurring in these allotments should not negatively impact wintering elk herds. Livestock grazing has occurred historically on these allotments and the BLM expects no additional impacts from implementation of the proposed action.

4.2 Cumulative Effects

Cumulative effects are those resulting from the incremental impact of an action when added to other past, present, or reasonably foreseeable actions regardless of what agency or person undertakes such other actions. Identified actions include noxious weed control and sage-grouse protection. If future assessments reveal that rangeland health standards are not being met due to livestock grazing, the BLM will address these issues before the start of the next grazing season as required by 43 CFR 4180.

The BLM will continue managing the North Scotch, Johnson Creek, and Mountain (Elm) to achieve the Wyoming Standards for Rangeland Health. All elements of the environment will benefit from rangelands in good health. The applicants are not proposing any projects or other surface disturbance in connection to these lease renewals, and the terms and conditions of the leases will remain the same. Thus any cumulative impacts resulting from the proposed action should be minor.

4.2.1 Noxious Weeds

Noxious weeds/invasive non-native plants are present within the assessment area to varying degrees. Livestock grazing may benefit certain weeds by reducing competition with grasses but may also help control other species through defoliation. Currently the BFO is addressing the situation by mapping weed locations and treating them with herbicides or bio-controls in conjunction with the local weed and pest organizations.

4.2.2 Sage-grouse

The sage-grouse population within northeast Wyoming is exhibiting a steady long term downward trend (WGFD 2008a, USFWS 2010). 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 lek attendance (WGFD 2008b). Habitat fragmentation is the primary attributor to these declines (USFWS 2010).

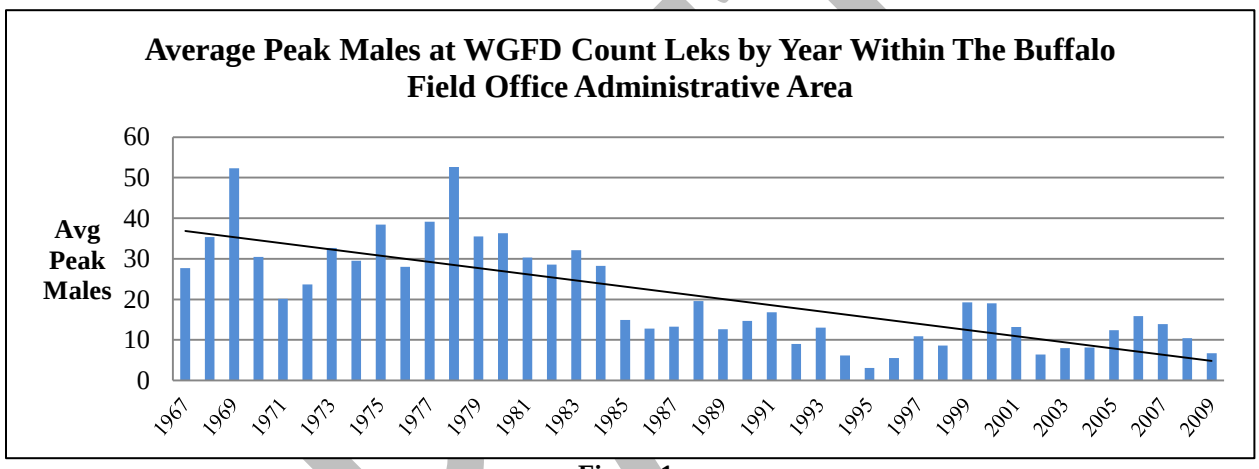

Figure 1

Average peak number of male sage-grouse per active lek and trend line within the BFO 1967-2009

4.3 Mitigation Measures Considered

The terms and conditions included as part of the term grazing leases will mitigate anticipated impacts. No additional mitigation measures are proposed.

4.4 Residual Effects

There are no residual impacts associated with the proposed action.

5.0 Tribes, Individuals, Organizations or Agencies Consulted

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Janelle Gonzales	Rangeland Management Specialist	Invasive Species
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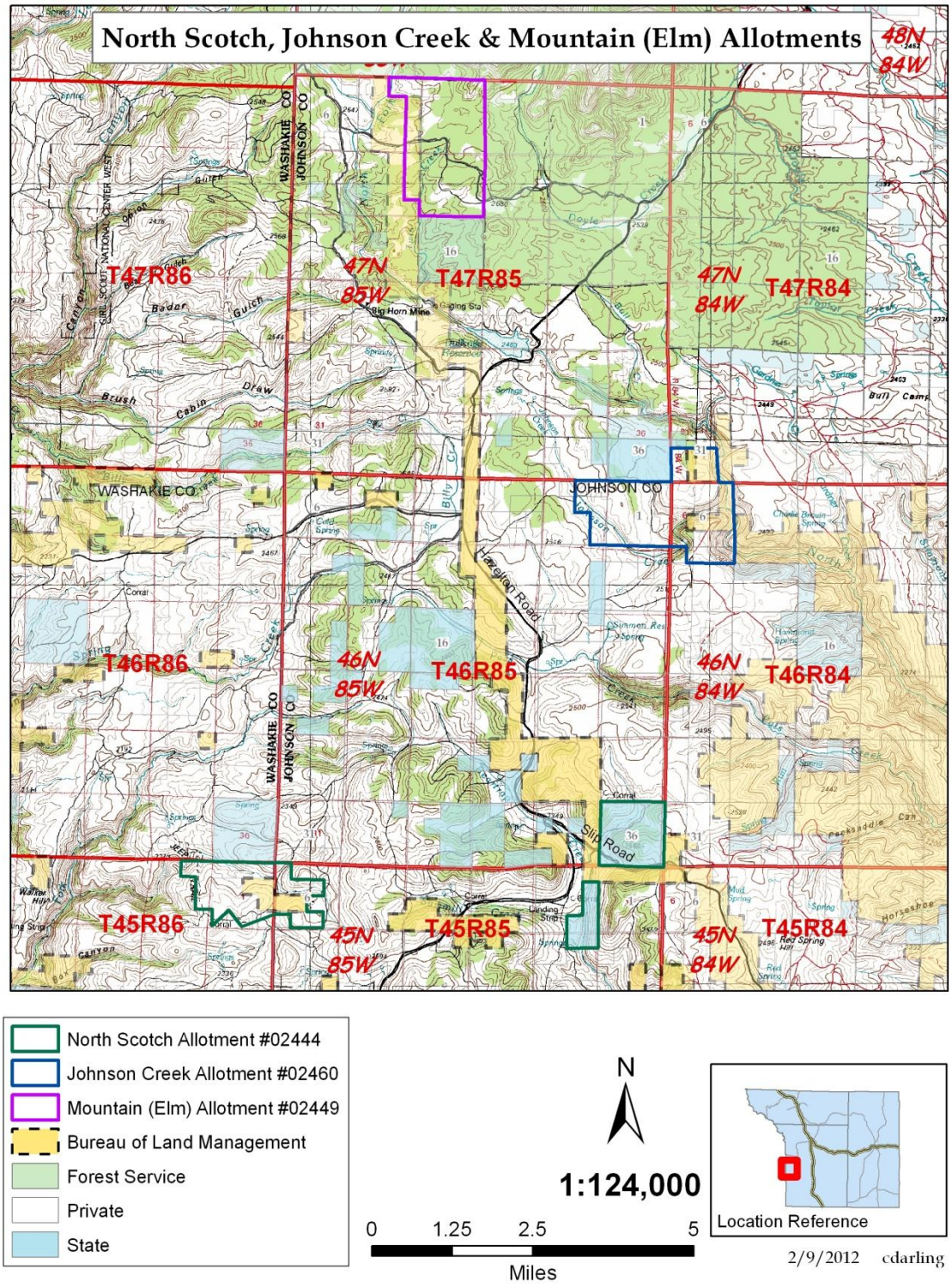
North Scotch, Johnson Creek & Mountain (Elm) Allotments
48N
84W
47N
85W
47N
84W
T47R86
T47R85
T47R84
46N
85W
46N
84W
T46R86
T46R85
T46R84
45N
85W
45N
84W
T45R86
T45R85
T45R84
WASHAKIE CO
JOHNSON CO
Hazelton Road
Slip Road
Big Horn Mine
North Scotch Allotment #02444
Johnson Creek Allotment #02460
Mountain (Elm) Allotment #02449
Bureau of Land Management
Forest Service
Private
State
N
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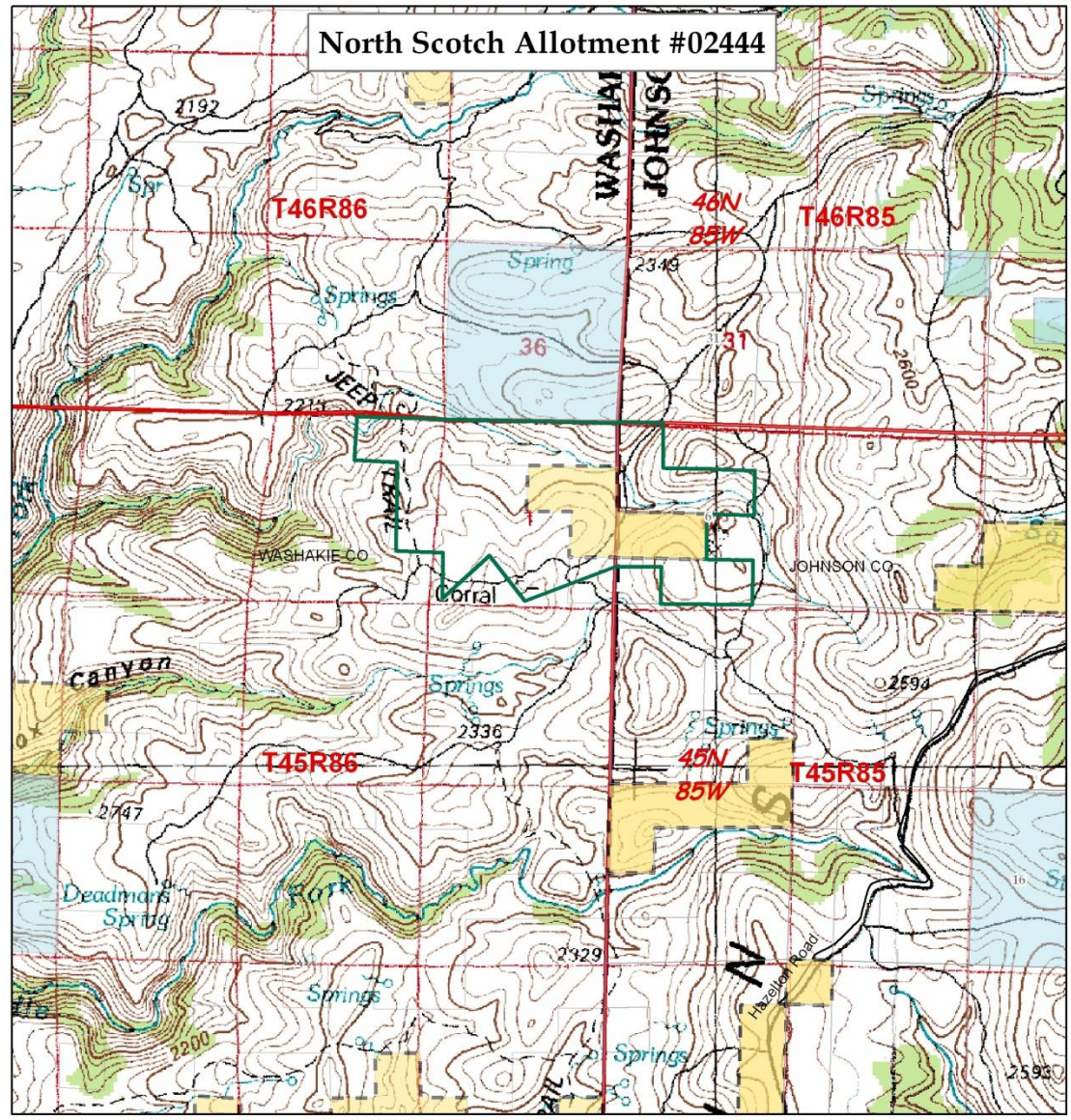
Miles
Location Reference
2/9/2012 cdarling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T46R85
46N
85W
T45R86
T45R85
45N
85W
WASHAKIE CO
JOHNSON CO
Corral
Springs
Spring
Canyon
Deadmans Spring
Fork
Hazelton Road
JEEP TRAIL
36
31
2192
2349
2600
2336
2594
2747
2329
2200
2593
North Scotch Allotment #02444
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Private
State
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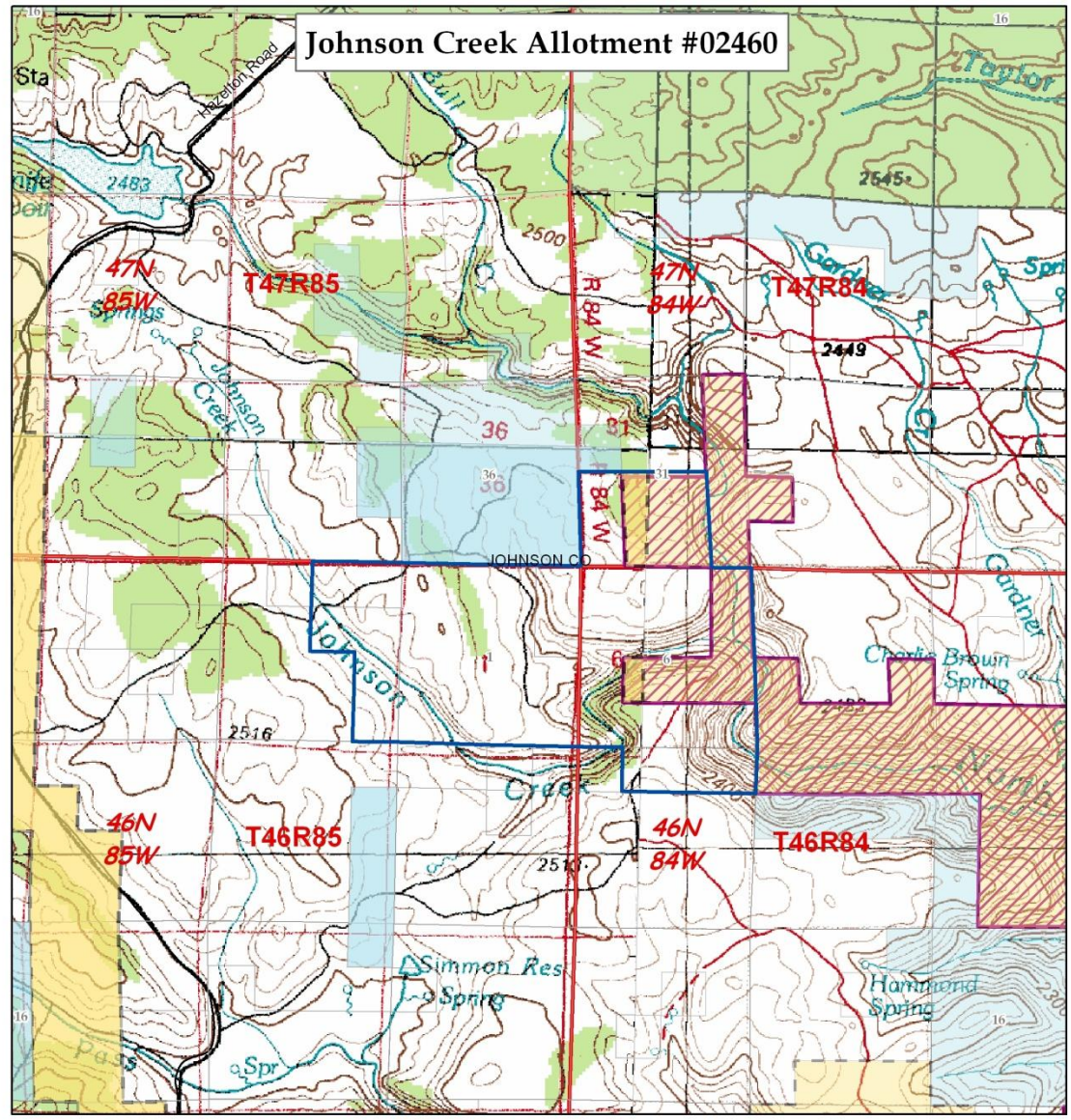
Johnson Creek Allotment #02460
Hazelton Road
Taylor
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2483
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47N
85W
T47R85
47N
84W
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Gardner
2449
Johnson Creek
36
31
84 W
JOHNSON CO
Gardner
Charlie Brown Spring
2516
Creek
46N
85W
T46R85
46N
84W
T46R84
Simmon Res
Spring
Hammond Spring
Johnson Creek Allotment #02460
North Fork Wilderness Study Area
Bureau of Land Management
Forest Service
Private
State
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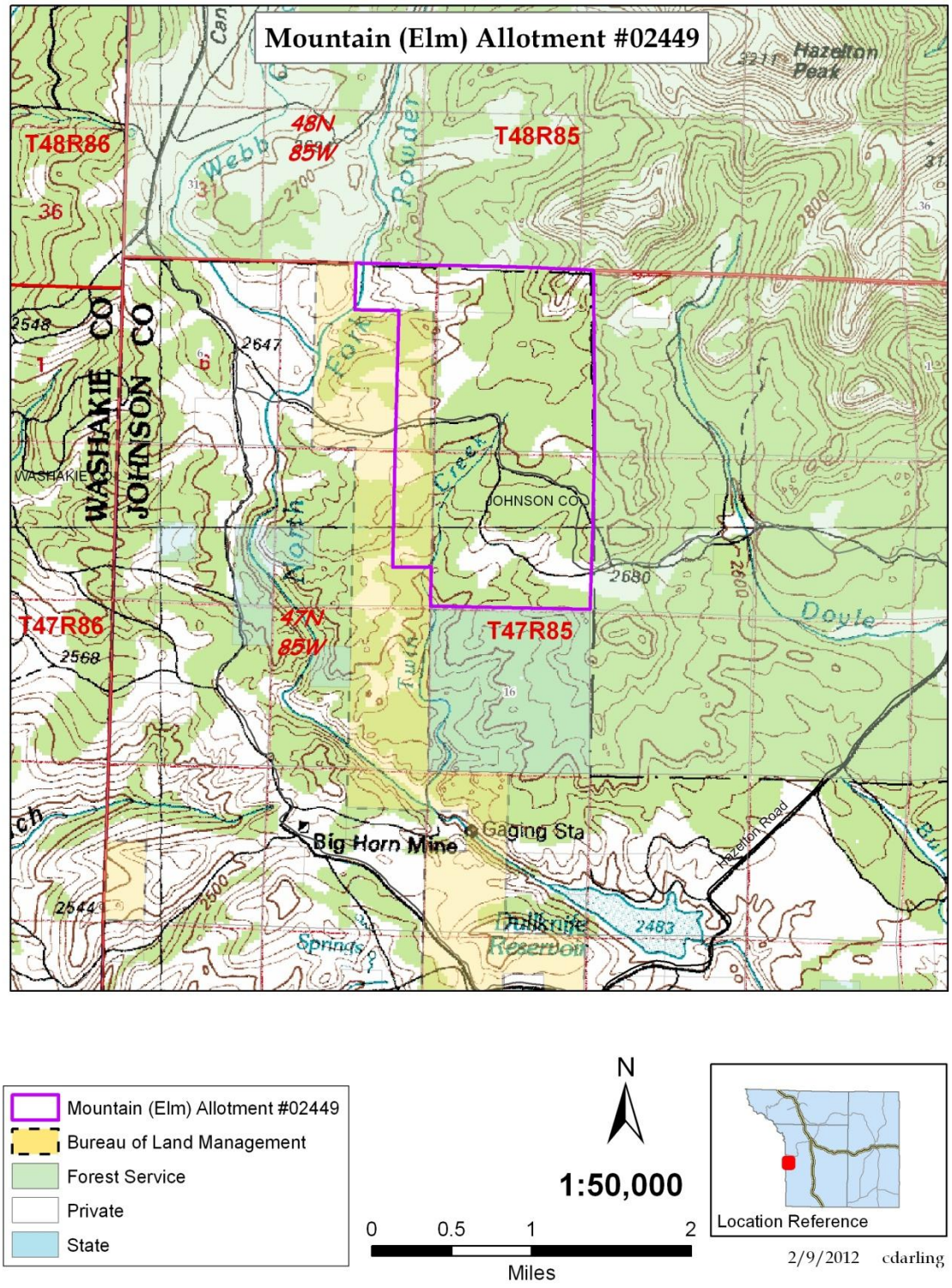
Location Reference
2/9/2012 cdarling


Mountain (Elm) Allotment #02449
T48R86
T48R85
48N
85W
T47R86
T47R85
47N
85W
WASHAKIE CO
JOHNSON CO
Hazelton Peak
Webb Ck
North Fork Powder
Twin Creek
Doyle
Big Horn Mine
Gaging Sta
Hazelton Road
Bullwhip Reservoir
Springs
Mountain (Elm) Allotment #02449
Bureau of Land Management
Forest Service
Private
State
N
1:50,000
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Miles
Location Reference
2/9/2012 cdarling