Environmental Assessment

Lake Creek Allotment No. 00607

Livestock Grazing Permit Transfer/Renewal

Location:
Township. 44 N.
Range 100 W.
Section(s) Various

Applicants:
D.E.L. LLC and
William Murdoch

NATIONAL SYSTEM OF PUBLIC LANDS

March, 2010

The BLM manages more land – 253 million acres – than any other Federal agency. This land, known as the National System of Public Lands, is primarily located in 12 Western States, including Alaska. The Bureau, with a budget of about $1 billion, also administers 700 million acres of sub-surface mineral estate throughout the nation. 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.

DOI-BLM-WY-R010-2009-0050-EA

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MAPS and PHOTOGRAPHS

1.0 INTRODUCTION

This Environmental Assessment (EA) has been prepared to disclose and analyze the environmental consequences of renewing/transferring the grazing permits on the Lake Creek Allotment. This EA is a site-specific analysis of potential impacts that could result with the implementation of the analyzed alternatives. The EA assists the BLM in planning and ensuring determination as to whether any "significant" impacts could result from the analyzed actions. An EA provides evidence for determining whether an Environmental Impact Statement (EIS) or a statement of "Finding of No Significant Impact" (FONSI) should be prepared. If the decision maker determines that this project has "significant" impacts following the analysis in the EA, then an EIS would be prepared for the project. If not, a "Finding of No Significant Impact" (FONSI) and Decision Record (DR) may be signed for the EA approving the selected alternative.

1.1 Conformance with Applicable Land Use Plan

This action is subject to the following land use plan:

Name of Plan: Grass Creek Resource Management Plan (RMP)
Date Approved: September, 1998

Remarks: The Grass Creek RMP established the following Management Objective for Livestock Grazing Management:

"Improve forage production and range condition to provide a sustainable resource base for livestock grazing while improving wildlife habitat, watershed protection, and forage for wild horses." [Page 13]

Specific livestock grazing management actions from the Grass Creek RMP, which apply to this proposed action include,

"The amounts, kinds, and seasons of livestock grazing use will continue to be authorized until monitoring indicates a grazing use adjustment is necessary, or an environmental assessment indicates that a permittee's application to change grazing use is appropriate." [Page 13]

And,

"Grazing strategies (including the timing of grazing) will be designed to accommodate the growth requirements of "desired" species within plant communities." [Page 14]

The RMP has been reviewed and it is determined that the proposed action conforms to the land use plan terms and conditions as required by Title 43 Code of Federal Regulations, part 1610.5.

1.2 Relationships to Statutes, Regulations, Policies, Plans or Other Environmental Analyses

This and other grazing related Environmental Assessments are being prepared in accordance with Washington Office (WO) Instruction Memoranda WO-IM-99-039 and 2000-022 as well as WY-IM-2000-20, which instruct all Bureau of Land Management (BLM) Field Offices to conduct National Environmental Policy Act (NEPA) review on grazing permit renewals. The primary regulations governing the analysis are 40 CFR 1500 (RE: The President's Council on Environmental Quality implementing regulations for procedural provisions of NEPA). The principal Bureau permitting regulations for livestock grazing are found in 43 CFR 4100. The principal statutes governing livestock grazing on public land are the Taylor Grazing Act of 1934, the Federal Land Policy and Management Act of 1976, and the Public Rangelands Improvement Act of 1978.

1.3 Regulatory Decisions

The Authorized Officer (AO) must determine whether or not to issue a grazing permit to the applicant(s). The applicant for the renewal or issuance of a new grazing permit or lease, and any affiliate, shall have a satisfactory record of performance and be in substantial compliance with the terms and conditions of the existing Federal grazing permit or lease for which a new permit is sought. The AO could decide not to issue a permit, or to remove the grazing preference from the RMP grazing base, if it would cause unnecessary or undue degradation to the public lands, if it would threaten to violate another Federal law, or if the applicant has an unsatisfactory record of performance or is not in compliance with the existing permit or lease.

If the AO decides to remove the grazing preference from the RMP grazing base through an RMP revision, the potential effects of removal of the grazing preference would be analyzed during the RMP revision process.

The AO must identify specific terms and conditions that apply to the permit. Livestock grazing permits and leases shall contain terms and conditions appropriate to achieve management and resource condition objectives for the public lands. These grazing permits and leases shall specify the kind and number of livestock, the period(s) of use, the allotment(s) to be used, and the amount of use, in animal unit months, for every grazing permit or lease. The authorized use shall not exceed the livestock carrying capacity of the allotment. All permits and leases shall be made subject to cancellation, suspension, or modification for any violation of these regulations or any term or condition of the permit or lease (43 CFR 4130.3). The environmental assessment will be used to identify the appropriate terms and conditions that should be included with the renewed permit.

Finally, the AO must determine whether or not implementation of the selected alternative could result in significant impact to the human environment. If not, this determination would be documented in a Finding of No Significant Impact (FONSI). If the impacts could be significant, an environmental impact statement would be necessary.

1.4 Need And Purpose Of Action

NEED: This action is needed to renew/transfer the grazing permits and to address grazing management/terms and conditions on the Lake Creek Allotment.

PURPOSE: This action focuses on the environmental issues specific to livestock grazing management and renewing/transferring the term grazing permits associated with this allotment. The purpose of this action is to continue, modify, or cancel the current grazing management to promote healthy, sustainable rangeland ecosystems and to meet/continue to meet rangeland health standards.

These grazing permits are subject to renewal in accordance with the provisions of the Taylor Grazing Act, Federal Land Policy and Management Act, Public Rangelands Improvement Act, Administrative Procedures Act, Grass Creek Resource Management Plan/, and the grazing regulations 43 CFR Part 4100.

In order for livestock grazing to occur on public land, the livestock permittees must hold a valid grazing permit. The Code of Federal Regulations, 43 CFR 4130.2(a), states that "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 Grass Creek RMP has designated the allotment as available for livestock grazing. The above mentioned applicants control base property associated with a grazing preference on the allotment and have been determined to be qualified applicants.

2.0 DESCRIPTION OF ALTERNATIVES

The Alternatives were developed based upon issues identified though internal scoping as well as through cooperation with the permittees. The alternatives were developed to address the grazing impacts on public lands within the allotments, to consider the individual permittee's ranching resource goals and operations as well as provide the opportunity for specific comparisons on which the decision maker could base a decision.

2.1 Alternative 1- Issue Grazing Permits With No Changes

Alternative 1 is based upon the prior grazing permits. Under Alternative 1, a grazing permit would be issued to D.E.L. LLC for a term of three years as defined within the base property lease with Baird Lippincott and Vass. Also, a permit would be issued to William Murdoch for 10 years as defined within his base property lease with Hugh Vass. The permits would authorize the same level of livestock grazing use as the previous grazing permits, with no change in livestock kind or permitted use period. It should be noted that grazing has not occurred exactly as written in the permit by either permittee because of the impracticality of the livestock numbers as noted within the permit-but the grazing that has taken place has been within the use dates and within permitted AUMs. A review of the use records indicates that for the last 20 years the Baird, Lippincott and Vass permit has been utilized June through November while the Murdoch permit has been utilized primarily during the month of June and then September through November. The grazing permits would authorize the following livestock grazing use:

Baird, Lippincott and Vass

Lake Creek	129 Cattle	5/1-6/30	50% public land	129 AUMs
Lake Creek	33 Cattle	7/1-8/31	50% public land	34 AUMs
Lake Creek	214 Cattle	9/1-10/10	50% public land	141 AUMs
Lake Creek	130 Cattle	10/11 to 11/10	50% public land	66 AUMs
Lake Creek	111 Cattle	11/11 to 2/14	50% public land	175 AUMs

Terms and Conditions: Grazing use during the critical growing season from May 1 to June 30 is limited to 129 public AUMs as shown above.

William Murdoch

Lake Creek	22 Cattle	5/1-6/30	100% public land	44 AUMs
Lake Creek	6 Cattle	7/1-8/31	100% public land	12 AUMs
Lake Creek	37 Cattle	9/1-10/10	100% public land	49 AUMs
Lake Creek	22 Cattle	10/11-11/10	100% public land	22 AUMs
Lake Creek	19 Cattle	11/11-2/14	100% public land	60 AUMs

Terms and Conditions: Grazing use during the critical growing season from May 1 to June 30 is limited to 44 public AUMs as shown above.

2.2 Alternative 2- Issue Grazing Permits with Modifications

Alternative 2 was developed in conjunction with the permittees to more accurately reflect that which has been occurring on the ground and has therefore become s part of the permittees operating plan. Under Alternative 2, livestock grazing would continue on the allotment. The permittees would be permitted to run livestock on the allotment in accordance with the individual grazing permits but the permits would be changed to match more closely that which has essentially been occurring on the ground since the late 1980's . The total amount of AUMs would remain the same however the AUMs permitted for critical growing season use (May and June) would be reduced (173 AUMs in Alt. 1 vs. 99 AUMs in Alt. 2). The grazing that has been permitted in May would be eliminated. A utilization stipulation would be added to the terms and conditions of the grazing permits. The grazing permits would authorize the following livestock grazing use:

D.E.L LLC (Lease from Baird, Lippincott and Vass)

Lake Creek	160 Cattle	6/10-6/30	50% public land	55 AUMs
Lake Creek	160 Cattle	7/1-1/2	50% public land	489 AUMs

Terms and Conditions: Utilization of up to 50% of the current year's growth is allowed.

William Murdoch

Lake Creek	45 Cattle	6/1-6/30	100% public land	44 AUMs
Lake Creek	57 Cattle	9/1-11/16	100% public land	144 AUMs

Terms and Conditions: Utilization of up to 50% of the current year's growth is allowed.

2.3 Alternative 3 - Eliminate Livestock Grazing/Remove the Preference From The Grazing Base

Under Alternative 3, no livestock grazing would be permitted on the Lake Creek Allotment. The previous grazing permits would be cancelled. The grazing preference for the allotment would be removed from the Grass Creek RMP grazing base.

3.0 AFFECTED ENVIRONMENT

3.1 General Setting

The Lake Creek Allotment is located approximately 30 miles northwest of Thermopolis, Wyoming. The elevation ranges from 7,550 feet in the northwestern area of the allotment to 6,350 feet above sea level on Cottonwood Creek at the eastern edge of the allotment. The allotment encompasses approximately 6,424 acres of which, approximately 3,621 acres are public land, and 2,803 acres are private or state land. The allotment varies from rolling topography dissected by multiple drainages to steep ridges and cliffs.

The following climate description is provided by US Department of Agriculture, Natural Resources Conservation Service - Ecological Site Description, loamy range site (Site ID R032XY322WY, approved 2008). Annual precipitation ranges from 10-14 inches per year. The normal precipitation pattern shows the least amount of precipitation in December, January, and February, increasing to a peak during the latter part of May. Amounts decrease through June, July, and August and then increase some in September. Much of the moisture that falls in the latter part of the summer is lost by evaporation and much of the moisture that falls during the winter is lost by sublimation. Average snowfall exceeds 20 inches annually. Wide fluctuations may occur in yearly precipitation and result in more dry years than those with more than normal precipitation.

Temperatures show a wide range between summer and winter and between daily maximums and minimums, due to the high elevation and dry air, which permits rapid incoming and outgoing radiation. Cold air outbreaks from Canada in winter move rapidly from northwest to southeast and account for extreme minimum temperatures. Chinook winds may occur in winter and bring rapid rises in temperature. Extreme storms may occur during the winter, but most severely affect ranch operations during late winter and spring.

Winds are generally not strong as compared to the rest of the state. Daytime winds are generally stronger than nighttime and occasional strong storms may bring brief periods of high winds with gusts to more than 75 mph.

For detailed information visit the Natural Resources Conservation Service National Water and Climate Center at http://www.wcc.nrcs.usda.gov/ website. Other climate station(s) representative of this precipitation zone include" Grass Creek 1E", "Thermopolis", Thermopolis 25NW", "Buffalo Bill Dam" and "Black Mountain".

3.2 Hydrology/Riparian

The allotment is located in two watersheds, one of which is the Cottonwood Creek-South Fork Cottonwood Creek watershed (HUC # 100800070601), that contains 32,395 total acres with approximately 4,997 acres of the allotment within the watershed for approximately 15.4% of the total watershed acreage. The other watershed is the North Fork Owl Creek watershed (HUC # 100800070203) which contains 34,439 acres with approximately 1,444 acres of the allotment within the watershed for 4.2% of the total watershed acreage. There are several unnamed drainages within the allotment, most of which have been determined to be ephemeral or intermittent. Cottonwood Creek is a perennial stream that runs from northwest to southeast through the allotment and there is a small section of Cottonwood Creek on public lands – approximately a 264 foot reach on public land. There is approximately 3 miles of private or state lands above and below the segment.

The drainages on public land were assigned a BLM RAIDS ID# for monitoring of watershed function and riparian habitat. The segments within the allotment are located on the map below. The segment P0408X (264 foot segment) has a perennial flow regime with flow in the channel greater than 80% of the year. Segments E0005X (1.08 miles), E0016X (.9 miles) and E0175X (.17 miles) are considered to be ephemeral, while segment I0149X (.75 miles) have in the past been considered to be lotic systems with an intermittent flow regime. The flow from these segments likely originates from spring sources that have varying flow rates that may be reflective of the climatic conditions.

The last assessment of the Cottonwood Creek (P0408X) and the tributary to Cottonwood Creek (I0149X) determined the segments to be in a Proper Functioning Condition. These 2 segments were found to have displayed a resiliency within the riparian area that would allow it to maintain its integrity during high flow events. In 2009, a small spring (assigned segment number SGC001) was identified on the allotment. This spring provides water to a reservoir located a few hundred yards below. It was determined to be functional but at risk therefore the Worland Field Office personnel is in the process of establishing protection for the spring-a fence around the spring which would continue to serve the water needs of livestock and wildlife while enhancing the riparian values of the spring. The project will be addressed in a separate environmental analysis and completion of the project is expected to occur in 2010.

While the ephemeral drainages were assigned segment numbers they are not commonly monitored for proper functioning condition because the hydrologic characteristics of ephemeral drainages, i.e. a lack of water, do not exhibit the soils, the water, or the vegetative components of a riparian system. A table portraying the latest official assessment of the intermittent and perennial segments is in the monitoring section below.

3.3 Soils

The soils reflect the piedmont slope environment in which they formed. They are highly variable, reflecting differences in elevation, parent material, aspect and slope. With the exception of the soils along Cottonwood Creek most are well drained. The soils are typified by a light brown surface horizon. Soil surface textures tend to be loams. Subsoil textures are loams and clay loams; often expressed as an argillic horizon. The soils supporting the woodland communities have darker and thicker surface horizons, often being expressed as mollic epipedons. Soil textures are modified by channery and cobble size rock fragments, typically being channery loams and cobbly loams. Throughout the allotment the soil depth to bedrock ranges from a few inches to over 60 inches and slopes range from 0 to 60 percent.

The forested portions of the allotment were not mapped as distinct ecological sites when the soil survey was conducted; instead they were delineated simply as woodlands, without regard for tree species. The ecological sites found in the allotment are listed below:

Loamy 10-14 in. pz	R032XY322WY
Shallow Loamy 10-14" pz.	R032XY362WY
Shallow Loamy 15-19 in. pz.	R043BY262WY
Woodlands	None

The existing vegetation is adequate to protect the soil surface from rain drop impact and the erosive forces of overland flow. Based on calculations generated by the U.S. Forest Service web-based Water Erosion Prediction Project (WEPP), Disturbed WEPP model, runoff and erosion is minimal when the native vegetation has not been disturbed.

3.4 Vegetation

Vegetative species observed on the allotment are bluebunch wheatgrass (key species), needleandthread (key species), Idaho fescue, green needlegrass, prairie junegrass, western wheatgrass, wildrye, lupine, pricklypear cactus, sagebrush, threadleaf sedge, juniper, sandberg bluegrass, cottonwood trees, willows, rushes, and sedges. Rocky Mountain Twinpod *(Physaria saximontana var. saxomontana)* is a plant on the BLM Sensitive Plant List which may occur in a limited area of the allotment. While this listing of vegetation is far from being an "all inclusive" listing of the vegetation on the allotment it does provide a representation of major vegetative species encountered throughout the allotment.

3.4.1 Invasive Species

In 2005 a weed inventory was conducted on the allotment. At that time a small infestation of Russian knapweed was also located and treated. A follow up inventory in 2007 a small infestation of whitetop was located and treated. To date, no other invasive weed species have been inventoried on the allotment.

3.5 Range/Grazing

The Lake Creek Allotment is a common use allotment that is utilized by 2 different permittees. All Animal Unit Months (AUMs) are permitted for cattle grazing. As currently permitted, 24% of the allocated AUMs can be utilized during the critical growing season(May and June) and the remaining 76% of AUMs can be utilized during the remainder of the grazing year (July through February).

In 1999 the allotment was assessed for conformance with the Wyoming Rangeland Standards and Guidelines. The resource conditions –the standards - of the public rangelands were met. The most recent allotment inspections/monitoring was conducted in 2008 and 2009 and indicate that the allotment uplands have maintained a vegetative component comprised of diverse and desirable native species, that the soils are stable, and that utilization levels are acceptable. The monitoring efforts were comprised of basal/canopy cover transects which were completed at three separate areas within the allotment. Utilization measurements have also been completed and repeated at the sites where the cover data was measured. Tables 1, 2, and 3 provide data and observations. The vegetation observed within the transects indicates that the uplands of the allotment are primarily comprised of a Perennial Grass/Big Sagebrush Plant Community state which is considered to be an extremely stable and sustainable plant community as pertaining to soil stability, watershed function, and biological integrity. This community state is at a stage just prior to achieving Historic Climax Plant Community (HCPC, NRCS, Ecological Site Description, Loamy 10-14 inch precipitation zone).

A review of the grazing use records indicates that the Baird, Lippincott and Vass permit has primarily utilized the AUMs from June through November while the Murdoch permit has been utilized primarily during June and then September through November. There are no pasture fences within the allotment therefore livestock movements are dictated by terrain, weather, herding, livestock kind, available feed sources, and available water sources.

3.6 Wildlife

The Lake Creek allotment provides habitat for several big game species, as well as many other none game wildlife species, during all seasons of the year. Throughout the year relatively small numbers of resident moose, elk and mule deer use the allotment, but from late fall through early spring the majority of this allotment provides winter range for larger herds of elk. This allotment provides crucial winter range for mule deer also. Significant numbers of mule deer will use the area as transition range in the spring and again in late fall during the rut. Moose occurrence in the allotment very occasional but can be yearlong with larger numbers using willow and narrow leaf cottonwood communities along Cottonwood and Lake creeks during the winter. Antelope can also occasionally be observed using this allotment, particularly in the spring and summer, and most often in the northeast corner of the allotment. No sage-grouse leks have been identified in Lake Creek Allotment, but leks have been documented on neighboring allotments to the east and northeast. The closest leks, *21 Creek 2* and

Rattlesnake Creek, are approximately ¼ mile from the northeast and southeast corners of the allotment. Lek counts from 21 Creek 2 show a decreasing trend from the first year of observations in 1986, and counts from Rattlesnake Creek show an increasing trend from the first observations in 1983. Lek counts can be quite variable, and therefore are not necessarily an indicator of habitat quality. Weather, predators and the time of day are just some of the variables that may affect lek activity and lek monitoring. The lek observations for the above leks are presented in table 5 and 6. Sagebrush habitats in the northeast and southeast corners of the allotment are providing sage-grouse wintering habitat. This wintering has been documented with both ground and air surveys within the past 5 years. Other areas of the allotment are likely providing nesting and brood rearing habitat for sage grouse as well. Sagebrush canopy cover transects were measured at 3 locations in the allotment and two were at or near 20%, and one was at 14% cover. The 14% canopy cover transect was in an identified wintering area. Sagebrush canopy cover at the other two transect locations were found to be suitable for nesting, but to date no nesting inventories have been conducted. This transect data is presented below at 4.0 -Tables 1, 2, and 3. These same sagebrush habitats also likely provide breeding nesting, and foraging habitat for other sagebrush obligates like the sage thrasher, Brewer's sparrow and loggerhead shrike. Although they have not been documented through formal inventory efforts, these are 3 BLM sensitive species that are common residents of these sagebrush communities in the area, and are the only BLM sensitive species likely to occur within this allotment. And in the absence of any site-specific management plans or conservation strategies for these species, the Land Health Standards provide for the management of these sensitive species habitats. Other species like the Mountain lion, blue grouse, and a variety of passerines, raptors, small mammals and predator species also inhabit this allotment throughout the year.

3.6.1 Threatened or Endangered Species

Occasional Grizzly bear and/or wolf occurrence is possible in this allotment. Grizzly bear occurrence would most likely be in early spring when bears leave den sites and move down to lower elevations in search of winter kill carcasses and green vegetation. Usually by May most Grizzly bears have moved up in elevation, following green-up as it progresses to higher elevations. Wolf occurrence would most likely occur during winter when elk concentrations are present. Also, there has been no documented wolf or Grizzly bear depredation of livestock in this allotment. Other than the Grey wolf, there are no other known threatened, endangered wildlife species, or their habitats within this allotment, but the sage-grouse, and likely the sage thrasher and logger head shrike are all BLM sensitive species.

3.7 Non-renewable Resources

The area of which the Lake Creek Allotment falls within is open to leasing, however there are no active production sites within the allotment nor are there any pending or current permits for the area. Because there are no active production sites within the allotment, non-renewable resources will not be considered in any further analysis within this document.

3.8 Recreation/Visual Resources

Approximately half of the allotment is located within the Absaroka Mountain Foothills Special Recreation Management Area (SRMA). This area was identified a SRMA due to the identified desired recreational settings, opportunities, experiences, and beneficial outcomes. There is an escalated recreation management focus in this area so as to attain the targeted outcomes. The natural recreational resources, such as scenic quality, semi-primitive settings, and wildlife, are abundant within the allotment, but legal public access into the area is limited, and therefore recreational uses are likely limited. There are two main passable dirt roads that come into the allotment; one from the east and one from the south. Both of these roads cross private lands that the BLM does not have easements upon therefore public access is limited. Recreational use for this area and within the SRMA consists of site seeing, hunting, camping, driving for pleasure, destination travel for viewing the area and general dispersed recreation. Comprehensive Travel and Transportation Management (CTTM) manages approximately half of the allotment as motorized vehicle use limited to designated roads and trails, and the remainder as limited to existing roads and trails. The entire allotment is located within a Class III Visual resource Management Area (GCRA RMP FINAL ROD, Map 9). Class III objectives are to partially retain the existing character of the landscape. The level of change to the characteristic landscape should be moderate. Management activities may attract attention but should not dominate the view of the casual observer. Changes should repeat the basic elements found in the predominant natural features of the characteristic landscape.

3.9 Cultural Resources

The Lake Creek Allotment #00607 contains no known cultural resource sites. Other cultural resource studies indicate that the general area of the allotment has been occupied for at least 12,000 years and cultural resource sites should be anticipated within the allotment. In accordance with the Wyoming State Protocol at Appendix B.27, renewal of grazing permits is exempt from class III inventory.

4.0 Monitoring Data

Table 1 Soils, Vegetation, Range-Loamy Range Site.

Observed Cover Transect July 2009 T44 R100 Section 22	**Ecological Site Description/Reference Sheet Expectation**	**Observed Canopy Cover-completed for Sagebrush Only. 14% Canopy Cover**	**Observed Utilization, November 2009 0-NO USE OBSERVED**
10% bare ground	10-30% bare ground		
21.5% litter	5-30% litter		
1% rock/gravel			
67.5% vegetation – see below for composition			
--54% grasses	55-75% grasses		
--20% forbs	15% forbs		
--26% shrubs	10-30% shrubs		

Table 2 Soils, Vegetation, Range-Loamy Range Site.

Observed Cover Transect July 2009 T44 R100 Section 35	**Ecological Site Description/Reference Sheet Expectation**	**Observed Canopy Cover-completed for Sagebrush Only. 20% Canopy Cover**	**Observed Utilization, November 2009 26%-LIGHT USE**
7.5% bare ground	10-30% bare ground		
22% litter	5-30% litter		
2.5% rock/gravel			
68% vegetation – see below for composition			
--50% grasses	55-75% grasses		
--13% forbs	15% forbs		
--36% shrubs	10-30% shrubs		

Table 3 Soils, Vegetation, Range-Loamy Range Site.

Observed Cover Transect July 2009 T44 R100 Section 28	**Ecological Site Description/Reference Sheet Expectation**	**Observed Canopy Cover-completed for Sagebrush Only. 22% Canopy Cover**	**Observed Utilization, November 2009 34%-LIGHT USE**
10% bare ground	10-30% bare ground		
23% litter	5-30% litter		
5% rock/gravel			
62% vegetation – see below for composition			
--56% grasses	55-75% grasses		
--9% forbs	15% forbs		
--35% shrubs	10-30% shrubs		

Table 4, Hydrology/Riparian

BLM ID#	**Riparian Area**	**(mi) Or (Ac.)**	**Date Monitored**	**Function**	**Trend**
I0149X	Cottonwood CK TR	0.75	9/17/1997	PFC	UP
P0408X	Cottonwood CK	0.05	9/18/1997	PFC	N/A
SGC001	North Fork Owl CK TR	.3 acres	2/24/2009	FAR	N/A
PFC=Proper Functioning Condition FAR=Functioning at Risk N/A= Not Apparent UP=Upward					

Table 5, 21 Creek Lek Data

Lek ID	Year	Month	Day	Males	Females
21 Creek 2	1986	3	21	36	0
	1986	4	7	23	7
	1992	4	13	18	2
	1995	4	21	0	0
	1996	4	16	1	0
	2000	4	5	16	0
	2001	4	18	8	2
	2002	4	12	4	5
	2003	4	9	5	1
	2004	4	13	6	2
	2005	5	5	28	0
	2006	4	27	2	2
	2006	5	4	13	0
	2007	4	26	0	0
	2007	5	2	12	0
	2009	4	14	11	2
	2009	4	22	6	0

Table 6, Rattlesnake Creek Lek Data

Lek ID	Year	Month	Day	Males	Females
Rattlesnake Creek	1983			3	0
	1983	4	31	2	0
	1989	4	10	9	0
	1992	4	6	11	0
	1993	4	8	0	0
	1995	4	3	18	0
	1995	4	3	6	0
	1997	4	8	0	0
	1997	4	9	0	0
	2004	3	23	4	9
	2004	4	1	9	8
	2004	4	17	10	8
	2005	4	1	0	0
	2005	4	1	2	3
	2005	4	1	16	5
	2005	4	13	0	0
	2005	4	17	29	9
	2005	5	3	23	1
	2005	5	3	0	0
	2006	3	23	13	7
	2006	4	3	0	0
	2006	4	3	22	5
	2006	4	23	30	5
	2007	4	28	38	2
	2008	3	21	29	5
	2008	4	5	32	14
	2008	4	16	32	28
	2008	4	28	35	4

5.0 Environmental Consequences

5.1 Alternative 1- Transfer/Renew the grazing Permits with no changes:

Further Analysis and Consideration of Alternative 1will not occur within this document because the grazing activities that have occurred on the ground do not accurately reflect that which is written within the grazing permit nor does it reflect the management goals/ intentions of the permittees- described above at 2.1.

5.2 Alternative 2- Issue Grazing Permits with Modifications

5.2.1 Hydrology/Riparian

The perennial and intermittent stream segments have been determined to be in a Proper Functioning Condition, therefore it is unlikely that the grazing practice that has occurred for the last 20 years (Alternative 2) will negatively impact the streams or the associated riparian areas on public lands. These riparian systems, under this grazing scheme, were determined to have vegetative and physical attributes that provide for a resiliency to high flow events. As described in the Affected Environment section there is a spring that has been determined to be Functioning at Risk. While all the appropriate vegetative and hydrologic components were present the primary attribute that led to the determination of "at Risk" was hummocking of the vegetative community within the riparian zone surrounding the spring. To remedy the situation and as noted previously, BLM personnel are actively in the process of having the spring and its associated riparian area fenced to eliminate the livestock and elk use of the area. Overall, the prescribed use levels would likely provide for continued upland vegetative health and in turn provide for the maintenance and stability of the watersheds.

5.2.2 Soils

The reduction in growing season AUMS under this alternative would increase herbaceous and litter cover further protecting the soil surface from the erosive forces of raindrop impact and overland flow.

5.2.3 Vegetation

A portion of the annual forage production would be removed by grazing livestock. Fourteen percent (99AUMs) of the forage removal would occur during June which is part of the critical growing season (May and June) for the key species-cool season grasses. The stocking rate on the allotment during June would be approximately 37 acres per animal unit month (A/AUM). The remaining livestock grazing would occur post seed ripe – July 1st through January 2nd. The stocking rates on the allotment July through August would be approximately 22 A/AUM while September through November 15th the stocking rate would be approximately 10.5 A/AUM. The stocking rates on the allotment November 16th through January 2nd would be approximately 28.7 A/AUM. The Ecological Site Descriptions developed specifically for the Big Horn Basin suggest a stocking rate of 2.5-10 A/AUM (Loamy range site 10-14" zone, Natural Resources Conservation Service –Dept. of Agriculture, 2008).

The prescribed grazing under this alternative would likely maintain or improve the upland rangeland health conditions by providing a stocking rate that is appropriate throughout the year, that defers the majority of grazing to post seed ripe and provides for a timeframe during the critical growing season for unabated growth-the entire month of May. The prescribed grazing provides a light stocking rate of 37 A/AUM during the critical growing season which would help to ensure that the majority of the key species within the allotment would either be used lightly or not used at all during that timeframe. Plants that are grazed lightly during this timeframe would have the vegetative matter and capability to grow, produce a viable seed, and replenish energy reserves. The vast majority of the rangeland plants on public land will grow and complete a growth cycle without any domestic grazing pressure. Grazing post seed ripe would also occur at a proper stocking rate and at a time that would be least likely to cause an interruption to the plants physiological or morphological processes. After seed ripe there is little or no active plant growth that would occur because the plants would have completed the annual cycle of producing seed and the climatic conditions are often unfavorable for further plant growth.

The utilization limits within the RMP varies from 30-50% for the 10-14 precipitation zone as stated in Table 3-6 as follows:

Average Annual Precipitation	Appropriate Utilization for Key Forage Key Areas(1) (percentage)	Vegetative Community	Start of Spring Growth/Start of Dormancy	Appropriate Utilization for Plants Grazed Exclusively During the Dormant Season (percentage)
10-14"	*30-50*	*Foothills-Mountain-Grassland/Shrub*	*May 1/October 15*	*60*

(1) Ranges in good condition or grazed partially during the dormant season can withstand the higher utilization level. Those in poor condition or those grazed during the active plant growth should receive the lower utilization limit.

The Grass Creek RMP states within the Record of Decision that for plant communities (excluding the the Salt Desert Shrub and the Salt Bottom Communities) that are grazed during the growing season; a grazing strategy would be designed to allow a combined forage utilization of 30 to 50 percent of the current year's growth-page 14. Revised Table 2 (at page 43 of the Final EIS, Vol. 1) also states the same.

Monitoring of the allotment has shown that the range conditions are meeting the rangeland health standards and that the vegetation observed within transects of recent monitoring indicates that the uplands of the allotment are at a Perennial Grass/Big Sagebrush Plant Community state which is considered to be an extremely stable and sustainable plant community as pertaining to soil stability, watershed function, and biological integrity. This community state is at a stage just prior to achieving Historic Climax Plant Community (HCPC, NRCS, Ecological Site Description, Loamy 10-14 inch precipitation zone). Also, as stated above, the critical growing season for cool season grasses (key species) is May and June. Only 14% of all grazing would occur during this timeframe, 37% of all permitted use would occur after October 15th -dormancy, and the remaining 49 % of use would occur during the summer and fall - after the key species have completed a reproductive cycle but are not yet completely dormant.

Based upon ROD, Table 2, Table 3-6, the range conditions, and the fact that 86 percent of all permitted AUMS will be utilized after seed ripe a utilization limit of up to 50% would be implemented on the grazing permits.

5.2.3(a) Invasive Species

Grazing as described under this alternative would continue to ensure that native vegetation communities are healthy and intact. With a healthy native herbaceous community, such as that found on this allotment, there is an inherent amount of protection from invading weeds. In contrast, areas that are disturbed to the point of having exposed mineral soils present an opportunity for non-native encroachment. Areas that are commonly disturbed to a bare ground situation are the main roadways and manmade water sites. These areas may not necessarily be invaded by noxious or invasive non-native species however; given the opportunistic characteristics of many invasive species, the opportunity for such an event to occur is greater. As has been done in the past and in cooperation with local partners, the area would continue to be monitored for the presence of noxious weeds, as per the Bighorn Basin Weed Management Plan. Treatment methods for any existing or new noxious weed infestations located would be evaluated on a site specific basis.

5.2.4 Wildlife

The livestock grazing proposed in alternative 2 will allow for the sustainability of wildlife and the habitats they depend on throughout the allotment. The reduction in growing season grazing AUMs versus that prescribed in alternative 1, could result in enhanced production and composition of herbaceous and forb communities, as well as enhanced forage availability for wintering big game, primarily elk. Because there is little dietary overlap between livestock and wintering mule deer or antelope, the grazing proposed in this alternative would have little direct effect on wintering mule deer or antelope use of the allotment. Competition for winter forage between cattle and elk should not be an issue with this alternative. The light to moderate use levels prescribed in alternative 2 would provide for adequate amounts of herbaceous residue and litter necessary for sage-grouse nesting and brood rearing habitats as well as provide for the needs of multiple and various wildlife species. That is to say, the livestock utilization limit is 50% or less of the annual vegetative component thereby leaving no less than 50 of the vegetative resource for use by wildlife and other resources.

5.2.4(a) Threatened or Endangered Wildlife

Because occurrence is so infrequent, and depredation has not been a problem, the habitats within the allotment do not provide important or necessary components to support the survival needs of the Grizzly bear or wolf populations that may occasionally inhabit the area. Potential impacts from livestock grazing described in this alternative, during the proposed summer and early fall periods in the allotment would be insignificant, considering the unlikely potential for wolves and/or Grizzly bears occupying this allotment while the livestock are present. Grizzly bears and wolves would not be affected or jeopardized by the proposed renewal of this grazing permit. With the exception of the wolf which is a listed species, and the sage-grouse, sage thrasher and loggerhead shrike which are BLM sensitive species, there are no other known threatened or endangered species or habitats expected to be impacted by this alternative.

5.2.5 Recreation/Visual Resources

Impacts to recreation under this alternative would be expected to be minimal and would not limit the recreational activities which may occur in the area. The presence of livestock may interfere with goals of some visiting the area which may displace those visitors to alternative areas. Potential visual intrusions may include introducing contrasting elements of line, form, and color against the surrounding natural elements created from livestock trails, congregating points, and from necessary tasks performed using motorized vehicles. These perturbations are localized and rather unnoticeable to the casual observer. The presence of livestock would not have a consequence on the visual resource of the area as a whole and are therefore well within the Class III management objectives.

5.2.6 Cultural Resources

There is a direct relationship between the rangeland health and potential effects to cultural resources. Provided rangelands remain in satisfactory condition and are not overgrazed, the potential effects to cultural resources from grazing lease renewals are expected to be minimal. Rangeland deterioration could constitute a viable threat to cultural properties. Alternative 2 is not expected to affect cultural resources given the fact that the rangeland health standards were met in 1999, the recent rangeland monitoring results are acceptable, and total AUMs are constant. Affects to cultural resources are most probable in high use areas such as around water wells or bottlenecks where livestock congregate. Many of these facilities have been in place prior to the 1966 National Historic Preservation Act, thus are considered an existing disturbance. Per Section 3-D of the Wyoming State Protocol Agreement between the BLM and the State Historic Preservation Officer (SHPO), after a determination by cultural resource specialists, undertakings within previously disturbed areas are generally authorized to proceed without additional class III inventory. Away from livestock focal points, surface disturbance is minimal and impacts to cultural resources are negligible. Any and all future range development projects within the allotment will comply with the section 106 process, are subject to relevant cultural investigations prior to permit issuance, and will be analyzed under a separate and site specific EA. Because livestock grazing is a dynamic ongoing process, cultural resource specialists, in conjunction with BLM range management and the leasee, will randomly monitor and inspect heavy use areas over the life of the lease to ensure cultural resources are not being adversely impacted. Any adverse effects discovered will be mitigated accordingly at the discretion of BLM in consultation with the Wyoming SHPO.

5.3 Alternative 3 - Eliminate Livestock Grazing/Remove the Preference From The Grazing Base

5.3.1 Hydrology-Riparian/Vegetation

Under this alternative, rangeland uplands as well as riparian-watershed conditions may improve at a faster rate than under the previous alternatives. The most rapid rate of improvement in ecological condition may occur, and domestic livestock grazing would no longer affect the resource conditions of the public rangelands. In the absence of livestock grazing, no herbaceous material would be removed by livestock. Plant growth would be optimized, and all plant material would accumulate as litter. Surface litter provides for raindrop interception, slows runoff and thereby increases infiltration, reducing surface temperatures and evaporation. Additionally, litter helps to maintain nutrient cycling and energy flows to support healthy biotic and abiotic systems.

5.3.2 Soils

Under this alternative herbaceous material would not be removed by livestock. Herbaceous cover and litter cover would increase resulting in further protection of the soil from the erosive forces of raindrop impact and overland flow.

5.3.3 Wildlife

Livestock grazing generally occurs with some variable influence to ungulate wildlife populations, so the elimination of livestock grazing could benefit these species. In the absence of livestock grazing, any competition for forage between livestock and wildlife would be eliminated, and the public land within the allotments would be available for exclusive use by wildlife, without disturbance by the presence of livestock and by livestock management activities. Upland sagebrush and grass communities would provide ample forage and cover needs for wintering big game as well as sage-grouse.

5.3.4 Recreation/Visual Resources

Recreational and visual resources of the area would not be adversely affected by selection of this alternative. The potential for new roads or surface disturbance to be created by motorized livestock grazing management activities would not exist. In the absence of livestock grazing, healthy rangeland conditions would be maintained within the allotment. Maintaining healthy rangelands is the basis for maintaining an overall healthy landscape that provides a variety of multiple use opportunities for recreational users of the public lands.

5.3.5 Cultural Resources

The No Grazing alternative may result in an adverse effect to cultural resources by eliminating one of the primary historic uses of the area, livestock grazing. The actions necessary to fully evaluate the cultural resources, assess the nature of any adverse impacts, and determine appropriate mitigation measures would be taken during the required RMP amendment process. The mitigation measures may have to be determined in consultation with the State Historic Preservation Officer and the Advisory Council on Historic Preservation.

ALTERNATIVE 3 CONCLUSIONS

The Grass Creek RMP states as a resource management objective, "Improve forage production and range condition to provide a sustainable resource base for livestock grazing while improving wildlife habitat, watershed protection, and for age for wild horses." The RMP further states, as a management action, "The amounts, kinds, and seasons of livestock grazing use will continue to be authorized until monitoring indicates a grazing use adjustment is necessary, or an environmental assessment indicates that a

permittee's application to change grazing use is appropriate." Denying the renewal/transfer of this grazing permit would not be in conformance with the Grass Creek RMP and would require an RMP revision to remove the grazing preference from the RMP grazing base. No data is available to rationally support the selection of this alternative at this time.

6.0 Cumulative Impact Analysis

The lands involved in the application have historically been used for livestock grazing, wildlife habitat, and occasional recreational use. The incremental impacts identified within alternative 1, 2 or 3, when added to other past, present, and reasonably foreseeable future actions would not significantly contribute to any Cumulative Impacts.

There is no other known existing or proposed uses or activities on or near the allotments with the potential to cause cumulative impacts with livestock grazing.

7.0 EA Preparation/Consultations

Other Persons/Agencies Consulted:

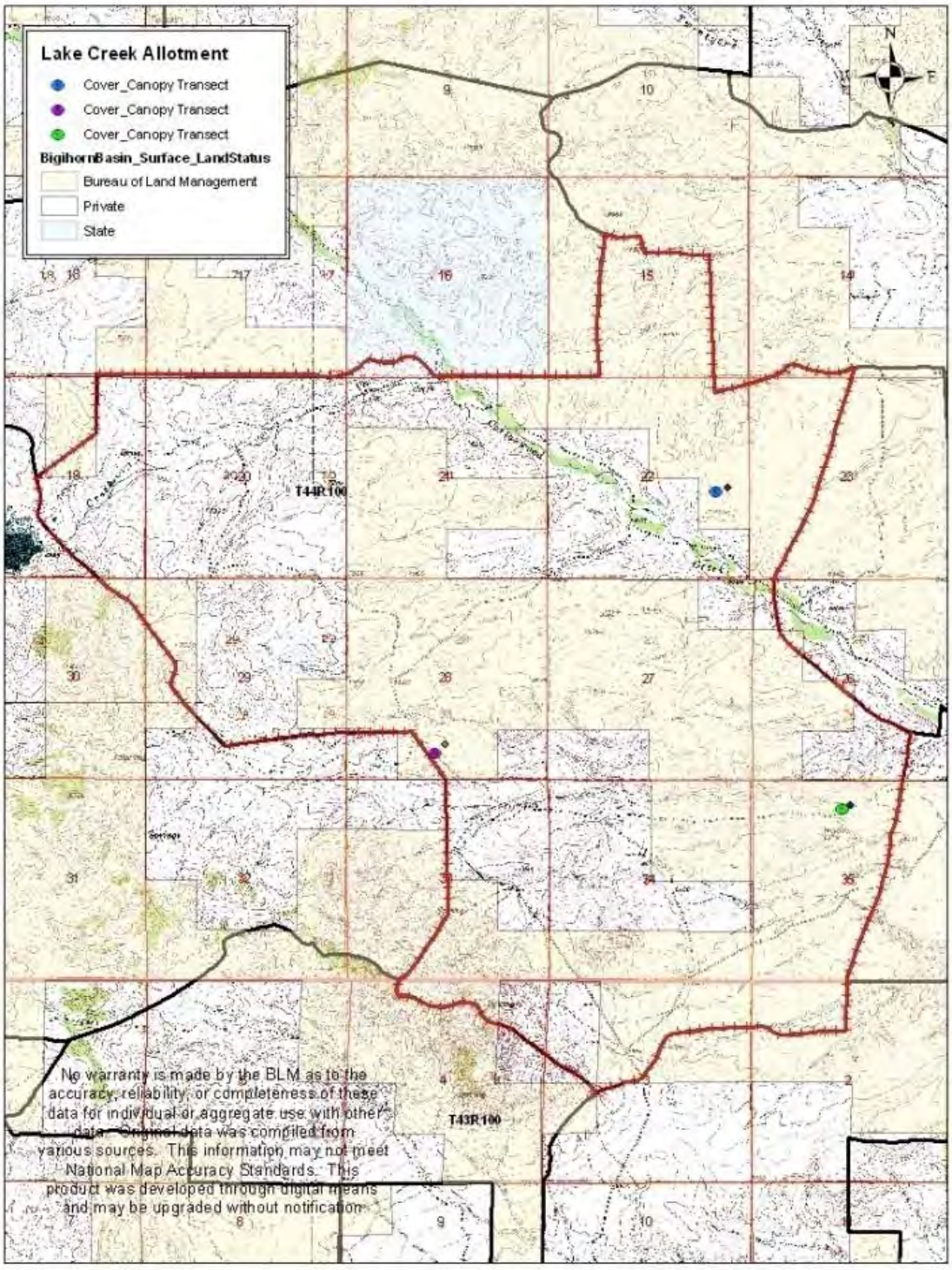
Baird, Lippincott and Vass represented by Hugh Baird
Wil Murdoch
DEL LLC. represented by Louis Rankine

If the Authorized Officer determines that an alternatives is to be implemented, the BLM will issue a proposed decision in accordance with 43 CFR 4160, furthering the opportunity for any affected party to make comment, provide data, or make protest prior to the Decision becoming Final.

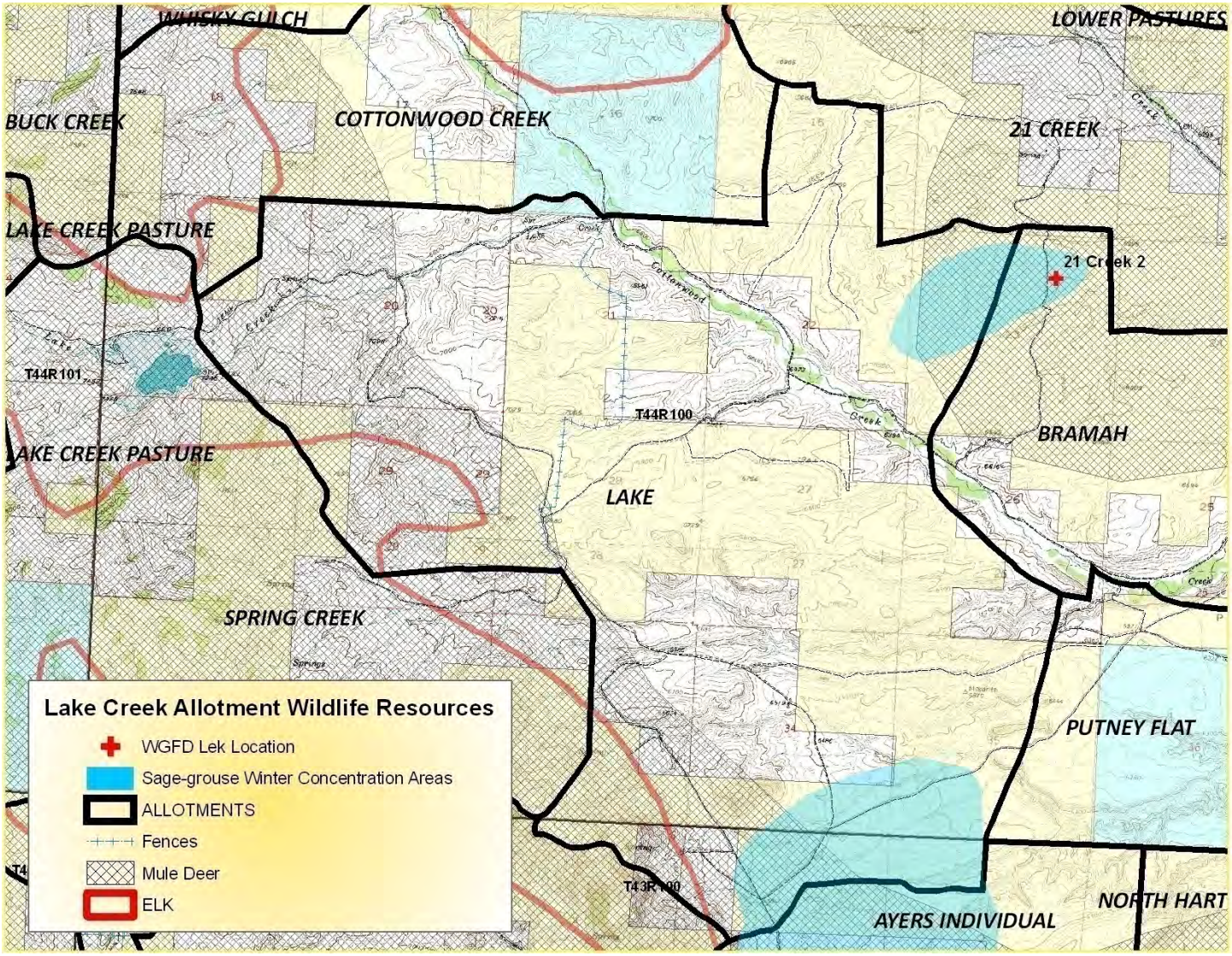
Reviewers: Karen Hepp, Rangeland Management Specialist, BLM
Tim Stephens, Wildlife Biologist, BLM
Marit Bovee, Archaeologist, BLM
Jared Dalebout, Hydrologist, BLM
Paul Rau, Recreation, BLM
Steve Kiracofe, NRS-Soils, BLM
Rance Neighbors, NRS-Weeds, BLM
Holly Elliott, NRS-Oil and Gas, BLM
Jon Tietmeyer, Rangeland Management Specialist, BLM

Preparer(s): John Elliott, Rangeland Management Specialist, BLM
Date: March 30, 2010

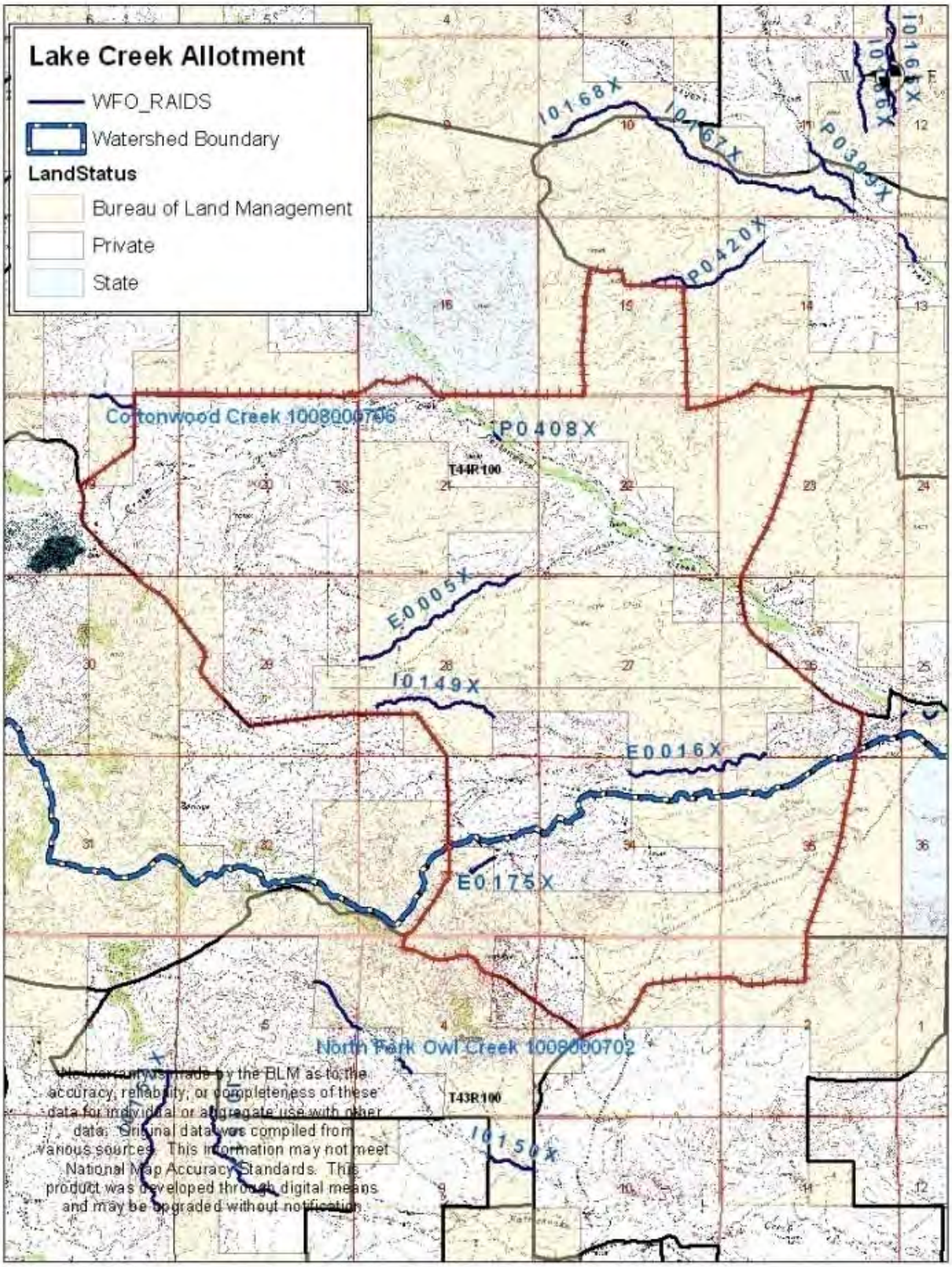
Map 1: Allotment Map



Map 2: Wildlife Habitat Areas



Map 3 Hydrology/Riparian



ONSITE PHOTOS

Section 35


Lake Creek Allotment 11/5/09
12T 0675365 4845359


DATE 7-23-09
DIST GCRA
ALLOT LAKE
12T 0672090
4845716
Cover-CANOPY

Section 28


Lake Creek Allotment Nov. 5, 2009
Utilization @ utm 12T 0672090
4845716


DATE 7-23-09
DIST GCRA
ALLOT LAKE
12T
0674280
4847872
COVER-CANOPY

Section 22


Lake Creek Allotment 11/5/09
12T 0674280 4847872