United States Department of the Interior
Bureau of Land Management

Environmental Assessment

For the grazing permit renewals on the Elkhorn Creek #04615, Lower Boxelder Gulch #04431, Duffy Mountain #04432, South Duffy Mountain #04430, Big Bend #04414, East Godiva #04415, Lower Maudlin Gulch #04416, and Upper Boxelder Gulch #04424 Allotments.

Little Snake Field Office
455 Emerson Street
Craig, Colorado

DOI-BLM-CO-N010-2013-0050-EA

July 2015

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CHAPTER 1 - INTRODUCTION

1.1 IDENTIFYING INFORMATION

PROJECT NAME**:** Grazing permit renewal on the Elkhorn Creek #04615, Lower Boxelder Gulch #04431, Duffy Mountain #04432, South Duffy Mountain #04430, Big Bend #04414, East Godiva #04415, Lower Maudlin Gulch #04416, and Upper Boxelder Gulch #04424 Allotments.

CASEFILE/ALLOTMENT NUMBER: 0501040/04615, 04431, 04432, 04430
0501014/04414, 04415, 04416, 04424, 04431, 04432

1.2 PROJECT LOCATION AND LEGAL DESCRIPTION

LEGAL DESCRIPTION: see Allotment Maps, Attachment 1a – 1g.

Elkhorn Creek
#04615

T4N R93W all or parts of sections 26, 35, 36
T3N R93W all or parts of sections 1, 12, 13, 14, 24
T3N R92W all or parts of sections 6, 7, 8, 18

2,240 Public Land Acres
5,730 Private Acres
122 Colorado Parks and Wildlife (CPW)
8,092 Total Acres

Lower Boxelder Gulch
#04431

T5N R93W all or parts of sections 4-10, 14, 15, 17-22, 27, 29, 30
T6N R94W all or parts of sections 35, 36
T5N R94W all or parts of sections 1, 2, 11-13, 14, 24

11,490 Public Land Acres
1,520 Private Acres
640 State Land Board Acres
13,650 Total Acres

Duffy Mountain
#04432

T6N R93W all or parts of sections 21, 28-35
T5N R93W all or parts of sections 1-5, 9-15, 23-25
T5N R92W all or parts of sections 6, 7, 18, 19, 30

9,282 Public Acres
555 Private Acres
9,837 Total Acres

South Duffy Mountain
#04430 T5N R93W all or parts of sections 23, 25, 26, 35, 36

479 Public Land Acres
1,941 Private Acres
2,420 Total Acres

Big Bend
#04414 T6N R94W all or parts of sections 10, 11, 14, 15

1,532 Public Land Acres
40 Private Acres
35 State Land Board Acres
1,607 Total Acres

East Godiva
#04415 T6N R94W all or parts of sections 13, 14, 23, 24

1,496 Public Land Acres
73 Private Acres
1,569 Total Acres

Lower Maudlin Gulch
#04416 T6N R94W all or parts of sections 17, 20, 21, 27- 30, 33-35
T5N R94W all or parts of sections 2-5, 9, 10, 14, 15, 20-23, 26-28, 33-35

8,534 Public Land Acres
5,357 Private Acres
1,294 State Land Board Acres
15,181 Total Acres

Upper Boxelder Gulch
#04424 T5N R94W all or parts of sections 32, 33
T4N R94W all or parts of sections 7-9, 17-20, 30
T4N, R95W all or parts of section 24

1,915 Public Land Acres
2,858 Private Acres
660 State Land Board Acres
5,433 Total Acres

COUNTY AND GENERAL LOCATION: South-central Moffat County, primarily south of the Yampa River, north of the Danforth Hills, and west of Milk Creek. The Elkhorn Creek Allotment lies within Moffat and a small portion of Rio Blanco Counties southwest of the Danforth Hills and east of State Highway 13.

LANDSCAPE DESCRIPTION: The project area can be generally described as rolling valley of sagebrush grass land surrounded by steep, brushy slopes and deep drainages. Elevations range from 6,200 to 7,300 feet. Precipitation averages between 12 and 14 inches per year. For a detailed description of the landscape found in the project area, please refer to the Little Snake Record of Decision and Approved Resource Management Plan, October 2011 (LSFO RMP/EIS) at: http://www.blm.gov/co/st/en/fo/lsfo/plans/rmp_revision/rmp_docs.html

APPLICANT(S): Kourlis Ranch; Earle, Wilton & Sons.

1.3 BACKGROUND

BLM records show a long history of public land grazing in Axial Basin and the surrounding area. Historic grazing included extensive sheep use, including the winter feeding of hay, as well cattle use. This history is important in gaining a complete picture of public land livestock practices and management throughout the decades; see Attachment 2 for detailed chronology.

1.3.1 Monitoring Data

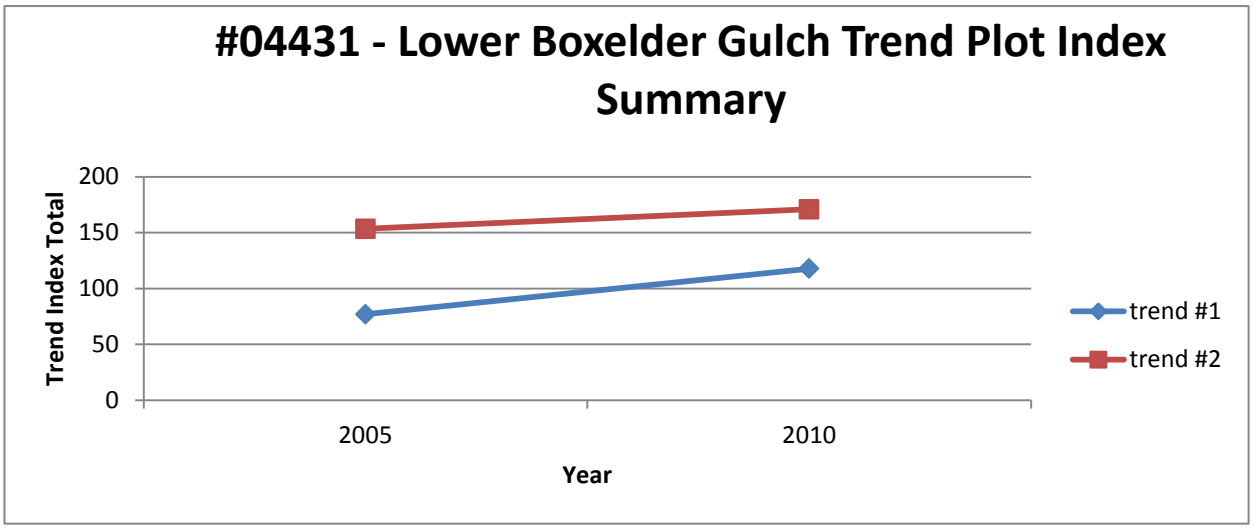
Because data has been collected over a period spanning three decades, all utilization data shown in table below is compilation of BLM ocular estimation techniques, averaged and summarized. The table below summarizes all available data both pre and post Coordinated Resource Management Plan (CRMP) management. The CRMP was implemented in 1993, see Attachment 2 for details.

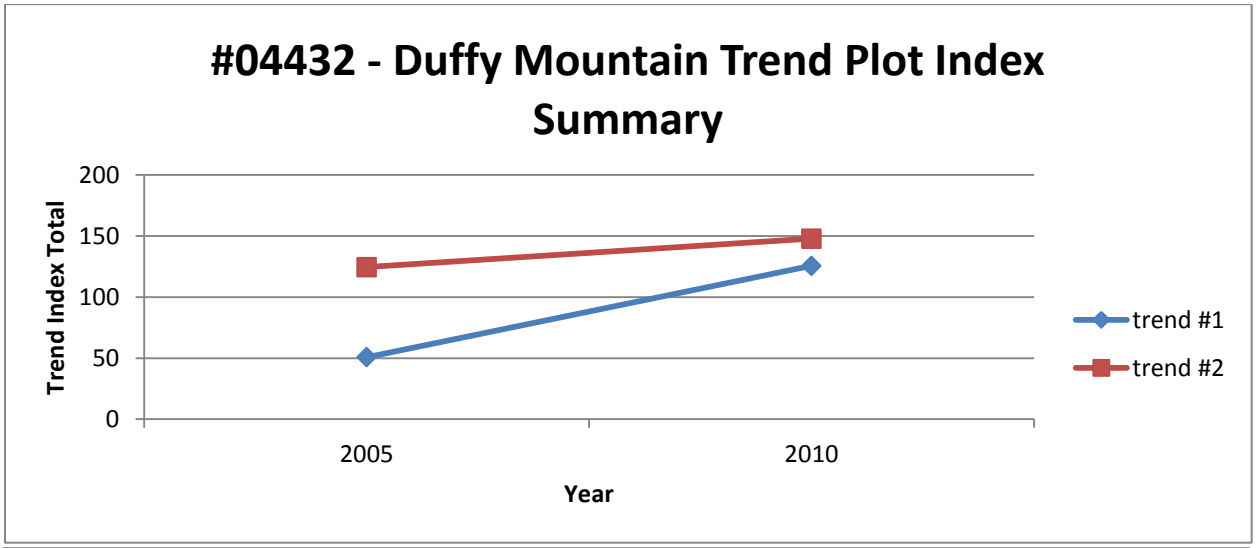
Allotment	Date (range)	Grass % Utilization	Browse % Utilization	Notes
Lower Boxelder Gulch #04431	1987 - 1992	29%	73%	Grass measurements were associated with cattle; browse measurements were associated with sheep and wildlife.
Lower Boxelder Gulch #04431	2000 - 2002	22%	39%	Grass measurements were associated with cattle; browse measurements were associated with sheep and wildlife.
Lower Boxelder Gulch #04431	2010 - 2012	19%	28%	Grass measurements were associated with cattle; browse measurements were associated with sheep and wildlife. Sagebrush Form Class was also taken, data showed that an average of 17% of plants recorded showed partially to all available for grazing and severely hedged.
Duffy Mountain #04432	1982 - 1993	30%	75%	Browse data was only taken on a few transects until 1988.

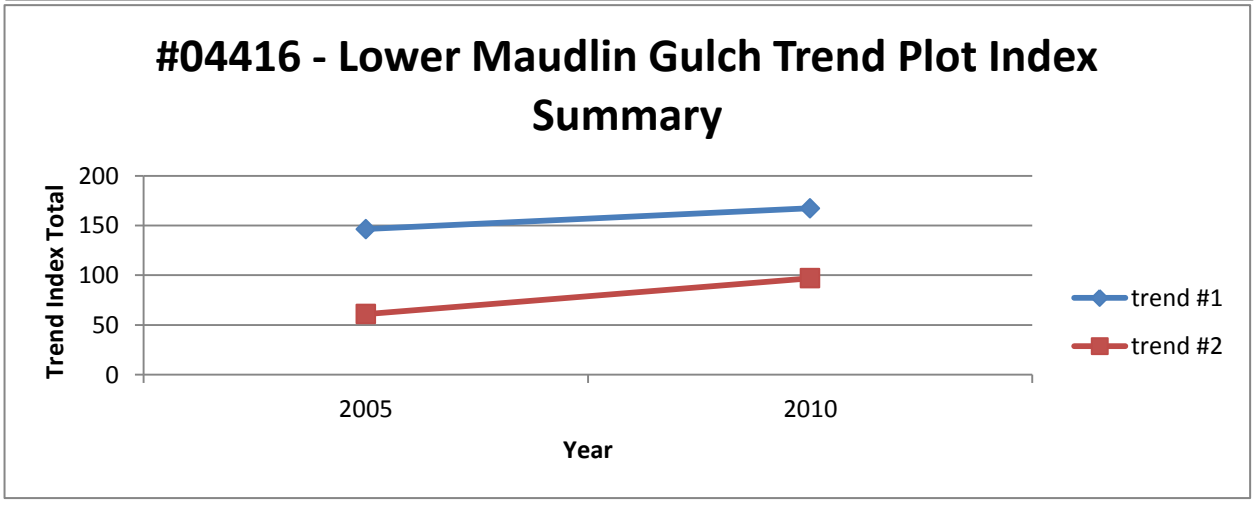
Allotment	Date (range)	Grass % Utilization	Browse % Utilization	Notes
Duffy Mountain #04432	2007 - 2012	27%	49%	Sagebrush Form Class was also recorded; data showed that an average of 21% of plants recorded showed partially to all available for grazing and severely hedged.
South Duffy Mountain #04430	1988	29%	81%	
Big Bend #04414	1987 - 1994	28%	81%	Although these allotments were monitored as spring and winter cattle allotments, heavy deer sign/use was noted on all monitoring locations.
East Godiva #04415	1987 - 1993	31%	81%	
Lower Maudlin Gulch #04416	1987 - 1993	39%	70%	Grass measurements were associated with cattle; browse measurements were associated with sheep and wildlife.
Lower Maudlin Gulch #04416	2000 - 2002	30%	41%	Grass measurements were associated with cattle; browse measurements were associated with sheep and wildlife.
Lower Maudlin Gulch #04416	2010 - 2012	19%	35%	Sagebrush Form Class was also recorded; data showed that an average of 7% of plants recorded showed partially to all available for grazing and severely hedged.
Upper Boxelder Gulch #04424	1988 - 1993	43%	46%	Browse data only taken in 1988, 89

Lower Maudlin Gulch Sagebrush Data - *Artemisia tridentata*				
Averages	Seedling	Young	Mature	Decadent
2011	10%	no data	3%	no data
2012	no data	no data	68%	58%
2013	no data	8%	48%	44%
2014	no data	8%	49%	45%
Lower Boxelder Gulch Sagebrush Data – *Artemisia tridentata*				
Averages	Seedling	Young	Mature	Decadent
2011	no data	10%	61%	38%
2012	no data	13%	59%	35%
2013	no data	no data	60%	44%
2014	no data	8%	63%	31%
For both allotments data for 2013/2014 is limited to data collection taken in April and May. Whereas other years include late summer and early fall data.				
Browse Data – Form Class & Age Ratings per Rangeland Monitoring Utilization Studies TR4400-3 (1984) Pgs 39 and 40. S=Seedling/Y=Young/M=Mature/D=Decadent Form Class 3 or 6 = All Available Severely Hedged or Partially Available Severely Hedged.				

Monitoring vegetation resources in 2005 and 2010 has shown an overall upward trend in the allotments under the Axial Basin CRMP, see graphs below (trend defined as change in ecological status is described as "toward (upward)" or "away from (downward)" from the potential natural community or desired plant community).







1.3.2 Monitoring Data Provided by Range Consultant

The following data and analysis was contributed by Dr. Roy Roath at the request of Tom Kourlis. Dr. Roath is a Professor Emeritus of Rangeland Management at Colorado State University and an independent private rangeland consultant. This report was submitted to the LSFO-BLM on May 2, 2013. In accordance with the 2011 Little Snake Record of Decision and Resource Management Plan (RMP) the BLM authorizes 2,374 Animal Unit Months (AUMs) for the Lower Boxleder Gulch Allotment and 708 AUMs for the Lower Maudlin Gulch Allotment for a total of 3,082 Public Land AUMs.

Rangeland Report on Estimated Stocking Rate in Axial Basin by Dr. Roy Roath – Rangelander Education and Consulting, LLC.

I have evaluated the expected stocking rate in the Axial Basin, as requested by Tom Kourlis of Kourlis Ranches. This follows doing a comprehensive evaluation of the sagebrush use in the Basin in the winter and spring of 2012 (see Attachment 2 of this EA for sagebrush use evaluation). *In preparing for these evaluations I have traveled the entire Basin several times, both during the winter and spring of 2012. This is added to experience in working on the Axial Basin CRM over many years starting in 1990. Additionally, I worked intensively with the Kourlis Ranches in the Integrated Resource Management Program and other work beginning in 1983.*

The stocking rate estimates contained here are based on ocular estimates and use of associated Natural Resource Conservation Service (NRCS) range site guides to derive the approximate stocking rate per acre in three parts of the Basin and for the crested wheatgrass planted areas. These expected stocking rate figures are not intended to reflect an intensive and comprehensive sampling of the vegetation communities and associated yields across the Basin but rather a first cut in evaluating the current forage on offer relative to the gross demand from livestock.

The areas used for the calculation were Lower Boxelder and Lower Maudlin allotments and the associated private land contained within the boundaries of those allotments. It does not include the forage furnished by Colowyo.

	Acreage	*Est Cap/AUM Acre*	*Total Cap AUM*
Salt Desert Shrub	*4,350*	*0.15*	*652.5*
Crested wheatgrass	*4,350*	*.0275*	*1,196.25*
Semi Desert Sagebrush	*10,150*	*0.25*	*2,537*
Foothills	*10,150*	*.0375*	*3,806.25*
Totals	***29,000***		***8,192.5 AUMs***

The above values include use on sagebrush by sheep and wildlife in the est. capacity.

These estimates include sagebrush use because it is part of the grazed component by both sheep and wildlife in the Basin. The number reflected above is far above the expected gross livestock use in the Basin of 4,273 AUMs of livestock demand. This represents a large degree of margin to include wildlife especially, mule deer and sage grouse uses.

1.3.3 Monitoring Related to the Feeding of Hay and Hay Storage Facilities

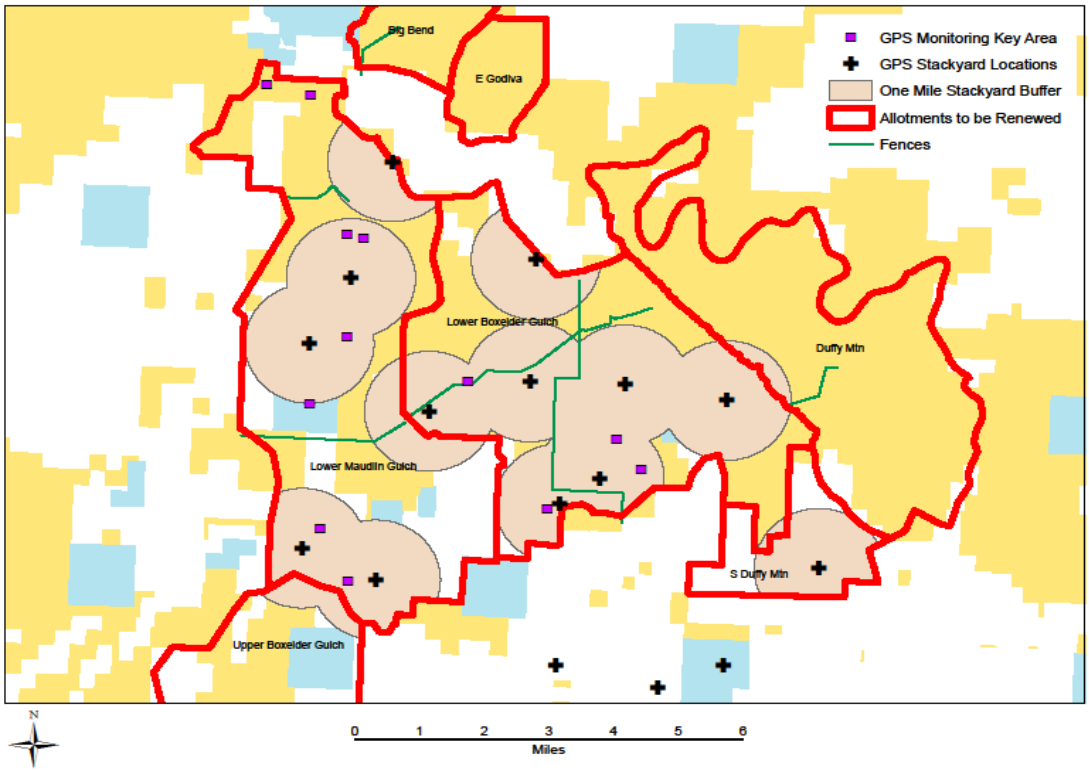
The following graphs and tables display data collected from 2010 to 2014 on permanent monitoring sites. This data does not reflect the allotments as a whole but is intended to reflect the impacts of feeding hay in proximity to stackyards and provide some information which responds to the question as associated to the issue brought forward during scoping "*Does concentrated sheep use associated with the feeding of hay impact vegetative resources in the same areas".* Current and previous permit Terms and Conditions allow for 50% utilization of key grass species and 40% utilization of key browse species

Acreage calculations with a one mile buffer around all stackyards within the Lower Boxelder Gulch, Lower Maudlin Gulch, and South Duffy Mtn. Allotments are as follows:

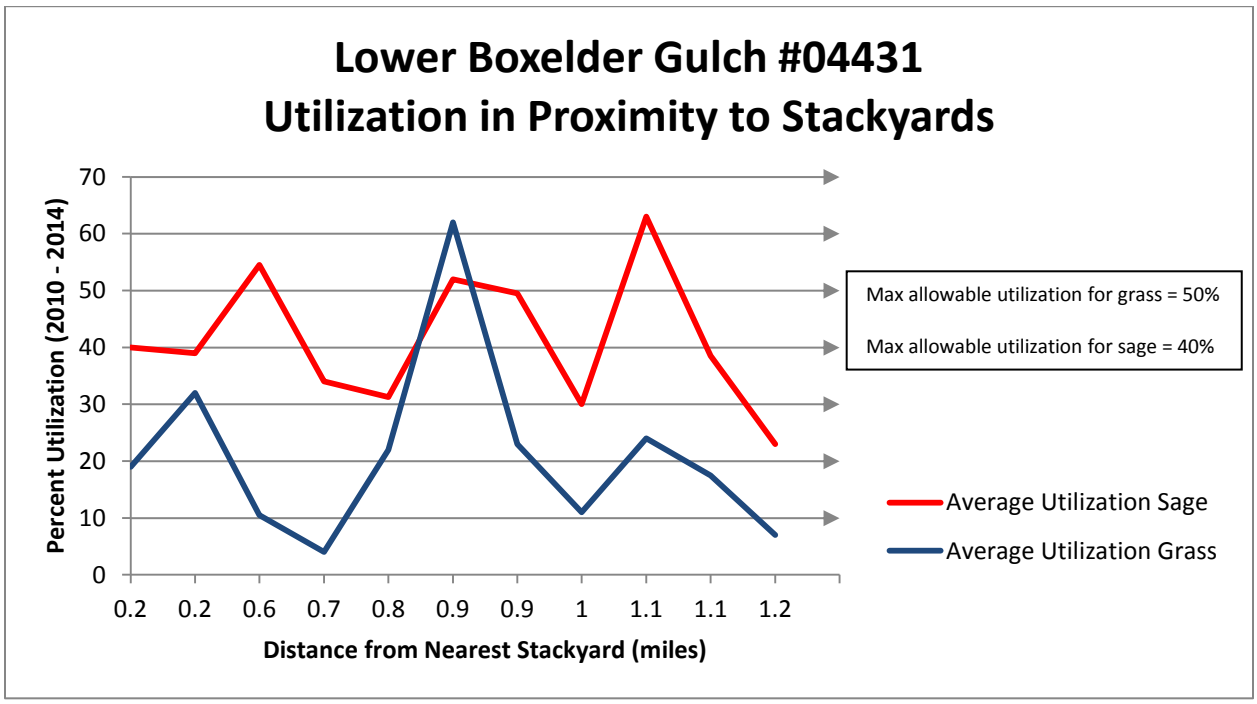
Total Allotment Acreages
Lower Boxelder Gulch – 13,650 Acres
Lower Maudlin Gulch - 15,181 Acres
South Duffy Mtn - 2,420 Acres
31,251 Total Acres

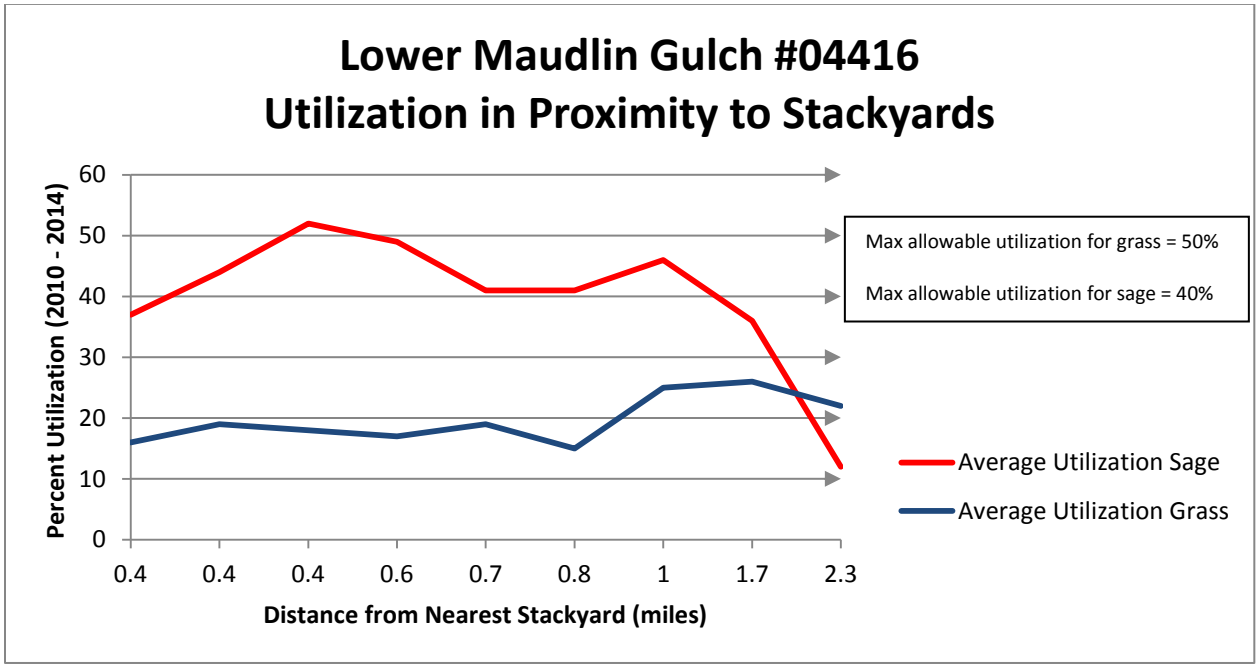
Acreage consumed with one mile stackyard buffers is approximately 19,000 acres, equivalent of 61% of total acreage for the above mentioned allotments (see figure 1 below).

1.3.4 Figure 1



2011 – 2013 Colorado Parks and Wildlife (CPW) data shows that out of the twelve active sage-grouse leks within the Lower Maudlin Gulch and Lower Boxelder Gulch Allotments, seven occur within one mile of stackyards and two occur within one half mile of stackyards.





Trend Plot Data in Relation to Proximity to Stackyards

BRTE = *Bromus tectorum* (Cheatgrass)
ARTR = *Artemisia tridentata* (Sagebrush spp.)
CHVI = *Chrysothamnus viscidiflorus* (Rabbitbrush spp.)

Allotment	Year	Plot #	% Cover Grasses (does not include BRTE)	% Cover Forbs	% Cover Browse (ARTR)	% Cover (BRTE)	Distance to Nearest Stackyard
Lower Boxelder Gulch	2005	1	2.1	4.3	4.6	0.3	0.7 mi. S
Lower Boxelder Gulch	2010	1	2.2	5.0	5.0	0.6	
Difference			+0.1	+0.7	+0.4	+0.3	
Lower Boxelder Gulch	2005	2	11.0	0.4	84.0	0	0.8 mi. NE
Lower Boxelder Gulch	2010	2	12.0	1.0	0.7	0	
Difference			+1.0	+0.6	-83.3	0	
Lower Maudlin Gulch	2005	1	7.0	2.0	1.8	3.0	0.5 mi. NE
Lower Maudlin Gulch	2010	1	14.2	4.0	0.7	3.8	
Difference			+7.2	+2	-1.7	+0.8	
Lower Maudlin Gulch	2005	2	5.8	8.6	3.0 (CHVI)	0	1.5 mi. SW
Lower Maudlin Gulch	2010	2	13.8	18.3	2.5 (CHVI)	.4	
Difference			+8	+9.7	-0.5	+0.4	

All above data that refers to "proximity to stackyards" was taken using existing monitoring data and overlaying with BLM collected Global Positioning System (GPS) locations of stackyards and monitoring sites. Distances were obtained using Geographical Information System (GIS) computer software. All GPS and GIS data is approximate.

1.4 PURPOSE AND NEED

BLM permits #0501040 and #0501014, which authorize livestock grazing on the Elkhorn Creek #04615, Lower Boxelder Gulch #04431, Duffy Mountain #04432, South Duffy Mountain #04430, Big Bend #04414, East Godiva #04415, Lower Maudlin Gulch #04416, and Upper Boxelder Gulch #04424 Allotments expired on December 31, 2011. Livestock grazing has continued to be authorized in accordance with Section 415, H.R.2055 (CONSOLIDATED APPROPRIATION ACT, 2012) since that time. These permits are subject to renewal at the discretion of the Secretary of the Interior, who delegated the authority to BLM, for a period of up to ten years. BLM has the authority to renew the livestock grazing permits and leases consistent with the provisions of the *Taylor Grazing Act, Public Rangelands Improvement Act, Federal Land Policy and Management Act,* and Little Snake Field Office's *Record of Decision and Resource Management Plan, October 2011* (LSFO RMP/EIS). This plan includes the *Colorado Public Land Health Standards* and the *Guidelines for Livestock Grazing Management.*

BLM is required to provide for public uses of public land resources under the principles of multiple use and sustained yield. Among these uses is the allocation of forage for the purposes of domestic livestock grazing. BLM allocates grazing privileges in a manner that ensures orderly and sustainable consumption of forage while ensuring that wildlife habitat, vegetative, and soil resources remain healthy and provide for a wide array of other public benefits.

This Environmental Assessment (EA) will analyze the impacts of livestock grazing on public land managed by the BLM. The analysis will recommend terms and conditions to the permit/lease which would improve and/or maintain public land health. The Proposed Action and alternatives will be assessed for meeting land health standards.

In order to graze livestock on public land, the livestock producer (permittee) must hold a grazing permit. The grazing permittee has preference to receive the permit if grazing is to continue. The LSFO RMP/EIS provides for livestock grazing in the project area; this EA is a site specific analysis to determine if grazing should continue as provided for in the land use plan and to identify the conditions under which it can be renewed. This action is needed to respond to expired permits.

In order to continue meeting the stated management objectives for livestock grazing in these allotments and maintain consistency with the Little Snake Resource Management Plan and intentions of the expired CRMP, the grazing permits provide a baseline livestock grazing strategy for the future renewal of a multi-agency/stakeholder CRMP. While the original CRMP included wildlife management objectives, the proposed grazing permit renewal focuses on livestock management. Non livestock grazing related objectives stated in the CRMP are outside the scope of this document.

1.4.1 Decision to be Made

The BLM will decide whether to issue the permits with the same terms and conditions, new terms and conditions, or to withhold issuance of the permits.

1.5 RESOURCE OBJECTIVES

The Proposed Action would continue many of the objectives of the CRMP for the Lower Boxelder Gulch and Lower Maudlin Gulch Allotments in a manner that improves and sustains the natural resource base and assure wildlife and livestock grazing demands are in balance with forage production. In addition, the range of alternatives would address resource concerns that either were not fully addressed in the original CRMP or were of lesser focus or concern at the time of the original CRMP. The range of alternatives will also provide for adjustment to changes in resource concerns and focus that have occurred since the original CRMP, and continue progress towards meeting Land Health Standards while sustaining public land grazing practices under multiple use management. The BLM would continue to facilitate partnerships with other federal and state agencies, local governments, and private interests in the management of public lands within the project area.

Specific grazing permit objectives are:

- Assure livestock management practices are sustainable and compatible with improving and preserving sage grouse and big game habitat.

- Achieve and sustain Land Health and Riparian Proper Functioning Condition Standards under the guidance of multiple use management.

Meeting these objectives would be facilitated by adopting an adaptive management approach to livestock grazing (see sections 2.2.5 & 2.2.7 Adaptive Management and Flexibility). There are no range improvement projects analyzed in this EA; if a need for a specific range project is identified in the future, a project specific EA would be prepared. All range improvement projects necessary for implementation of the 1993 CRMP were identified and analyzed in EA # CO-016-93-020 Axial Basin Coordinated Resource Management Plan.

1.6 PLAN CONFORMANCE REVIEW

The Proposed Action is subject to and has been reviewed for conformance with the following plan (43 CFR 1610.5, BLM 1617.3):

Name of Plan: Little Snake Record of Decision and Resource Management Plan (RMP)

Date Approved: October 2011

Decision Language: The Proposed Action and alternatives are consistent with the Little Snake Record of Decision and Resource Management Plan, Livestock Grazing Management goals to manage resources, vegetation, and watersheds to sustain a variety of uses, including livestock grazing, and to maintain the long-term health of the rangelands; provide for efficient management of livestock grazing allotments; and contribute to the stability and sustainability of the livestock industry.

Section/Page: 2.14 Livestock Grazing/RMP-41

1.7 PUBLIC PARTICIPATION

1.7.1 Scoping and Alternative Development: NEPA regulations (40 CFR §1500-1508) require that the BLM use a scoping process to identify potential significant issues in preparation for impact analysis. The principal goals of scoping are to allow public participation to identify issues, concerns, and potential impacts that require detailed analysis.

External Scoping Summary: This EA is included in the NEPA log posted on the BLM e-planning web site: https://www.blm.gov/epl-front-office/eplanning/nepa/nepa_register.do

The Little Snake Field Office sent out a Notice of Public Scoping to all interested parties on February 14, 2011 to determine the level of public interest, concern, and resource conditions on the grazing authorizations that were due for renewal in fiscal year 2011. A Notice of Public Scoping was posted on the Internet, at the Colorado BLM Home Page, asking for public input on grazing permit and lease renewals. Individual letters were sent to the affected permittee/lessee informing them that their permit and/or lease was due for renewal and requesting any information they wanted included or taken into consideration during the renewal process. The issuance of a grazing permit is being carefully analyzed within the scope of the specific action being taken, resources issues or concerns, and public input received. No comments were received.

On March 1, 2011 a second letter and request for input was sent to permittees, base property owners, all interested parties, and the original members of the 1993 CRMP Technical Review Team.

A third scoping letter was sent to Kourlis Ranch, Earle, Wilton & Sons, and Colowyo Coal Company L.P. on February 8, 2013 outlining three potential alternatives developed by the BLM. The permittees/base property owners were asked to provide comments and were invited to provide additional alternatives or to recommend changes to the existing alternatives.

A fourth scoping letter was sent on April 5, 2013 to permittees, base property owners, all interested parties, cooperators originally involved in the development of the 1993 CRMP, and the original members of the 1993 CRMP Technical Review Team. This round of scoping summarized all previous scoping efforts. Comments, and/ or, alternative preferences were received by:

Colorado Parks and Wildlife
Dean Gent - Local rancher and original members of the 1993 CRMP Technical Review Team
Dennis Phillipi – Certified Range Management Consultant and owner of Natural Resource Options Inc. Consulting Service
Moffat County Commissioner – Charles G. Grobe
Dr. Roy Roath – Professor Emeritus Rangeland Management Colorado State University and original member of the 1993 CRMP Technical Review Team
Harry Kourlis Ranch – Tom Kourlis, current permittee
Leon Earle – Current permittee

Western Watersheds Projects – Interested party, responded that they had received the scoping letters and alternatives and were interested in the permit renewal, but were unable to respond before the end of the comment period on May 5, 2013.

Based on scoping as of the letter dated April 5, 2013, three resulting action alternatives that meet BLM's purpose and need, will be analyzed in detail and three will not be considered further (See Chapter 2 for more information on these 6 alternatives).

On February 23, 2015 a fifth scoping letter along with a preliminary unsigned EA was mailed to permittees, base property owners, all interested parties, cooperators originally involved in the development of the 1993 CRMP, and the original members of the 1993 CRMP Technical Review Team. This round of scoping was to present a new alternative, Alternative D (Reduced Feeding Alternative) that was not presented in the initial scoping process but was developed after internal review and additional consultation, cooperation, and coordination with Kourlis Ranch and other stakeholders. One of the primary functions of presenting this EA for public review and comment is to adequately scope this reduced feeding alternative. In addition this effort was to present the entire analysis contained in the EA and accept comments/concerns to be considered prior to issuance of a Proposed Decision. Comments, and/ or, alternative preferences were received by:

Colorado Parks and Wildlife
Dean Gent - Local rancher and original members of the 1993 CRMP Technical Review Team
Moffat County Commissioners – John Kinkaid, Charles G. Grobe, and Frank Moe
Dr. Roy Roath (comments incorporated within Harry Kourlis Ranch comments) – Professor Emeritus Rangeland Management Colorado State University and original member of the 1993 CRMP Technical Review Team
Harry Kourlis Ranch – Tom Kourlis, current permittee
Leon Earle – Current permittee
Western Watersheds Projects – Interested party
Colorado First Conservation District (via Natural Resource Conservation Service (NRCS) – Interested party and CRMP Cooperator
An additional unsolicited comment (not on mailing list) was received from Gary James, Axial Basin landowner - who was directed to the BLM by Colorado Parks and Wildlife (CPW) after contacting CPW about sage-grouse concerns related to the grazing of sheep in Axial Basin

Persons/Agencies Consulted: See above detailed description.

Internal Scoping Summary: The No Action Alternative, an Applicant Proposed Alternative, a No Feeding Alternative, and a No Grazing Alternative were introduced to the Little Snake NEPA interdisciplinary team on May 20, 2013. Staff members representing all disciplines that are analyzed in this document were present. A Reduced Feeding Alternative and revised EA were introduced to the Little Snake NEPA interdisciplinary team on May 12, 2014.

Issues Identified:

- The winter feeding of sheep and presence of stackyards on public & private lands within allotments.
- Condition of sage-grouse habitat.

- Condition of big game winter habitat within Axial Basin.
- Cross country use of tractors and equipment in travel restricted areas and off existing roads and trails.
- Rationale for continued feeding of sheep. Kourlis Ranch has been feeding sheep corn and high protein alfalfa hay to improve livestock nutrition, which has facilitated a high twinning percentage – higher than most sheep producers in Northwest Colorado. Feeding sheep an energy and protein supplement also allows a wool harvest that has a high tensile strength and more length. As alfalfa intake increases so does the lamb drop rate (number of lambs born alive per pregnant ewe) above 160%. These practices resulted in a weaning percentage in excess of 125% (frequently 130%), where the state average is approximately 105 to 108%. Feeding corn and alfalfa or high protein hay allows more range nutrients to be absorbed into the body. This occurs because the natural oils that exist in sagebrush limit nutrition intake from the stomach into the body. Supplementing with corn and high protein hay breaks down those oils allowing nutrient absorption, feeding allows sheep the ability to thrive on lower quality feed.

1.8 Administrative Actions

The percentage of public land ("% PL") for each allotment is the proportion of livestock forage available on public lands within the allotment compared to the total amount available from both public lands and those owned or controlled by the permittee. *See* 43 CFR § 4130.3-2(g). The following table shows (recalculates) the % PL for each allotment based on the most updated information available to BLM. It eliminates the credit (an artificial reduction in the % PL from 99% to 50%) given to the Harry Kourlis Ranch under the prior grazing permit for feed that it supplied to sheep on the Lower Boxelder Gulch Allotment.

The following changes will be incorporated into each alternative analyzed, excluding the No Action Alternative.

Allotment	Permittee	Previous % PL	Recalculated % PL
Elkhorn Creek #04615	Kourlis Ranch	28	30
Lower Boxelder Gulch #04431	Kourlis Ranch	50	99
	Earle, Wilton & Sons	98	99
Duffy Mountain #04430	Kourlis Ranch	100	97
	Earle, Wilton & Sons	100	99
South Duffy Mountain #04430	Kourlis Ranch	10	27
Big Bend #04414	Earle, Wilton & Sons	100	98
East Godiva #04415	Earle, Wilton & Sons	94	96
Lower Maudlin Gulch #04416	Earle, Wilton & Sons	59	64
Upper Boxelder Gulch #04424	Earle, Wilton & Sons	55	41

CHAPTER 2 - PROPOSED ACTION AND ALTERNATIVES

2.1 INTRODUCTION

The purpose of this chapter is to provide information on the Proposed Action and Alternatives. Alternatives considered but not analyzed in detail are also discussed.

2.2 ALTERNATIVES ANALYZED IN DETAIL

2.2.1 Proposed Action

Renew BLM permits #0501040 and #0501014, which authorizes livestock grazing on the Elkhorn Creek #04615, Lower Boxelder Gulch #04431, Duffy Mountain #04432, South Duffy Mountain #04430, Big Bend #04414, East Godiva #04415, Lower Maudlin Gulch #04416, and Upper Boxelder Gulch #04424 Allotments. Based on analysis of the alternatives the permits would be renewed based on one of the following scenarios.

2.2.2 Alternative A (No Action Alternative/Current Authorized Use)

Harry Kourlis Ranch
Authorization #0501040

Allotment	Livestock Number	Kind	Dates From	To	% Public Land	AUMs
Elkhorn Creek	3,550	Sheep	11/01	11/25	28	163
#04615	2,200	Sheep	05/13	06/30	28	198
	1,400	Sheep	09/25	10/12	28	46
	310	Cattle	10/20	12/20	28	177
					Total	584
Lower Boxelder	3,000	Sheep	03/01	04/06	50	365
Gulch #04431	500	Sheep	04/07	04/23	50	28
	3,350	Sheep	04/24	05/07	50	154
	3,000	Sheep	02/26	02/28	50	30
	3,500	Sheep	12/07	01/25	50	575
					Total	1,152
Duffy Mountain	2,900	Sheep	04/07	04/23	100	324
#04432	1,410	Sheep	05/08	05/13	100	56
					Total	380
South Duffy	1,400	Sheep	04/21	05/07	10	16
Mountain	3,400	Sheep	05/07	05/09	10	7
#04430	1,400	Sheep	05/14	06/18	10	33
	3,000	Sheep	01/25	02/10	10	34
					Total	90

Special Terms and Conditions

For detailed on/off dates on #04431 and #04432, see the Axial Basin Coordinated Resource Management Plan (CRMP), 1993.

Supplemental feed approved, as necessary.

(1) The permittee is allowed five days flexibility in pasture movements, including into and out of the allotment, as long as the amount of specified grazing use (AUMs) is not exceeded.

(2) Permittee is allowed 16 days use in the South Duffy Mountain allotment with 3000 sheep (34 AUMS) between December 5 and April 6, if necessary, to comply with the Axial Basin Coordinated Resource Management Plan.

(3) Specific grazing use in the Lower Boxelder Gulch Allotment is specified in the Axial Basin CRMP. A portion of the AUMs associated with the Lower Boxelder Gulch Allotment may be used in the Lower Maudlin Gulch Allotment as specified in the plan.

The above permit is subject to Standard and Common Terms and Conditions, see Appendix 3.

Wilton Earle and Sons
Authorization #0501014

Allotment	Livestock Number	Kind	Dates From	To	% Public Land	AUMs
Big Bend	300	Cattle	04/20	05/04	100	148
#04414	19	Cattle	09/01	12/15	100	66
					Total	214
East Godiva #04415	267	Cattle	04/20	05/04	94	124
Lower Maudlin	428	Cattle	05/05	06/30	59	473
Gulch #04416	327	Cattle	10/25	11/30	59	235
					Total	708
Upper Boxelder Gulch #04424	251	Cattle	07/01	09/30	55	418
Lower Boxelder	299	Cattle	05/05	06/30	98	549
Gulch #04431	564	Cattle	10/25	11/30	98	672
					Total	1,221
Duffy Mountain #04432	319	Cattle	07/01	09/30	100	965

Special Terms and Conditions

(1) The permittee is allowed five days flexibility in pasture movements, including into and out of the allotments, as long as the amount of specified grazing use (AUMs) is not exceeded.

(2) The Lower Maudlin Gulch and Lower Boxelder Gulch Allotments will be run in compliance with the Axial Basin CRMP.

(3) This permit is contingent upon a base property lease.

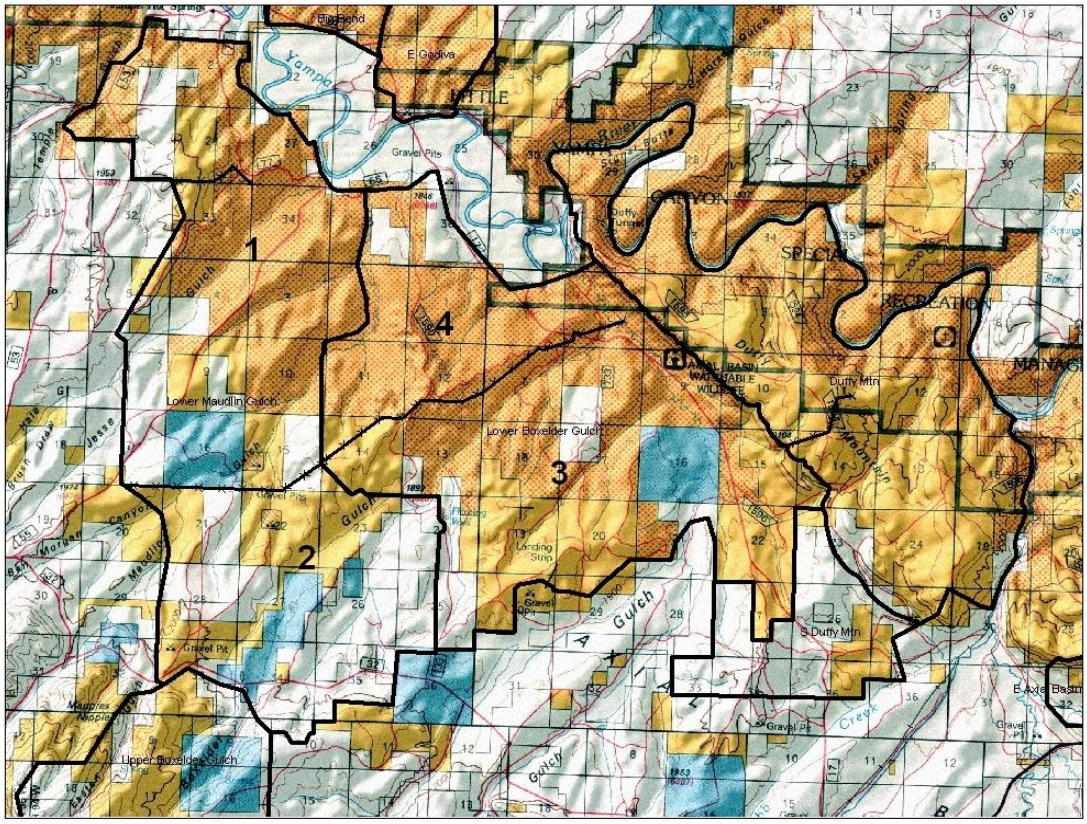
(4) Early spring use will be alternated between East Godiva #04415 and Big Bend #04414 Allotments so that neither allotment is grazed first for two consecutive years.

(5) Turn in dates on Duffy Mountain Allotment #04432 will be alternated between the two pastures so neither pasture is grazed first for two consecutive years. The additional water developments will need to be implemented in order for this rotation to be feasible every year.

The above permit is subject to Standard and Common Terms and Conditions, see Appendix #3. The grazing system currently in place within the Axial Basin CRMP is as follows:

Year	**Pasture 1**	**Pasture 2**	**Pasture 3**	**Pasture 4**	**Type Livestock**
2010/2011	Z 48 days	Deferred	Y 45 days	X 28 days	Sheep
2011	B 26 days	A 17 days	Deferred	C 14 days	Cattle
2011/2012	Deferred	Y 38 days	X 52 days	Z 31 days	Sheep
2012	A 23 days	Deferred	C 21 days	B 13 days	Cattle
2012/2013	Y 46 days	X 31 days	Z 44 days	Deferred	Sheep
2013	Deferred	C 17 days	B 25 days	A 15 days	Cattle
2013/2014	X 55days	Z 36 days	Deferred	Y 30 days	Sheep
2014	C 26 days	B 15 days	A 21 days	Deferred	Cattle

Where ABC is the sequential order of pasture moves for cattle and XYZ is the sequential order of pasture moves for sheep and the pasture numbers are as follows:



2.2.3 Alternative B (Applicant Proposed Alternative)

Harry Kourlis Ranch
Authorization #0501040

Allotment	Livestock Number	Kind	Dates From	To	% PL	AUMs
Elkhorn Creek	2,797	Sheep	05/12	07/03	30	292
#04615	1,929	Sheep	09/20	12/05	30	293
					Total	585
			OR			
	278	Cattle	05/12	12/10	30	584
					Not Scheduled	1
					Total	585
Lower Boxelder	2,282	Sheep	12/05	02/28	99	1,278
Gulch #04431	2,282	Sheep	03/01	05/05	99	980
					Total	2,258
			OR			
	344	Cattle	05/01	06/15	99	515
	344	Cattle	10/15	12/10	99	638
					Total	1,153

Duffy Mountain #04432	1,420	Sheep	04/07	05/17	97		380
			OR				
	284	Cattle	05/05	06/15	97		380
South Duffy Mountain #04430	253	Sheep	12/03	02/28	27		40
	253	Sheep	05/01	06/20	27		50
						Total	90
			OR				
	199	Cattle	05/14	06/18	27		90

Special Terms and Conditions

(1) Grazing use will not be authorized in excess of the amount of specified use for each allotment. Numbers of livestock authorized in the allotment(s) may be more or less than the number listed on the permit within the grazing use periods as long as the amount of specified use (AUMs) is not exceeded.

(2) The permittee is allowed five days flexibility as to the length of time in each pasture. The permittee is also allowed five days flexibility into and out of the allotments, as long as the amount of specified use (AUMS) is not exceeded.

(3) In order to preserve existing Land Health Standards, the Lower Maudlin Gulch and Lower Boxelder Gulch Allotments will be run in compliance with the Axial Basin CRMP Grazing Rotation when the kind of livestock is sheep; provided however, that as to the spring use in Pasture 3, the sheep (once sheared) will either graze the pasture which will be used first by the sheep the succeeding winter, or the sheep will go on Duffy Mountain for 320 AUMs, then come to Pasture 3 for four days, the 2nd to the 5th of May, depending on the moisture conditions. On drier years, sheep will go onto Duffy Mountain in early April. The remainder of the sheep AUMs will be used from 5/5 to 5/15. If Kourlis has cattle grazing in the Axial Basin, the CRMP grazing rotation will not be followed, but the CRMP will otherwise apply. Kourlis cattle shall only use the number 3 pasture.

(4) If the allotments are being grazed with sheep, the terms and conditions of the Axial Basin CRMP as they relate to these allotments will be incorporated into the Permit Grazing Plan (Allotment Management Plan). A portion of the AUMs associated with the Lower Boxelder Allotment may be used in the Lower Maudlin Gulch Allotment as specified in the sheep & cattle livestock rotation schedule.

(5) Supplemental feed is approved, as specified in the CRMP document. Hay shall be certified weed free. All range improvement permits and applications associated with previously authorized agreements and authorizations will continue.

(6) Sheep are allowed in Pasture 3 each year for shearing and before lambing between 4/15 to 5/5 every year.

(7) Using CPW provided maps, sheep camps, feeding areas, and overnight bedding areas will not be located within 0.25 miles of a lek from March 15th – May 15th.

The above permit is subject to Standard and Common Terms and Conditions, see Appendix 3.

Wilton Earle and Sons
Authorization #0501014

Allotment	Livestock Number	Kind	Dates From	To	% Public Land	AUMs
Big Bend #04414	250	Cattle	05/01	05/20	98	161
					Voluntary Non-Use	53
					Total	214
East Godiva #04415	200	Cattle	05/01	05/15	96	95
					Voluntary Non-Use	31
					Total	124
Lower Maudlin Gulch #04416	394	Cattle	05/05	06/30	64	473
	301	Cattle	10/25	11/30	64	234
					Not Scheduled	1
					Total	708
Upper Boxelder Gulch #04424	337	Cattle	07/01	09/30	41	418
Lower Boxelder Gulch #04431	296	Cattle	05/05	06/30	99	549
	558	Cattle	10/25	11/30	99	672
					Total	1,221
Duffy Mountain #04432	322	Cattle	07/01	09/30	100	964
					Not Scheduled	1
					Total	965

Special Terms and Conditions

(1) Grazing use will not be authorized in excess of the amount of specified use for each Allotment. Numbers of livestock authorized in the allotment(s) may be more or less than the number listed on the permit within the grazing use periods as long as the amount of specified use is not exceeded.

(2) The permittee is allowed five days flexibility as to the length of time in each pasture. The permittee is also allowed five days flexibility into and out of the allotments, as long as the amount of specified use (AUMS) is not exceeded.

(3) In order to preserve existing Land Health Standards, the Lower Maudlin Gulch and Lower Boxelder Gulch Allotments will be run in compliance with the Axial Basin CRMP Grazing Rotation when sheep are grazing.

(4) Turn in dates on Duffy Mountain Allotment #04432 will be alternated between the two pastures so neither pasture is grazed first for two consecutive years.

(5) The permittee is allowed five days flexibility into and out of allotments, as long as the amount of specified grazing use (AUMs) is not exceeded.

(6) To address Land Health Standards not being met fall use in the Big Bend Allotment is being eliminated. AUMs would be temporarily reduced by approximately 25% in both the Big Bend and East Godiva Allotments. Turnout would be deferred in both the Big Bend and East Godiva Allotments from 4/20 to 5/01. These changes would help ensure progress towards meeting Land Health Standards is made.

(7) If either the Big Bend or East Godiva Allotments are not used in the spring, the allotment would be available for fall use for a period no longer than authorized in the spring. This fall use would be allowed for any period between 10/01 and 11/30. Fall use would only be authorized in one of the two allotments per year, regardless of spring use.

(8) Supplemental feed is approved, as specified, to increase digestibility with the use of protein blocks and tubs.

The above permit is subject to Standard and Common Terms and Conditions, see Appendix 3.

2.2.4 Alternative C (No Feeding Alternative)

Under this Alternative all previously authorized feeding agreements and authorizations would be cancelled. All range improvement permits and applications associated with previously authorized feeding agreements and authorizations would be cancelled.

Kourlis Ranch would be exclusively authorized to remove and retain or dispose of all materials used in construction of infrastructure associated with the feeding and storage of hay on the Lower Boxelder Gulch #04431, South Duffy Mountain #04430, and Lower Maudlin Gulch Allotments #04416 Allotments. This stipulation shall remain in effect until December 31, 2015. After that date the BLM shall remove and retain or dispose of any remaining material or authorize other entities to complete removal.

Harry Kourlis Ranch
Authorization #0501040

Allotment	Livestock Number	Kind	Dates From	To	% Public Land		AUMs
Elkhorn Creek	3,300	Sheep	11/01	11/25	30		163
#04615	2,050	Sheep	05/13	06/30	30		198
	1,300	Sheep	06/25	10/12	30		46
	291	Cattle	10/20	12/20	30		178
						Total	585
Lower Boxelder	1,164	Sheep	12/05	02/28	99		652
Gulch #04431	1,164	Sheep	03/01	05/05	99		500
						Total	1,152
Duffy Mountain #04432	1,455	Sheep	04/07	05/17	97		380
South Duffy	253	Sheep	12/03	02/28	27		40
Mountain	253	Sheep	03/01	06/20	27		50
#04430						Total	90

Special Terms and Conditions

(1) Each year the Lower Boxelder Gulch and Lower Maudlin Gulch permittees and BLM will select a rotation schedule from the Axial Basin Livestock Rotation List prior to December 1st.

(2) A portion of the AUMs associated with the Lower Boxelder Gulch Allotment may be used in the Lower Maudlin Gulch Allotment as specified in the Axial Basin Livestock Rotation List.

(3) For the Lower Boxelder Gulch and Lower Maudlin Gulch Allotments, within the specified season of use and annual rotation selection, no pasture for sheep may be grazed for more than sixty days and no pasture for cattle may be grazed for more than thirty days.

(4) Emergency feeding on the public lands may be required as a result of an unforeseen event which limits the forage available for livestock. Feeding hay as a result of fire, flood, or snow is an example. Emergency feeding is authorized under this permit for short periods while the emergency exists or until the livestock can be removed. The permittee shall, if reasonably possible, give the LSFO authorized officer prior notice of the feeding. The permittee shall submit a written report to the authorized officer no later than ten calendar days after emergency feeding is initiated which describes the purpose, type, duration, location, and amount of the emergency feed used by the permittee. When emergency feeding occurs, the BLM authorized officer will evaluate the circumstances to determine if the permit should be suspended in whole or in part, or if action is needed to close the allotment to livestock grazing.

(5) Supplemental feeding is the practice of adding food to the diet of livestock which is not naturally available on the public lands. Salt, minerals, vitamins, protein blocks, and cubes, and

high quality alfalfa hay are examples of supplements. The permittee may request, and the LSFO authorized officer may approve at his discretion, supplemental feed to correct deficiencies observed in the animal's diet from forage, provided that it is not used to augment dry matter requirements of the livestock. The authorized officer may, at his discretion, set reasonable terms and conditions for the use, purpose, duration, location, and amount of supplemental feed consistent with BLM regulations and policies.

(6) If livestock must leave an allotment for any reason they may return, conditions allowing, and must continue the selected rotation.

(7) When Pasture 3 is deferred from sheep use or not scheduled for use during shearing season, sheep shall be sheared at the shearing corrals in Pasture 3 and remain in the pasture no longer than 2 days after shearing. Sheep must be held on the Duffy Mountain Allotment until immediately prior to shearing. The BLM shall be notified of the shearing dates prior to the beginning of shearing operations.

(8) The permittee is allowed five days flexibility into and out of allotments, as long as the amount of specified grazing use (AUMs) is not exceeded.

(9) Using CPW provided maps, sheep camps and overnight bedding areas will not be located within 0.25 miles of a lek from March 15th – May 15th.

(10) Post season Actual Use billing is in effect. Actual use reports are required within 15 days of discontinued use for that allotment for the grazing year. Lower Boxelder Gulch and Lower Maudlin Gulch may be submitted concurrently as one allotment.

The above permit is subject to Standard and Common Terms and Conditions, see Appendix #3.

Wilton Earle and Sons
Authorization #0501014

Allotment	Livestock Number	Kind	Dates From	To	% Public Land	AUMs
Big Bend	250	Cattle	05/01	05/20	98	161
#04414					Voluntary Non-Use	53
					Total	214
East Godiva	200	Cattle	05/01	05/15	96	95
#04415					Voluntary Non-Use	31
					Total	124
Lower Maudlin	400	Cattle	05/05	06/30	64	480
Gulch #04416	293	Cattle	10/25	11/30	64	228
					Total	708

Lower Boxelder	401	Cattle	05/05	06/30	98		736
Gulch #04431	408	Cattle	10/25	11/30	98		486
						Total	1,222
Upper Boxelder Gulch #04424	337	Cattle	07/01	09/30	41		418
Duffy Mountain	322	Cattle	07/01	09/30	99		964
#04432					Not Scheduled		1
						Total	965

Special Terms and Conditions

(1) Each year the Lower Boxelder Gulch and Lower Maudlin Gulch permittees and BLM will select a rotation schedule from the Axial Basin Livestock Rotation List prior to December 1st.

(2) Within the specified season of use and annual rotation selection, no pasture for sheep may be grazed for more than sixty days, and no pasture for cattle may be grazed for more than thirty days.

(3) If livestock must leave an allotment for any reason they may return, conditions allowing, and must continue the selected rotation.

(4) Turn in dates on Duffy Mountain Allotment #04432 will be alternated between the two pastures so neither pasture is grazed first for two consecutive years.

(6) The permittee is allowed five days flexibility into and out of allotments, as long as the amount of specified grazing use (AUMs) is not exceeded.

(7) To address Land Health Standards not being met, fall use in the Big Bend Allotment is being eliminated. AUMs would be temporarily reduced by approximately 25%, until standards are being met in both the Big Bend and East Godiva Allotments. Turnout would be deferred in both the Big Bend and East Godiva Allotments from 4/20 to 5/01. These changes would help ensure progress towards meeting Land Health Standards is made.

(8) If either the Big Bend or East Godiva Allotments are not used in the spring, the allotment would be available for fall use for a period no longer than authorized in the spring. This fall use would be allowed for any period between 10/01 and 11/30. Fall use would only be authorized in one of the two allotments per year, regardless of spring use.

(9) Post season Actual Use billing is in effect. Actual use reports are required within 15 days of discontinued use for that allotment for the grazing year. Lower Boxelder Gulch and Lower Maudlin Gulch may be submitted concurrently as one allotment.

The above permit is subject to Standard and Common Terms and Conditions, see Appendix #3.

2.2.5 Adaptive Management and Flexibility within Alternative C

Alternative C would implement the adaptive management principle for the Lower Boxelder Gulch and Lower Maudlin Gulch Allotments. The deferred rotation grazing system would allow operator's choices and flexibility for altering grazing management to account for fluctuating annual, seasonal, and climatic conditions. In this alternative the operators and BLM would select an agreed upon rotation, from a multi-rotation list (see table below) appropriate for the upcoming grazing year. The selection would be based on many factors, the primary factors to be considered would be: past and current climatic conditions, previous years use, range condition, recent monitoring data, wildlife patterns and movement, and vegetation management objectives. The adaptive management principle would apply to all allotments within the permit(s) terms and conditions.

For the Lower Boxelder Gulch and Lower Maudlin Gulch Allotments, the only dates that would remain mandatory would be the on date (12/05 for sheep and 05/05 for cattle) and off date (05/05 for sheep and 06/30 for cattle), grazing would not be allowed outside of this range, with the exception of the permits five day flexibility Term and Condition for allotment on and off dates. Pasture use date ranges are designed to be guidelines and pasture moves would be based on seasons, plant growth & phenology, climatic conditions, and utilization levels. Pasture moves may be initiated by either the BLM or permittees but must be coordinated between both parties.

There would be Special Terms and Conditions applied with respect to pasture rotations. The initial rotation list would be dynamic and allow for permanent changes that may become necessary during the term of the permits based on experiences and unforeseen circumstances. As long as any modifications or additions to the rotation list did not exceed the permitted date range, changes would be NEPA compliant by either being consistent with this analysis or with a short EA tiered off this original EA.

Monitoring would continue to follow previously established protocols to track that progress is being made toward resource objectives and Land Health Standards, or to determine if additional changes are necessary. New monitoring sites and methods may be established if circumstances warrant.

Kourlis Ranch grazing preference does not include any AUMs in the Lower Maudlin Gulch Allotment. The CRMP authorized a portion of the AUMs associated with the Lower Boxelder Gulch Allotment to be used in the Lower Maudlin Gulch Allotment as specified in the livestock rotation schedule. This practice would continue to be authorized under this alternative.

Axial Basin Livestock Rotation List

Rotation	Type Livestock	Start Date	Pasture	Pasture	Pasture	Pasture	End Date
1	Sheep	12/05	3 ~ 50 days	2 ~ 50 days	4 ~ 50 days	1 Deferred	05/05
	Cattle	05/05	1 ~ 19 days	4 ~ 19 days	3 ~ 19 days	2 Deferred	06/30

2	Sheep	12/05	2 ~ 50 days	1 ~ 50 days	3 ~ 50 days	4 Deferred	05/05
	Cattle	05/05	4 ~ 19 days	3 ~ 19 days	2 ~ 19 days	1 Deferred	06/30
3	Sheep	12/05	3 ~ 50 days	4 ~ 50 days	1 ~ 50 days	2 Deferred	05/05
	Cattle	05/05	4 ~ 19 days	1 ~ 19 days	2 ~ 19 days	3 Deferred	06/30
4	Sheep	12/05	2 ~ 50 days	1 ~ 50 days	4 ~ 50 days	3 Deferred	05/05
	Cattle	05/05	3 ~ 19 days	1 ~ 19 days	2 ~ 19 days	4 Deferred	06/30
5	Sheep	12/05	1 ~ 50 days	4 ~ 50 days	2 ~ 50 days	3 Deferred	05/05
	Cattle	05/05	4 ~ 19 days	1 ~ 19 days	2 ~ 19 days	3 Deferred	06/30
6	Sheep	12/05	1 ~ 50 days	3 ~ 50 days	4 ~ 50 days	2 Deferred	05/05
	Cattle	05/05	1 ~ 19 days	4 ~ 19 days	3 ~ 19 days	2 Deferred	06/30
7	Sheep	12/05	3 ~ 50 days	2 ~ 50 days	4 ~ 50 days	1 Deferred	05/05
	Cattle	05/05	2 ~ 19 days	3 ~ 19 days	4 ~ 19 days	1 Deferred	06/30
8	Sheep	12/05	3 ~ 50 days	2 ~ 50 days	1 ~ 50 days	4 Deferred	05/05
	Cattle	05/05	2 ~ 19 days	3 ~ 19 days	1 ~ 19 days	4 Deferred	06/30

2.2.6 Alternative D (Reduced Feeding Alternative)

Under this alternative all previously authorized feeding agreements and authorizations would be cancelled, and a new feeding agreement and authorization would be implemented (see Appendix #4). All range improvement permits and applications associated with previously authorized feeding agreements and authorizations would be cancelled.

Kourlis Ranch would be exclusively authorized to remove and retain or dispose of all materials used in construction of infrastructure associated with the feeding and storage of hay on the Lower Boxelder Gulch #04431, Duffy Mountain #04432, South Duffy Mountain #04430, and Lower Maudlin Gulch Allotments #04416 Allotments. This stipulation shall remain in effect

until December 31, 2015. After that date the BLM shall remove and retain or dispose of any remaining material or authorize other entities to complete removal.

Harry Kourlis Ranch
Authorization #0501040

Allotment	Livestock Number	Kind	Dates From	To	% Public Land		AUMs
Elkhorn Creek	3,300	Sheep	11/01	11/25	30		163
#04615	2,050	Sheep	05/13	06/30	30		198
	1,300	Sheep	09/25	10/12	30		46
	291	Cattle	10/20	12/20	30		178
						Total	585
Lower Boxelder	1,164	Sheep	12/05	02/28	99		652
Gulch #04431	1,164	Sheep	03/01	05/05	99		500
						Total	1,152
Duffy Mountain #04432	1,455	Sheep	04/07	05/17	97		380
South Duffy	253	Sheep	12/03	02/28	27		40
Mountain	253	Sheep	03/01	06/20	27		50
#04430						Total	90

Special Terms and Conditions

(1) Each year the Lower Boxelder Gulch and Lower Maudlin Gulch permittees and BLM will select a rotation schedule from the Axial Basin Livestock Rotation List prior to December 1st.

(2) For the Lower Boxelder Gulch and Lower Maudlin Gulch Allotments, within the specified season of use and annual rotation selection, no pasture for sheep may be grazed for more than sixty days. And no pasture for cattle may be grazed for more than thirty days.

(3) Supplemental feeding is authorized in accordance with the Feeding Agreement and Authorization in the Lower Boxelder Gulch #04431, Lower Maudlin Gulch #04416, and South Duffy Mountain #04430 Allotments. (See Appendix 4 of DOI-BLM-CO-N010-2013-0050-EA)

(4) When Pasture 3 is deferred from sheep use or not scheduled for use during shearing season, sheep shall be sheared at the shearing corrals in Pasture 3 and remain in the pasture no longer than 2 days after shearing. Sheep must be held on the Duffy Mountain Allotment until immediately prior to shearing. The BLM shall be notified of the shearing dates prior to the beginning of shearing operations.

(5) The permittee is allowed five days flexibility into and out of allotments, as long as the amount of specified grazing use (AUMs) is not exceeded.

(6) Using CPW provided maps, sheep camps and overnight bedding areas will not be located within 0.25 miles of a lek from March 15th – May 15th.

(7) Post season Actual Use billing is in effect. Actual use reports are required within 15 days of discontinued use for that allotment for the grazing year. Lower Boxelder Gulch and Lower Maudlin Gulch may be submitted concurrently as one allotment.

The above permit is subject to Standard and Common Terms and Conditions, see Appendix 3.

Wilton Earle and Sons
Authorization #0501014

Allotment	Livestock Number	Kind	Dates From	To	% Public Land	AUMs
Big Bend	250	Cattle	05/01	05/20	98	161
#04414					Voluntary Non-Use	53
					Total	214
East Godiva	200	Cattle	05/01	05/15	96	95
#04415					Voluntary Non-Use	31
					Total	124
Lower Maudlin	400	Cattle	05/05	06/30	64	480
Gulch #04416	293	Cattle	10/25	11/30	64	228
					Total	708
Lower Boxelder	401	Cattle	05/05	06/30	98	736
Gulch #04431	408	Cattle	10/25	11/30	98	486
					Total	1,222
Upper Boxelder Gulch #04424	337	Cattle	07/01	09/30	41	418
Duffy Mountain	322	Cattle	07/01	09/30	99	964
#04432					Not Scheduled	1
					Total	965

Special Terms and Conditions

(1) Each year the Lower Boxelder Gulch and Lower Maudlin Gulch permittees and BLM will select a rotation schedule from the Axial Basin Livestock Rotation List prior to December 1st.

(2) Within the specified season of use and annual rotation selection, no pasture for sheep may be grazed for more than sixty days, and no pasture for cattle may be grazed for more than thirty days.

(3) If livestock must leave an allotment for any reason they may return, conditions allowing, and must continue the selected rotation.

(4) Turn in dates on Duffy Mountain Allotment #04432 will be alternated between the two pastures so neither pasture is grazed first for two consecutive years.

(5) The permittee is allowed five days flexibility into and out of allotments, as long as the amount of specified grazing use (AUMs) is not exceeded.

(6) To address Land Health Standards not being met, fall use in the Big Bend Allotment is being eliminated. AUMs would be temporarily reduced by approximately 25% in both the Big Bend and East Godiva Allotments. Turnout would be deferred in both the Big Bend and East Godiva Allotments from 4/20 to 5/01. These changes would ensure progress towards meeting Land Health Standards is made.

(7) If either the Big Bend or East Godiva Allotments are not used in the spring, the allotment would be available for fall use for a period no longer than authorized in the spring. This fall use would be allowed for any period between 10/01 and 11/30. Fall use would only be authorized in one of the two allotments per year, regardless of spring use.

(8) Post season Actual Use billing is in effect. Actual use reports are required within 15 days of discontinued use for that allotment for the grazing year. Lower Boxelder Gulch and Lower Maudlin Gulch may be submitted concurrently as one allotment.

The above permit is subject to Standard and Common Terms and Conditions, see Appendix #3.

2.2.7 Adaptive Management and Flexibility within Alternative D

Alternative D would implement the adaptive management principle for the Lower Boxelder Gulch and Lower Maudlin Gulch Allotments. The deferred rotation grazing system would allow operator's choices and flexibility for altering grazing management to account for fluctuating annual, seasonal, and climatic conditions. In this alternative the operators and BLM would select an agreed upon rotation, from a multi-rotation list (see table below) appropriate for the upcoming grazing year. The selection would be based on many factors, the primary factors to be considered would be: past and current climatic conditions, previous years use, range condition, recent monitoring data, wildlife patterns and movement, and vegetation management objectives. The adaptive management principle would apply to all allotments within the permit(s) terms and conditions.

For the Lower Boxelder Gulch and Lower Maudlin Gulch Allotments, the only dates that would remain mandatory would be the on date (12/05 for sheep and 05/05 for cattle) and off date (05/05 for sheep and 06/30 for cattle), grazing would not be allowed outside of this range, with the exception of the permits' five day flexibility Term and Condition for allotment on and off dates. Pasture use date ranges are designed to be guidelines and pasture moves would be based on seasons, plant growth & phenology, climatic conditions, and utilization levels. Pasture moves may be initiated by either the BLM or permittees but must be coordinated between both parties.

There would be Special Terms and Conditions applied with respect to pasture rotations. The initial rotation list would be dynamic and allow for permanent changes that may become necessary during the term of the permits based on experiences and unforeseen circumstances. As long as any modifications or additions to the rotation list did not exceed the permitted date range, changes would be NEPA compliant by either being consistent with this analysis or with a short EA tiered off this original EA.

Monitoring would continue to follow previously established protocols to track that progress is being made toward resource objectives and Land Health Standards, or to determine if additional changes are necessary. New monitoring sites and methods may be established if circumstances warrant.

Kourlis Ranch grazing preference does not include any AUMs in the Lower Maudlin Gulch Allotment. The CRMP authorized a portion of the AUMs associated with the Lower Boxelder Gulch Allotment to be used in the Lower Maudlin Gulch Allotment as specified in the livestock rotation schedule. This practice would continue to be authorized under this alternative.

Axial Basin Livestock Rotation List

Rotation	Type Livestock	Start Date	Pasture	Pasture	Pasture	Pasture	End Date
1	Sheep	12/05	3 ~ 50 days	2 ~ 50 days	4 ~ 50 days	1 Deferred	05/05
	Cattle	05/05	1 ~ 19 days	4 ~ 19 days	3 ~ 19 days	2 Deferred	06/30
2	Sheep	12/05	2 ~ 50 days	1 ~ 50 days	3 ~ 50 days	4 Deferred	05/05
	Cattle	05/05	4 ~ 19 days	3 ~ 19 days	2 ~ 19 days	1 Deferred	06/30
3	Sheep	12/05	3 ~ 50 days	4 ~ 50 days	1 ~ 50 days	2 Deferred	05/05
	Cattle	05/05	4 ~ 19 days	1 ~ 19 days	2 ~ 19 days	3 Deferred	06/30
4	Sheep	12/05	2 ~ 50 days	1 ~ 50 days	4 ~ 50 days	3 Deferred	05/05
	Cattle	05/05	3 ~ 19 days	1 ~ 19 days	2 ~ 19 days	4 Deferred	06/30
5	Sheep	12/05	1 ~ 50 days	4 ~ 50 days	2 ~ 50 days	3 Deferred	05/05
	Cattle	05/05	4 ~ 19 days	1 ~ 19 days	2 ~ 19 days	3 Deferred	06/30

6	Sheep	12/05	1 ~ 50 days	3 ~ 50 days	4 ~ 50 days	2 Deferred	05/05
	Cattle	05/05	1 ~ 19 days	4 ~ 19 days	3 ~ 19 days	2 Deferred	06/30
7	Sheep	12/05	3 ~ 50 days	2 ~ 50 days	4 ~ 50 days	1 Deferred	05/05
	Cattle	05/05	2 ~ 19 days	3 ~ 19 days	4 ~ 19 days	1 Deferred	06/30
8	Sheep	12/05	3 ~ 50 days	2 ~ 50 days	1 ~ 50 days	4 Deferred	05/05
	Cattle	05/05	2 ~ 19 days	3 ~ 19 days	1 ~ 19 days	4 Deferred	06/30

2.2.8 No Grazing Alternative

The permits would not be renewed and the public lands within the allotments would be removed from grazing use.

2.3 ALTERNATIVES CONSIDERED BUT NOT ANAYLYZED IN DETAIL

A reduced grazing alternative was considered but not analyzed in detail because there was no justification to apply a reduced grazing alternative on all allotments, temporary AUM reductions are applied as appropriate in Alternatives B - D, plus the correction in the percent public lands reduces livestock numbers on certain allotments. In addition, as a result of the scoping process for this permit renewal the BLM has eliminated three alternatives that either excluded the intentions of the CRMP, and or, were identified as similar in design to the analyzed action alternatives and with substantially similar effects.

2.3.1 Summary Comparison of Alternatives

Presented below are the changes from Alternative A (No Action Alternative/Current Authorized Use) that would occur with selection of Alternative B (Applicant Proposed Alternative). This alternative was proposed by Kourlis Ranches and the changes are presented verbatim. BLM's rationale and response to the permittee's proposal have been annotated and explained Table 1 following the proposed changes.

The CRMP objectives as they apply to livestock grazing remain relevant[1]. The CRMP is the vehicle that facilitates financing, cost sharing and cooperation from the Moffat County Pest Program to manage the infestation of noxious weeds. As indicated in the Little Snake Resource Management Plan (RMP) noxious weeds continue to be a problem, one that is typically exacerbated by surface disturbance from energy development.[2]

The CRMP adopted desired plant species based on ecological site descriptions. These remain valid vegetation goals.[See 1]

The CRMP provides for the management of big game numbers to be consistent with the forage available. The CRMP sets as an objective continuing to provide forage for big game in order to maintain these numbers. It also allows for public hunting on a large number of privately owned acres.[3]

The CRMP allows for interim management changes in the allotment as the need arises to address other potential benefits.[4]

The CRMP implements a cattle and sheep deferred grazing rotation system for both Lower Maudlin and Lower Boxelder. Each kind of livestock defers a pasture each year.

In addition to continuing the CRMP in place, this proposed alternative achieves a number of other objectives. It provides for supplemental feeding as authorized in the CRMP in order to continue to facilitate range management and to improve digestibility of the natural forage.[5]

This alternative allows Kourlis Ranch the option to change the time of use in the event sheep winter use is found to be adverse to resource health. It also allows Kourlis Ranch to change the type of use in the event other sheep winter ranges are not a viable alternative.[see 4]

It simplifies Kourlis Ranch permit mandatory Terms and Conditions by using fewer lines of authorized use.

It adjusts the % PL to reflect the proper public land proportions in the Boxelder Allotment being billed to Kourlis Ranch.

It recalculates and updates the %PL for each allotment as part of the permit renewal process.

In order to address Land Health Standards, this alternative temporarily reduces AUMs by approximately 25% in the Big Bend and East Godiva Allotments. It defers turnout in the Big Bend and East Godiva Allotments from 04/20 to 05/01.

Broadly, this alternative avoids reverting back to a management plan where the allotments in the Axial Basin did not meet current BLM Standards and Guides- which was the case before the adoption of the CRMP.

Table 1

Footnote #	BLM's Response
1	The CRMP is over 20 years old and the last extension of the plan expired in 2003. The plan was originally developed to address a forage allocation problem between wildlife and livestock, and to provide hunting opportunities. These issues are outdated and have been replaced by contemporary issues, such as protecting sage grouse habitat.
2	Surface disturbance from energy development does not exist within the boundaries of Axial Basin CRMP.
3	While the CRMP included wildlife management objectives, the proposed grazing permit renewal process focuses on livestock management. Big game hunting limits and public access are outside the scope of this document.

4	Alternatives C & D also allows for flexibility and adaptation to changes in weather, forage growth/production, etc.
5	The regulations at 43§4100.0-5, states; "Supplemental feed means a feed which supplements the forage available from the public lands and is provided to improve livestock nutrition or rangeland management." The CRMP details the possibility of feeding hay in Exhibit C *Jensen State Wildlife Area Livestock Grazing Management Plan.* In this Exhibit, it states "As a condition of the CRMP, Kourlis has agreed to remove all sheep grazing from the areas of severe deer winter range during periods of severe winter conditions. Since there is no way to anticipate future winter conditions that may be experienced in Axial Basin, a method of estimated annual grazing reduction and composition is necessary. An estimate that at least 1 winter in 5 will be severe enough that removal of sheep grazing in the critical deer wintering areas will be necessary….Determination that this level of severity has been reached will be at the consensus of a Kourlis Ranch representative and a local DOW (CPW) representative. It is anticipated that this determination will be made sometime in mid to late December but could be earlier or later, depending on conditions. At this point all livestock grazing will be removed from the critical wintering areas and the sheep will be hay fed at a higher location in the basin for the remainder of the winter." This feeding plan could not be considered "supplemental" but would be considered "maintenance". As stated in this plan, feeding hay was only anticipated to be necessary in 1 of every 5 years, however it is now occurring annually, and without any type of consensus of winter severity. Further, feeding locations are not provided in this plan, nor is it specified whether the feeding was to be done on private or public lands. If the feeding was to be done on BLM managed lands, a BLM authorized officer must have been a signatory to the Cooperative Agreement for the *Jensen State Wildlife Area Livestock Grazing Management Plan* and the feeding locations would have been analyzed in an appropriate NEPA document. Neither of these things occurred. Additionally, the Jensen State Wildlife Area Livestock Grazing Management Plan states that sheep will be removed from the critical wintering areas in the event of a severe winter. This does not happen; rather Kourlis has constructed several hay stackyards within the severe winter range and feeds sheep within this critical habitat.

The following changes from Alternative A (No Action Alternative/Current Authorized Use) would occur with selection of the Alternative C (No Feeding Alternative):

All previously authorized feeding agreements and authorizations would be canceled. All range improvement permits and applications associated with previously authorized feeding agreements and authorizations would be cancelled. All stackyards and infrastructure associated with historic feeding practices would be removed from Public Lands.

Sheep AUMs in the Lower Boxelder Gulch would remain the same as historically authorized. The reduction in livestock numbers for this allotment is a result of the correction in the % Public Lands.

Implementation of the adaptive management approach to livestock grazing that continues the intentions of the CRMP for the Lower Boxelder Gulch and Lower Maudlin Gulch Allotments which would improve and sustain the natural resource base and assures wildlife habitat demands and livestock grazing are in balance with forage production and livestock use patterns.

Under this alternative, fall use in the Big Bend Allotment would be eliminated. AUMs would be temporarily reduced by approximately 25% in both the Big Bend and East Godiva Allotments.

Turnout would be deferred in both the Big Bend and East Godiva Allotments from 4/20 to 5/01. These changes would ensure progress towards meeting Land Health Standards is made.

Under this alternative, adjustments in cattle numbers and AUMs in the Lower Maudlin Gulch and Lower Boxelder Gulch Allotments would be implemented to more evenly distribute authorized use.

The following changes from Alternative A (No Action Alternative/Current Authorized Use) would occur with selection of the Alternative D (Reduced Feeding Alternative):

All previously authorized feeding agreements and authorizations would be canceled. All range improvement permits and applications associated with previously authorized feeding agreements and authorizations would be cancelled. Feeding would continue, but reduced from historic practices, and authorized with a new and revised Feeding Agreement and Authorization. All stackyards and infrastructure associated with historic feeding practices would be removed from Public Lands.

Sheep AUMs in the Lower Boxelder Gulch would remain the same as historically authorized. The reduction in livestock numbers for this allotment is a result of the correction in the % Public Lands.

Implementation of the adaptive management approach to livestock grazing that continues the intentions of the CRMP for the Lower Boxelder Gulch and Lower Maudlin Gulch Allotments which would improve and sustain the natural resource base and assures wildlife habitat demands and livestock grazing are in balance with forage production and livestock use patterns.

Under this alternative, fall use in the Big Bend Allotment would be eliminated. AUMs would be temporarily reduced by approximately 25% in both the Big Bend and East Godiva Allotments. Turnout would be deferred in both the Big Bend and East Godiva Allotments from 4/20 to 5/01. These changes would ensure progress towards meeting Land Health Standards is made.

Under this alternative, adjustments in cattle numbers and AUMs in the Lower Maudlin Gulch and Lower Boxelder Gulch Allotments would be implemented to more evenly distribute authorized use.

CHAPTER 3 – AFFECTED ENVIRONMENT AND EFFECTS

3.1 INTRODUCTION

Affected Resources:
The CEQ Regulations state that NEPA documents "must concentrate on the issues that are truly significant to the action in question, rather than amassing needless detail" (40 CFR 1500.1(b)). While many issues may arise during scoping, not all of the issues raised warrant analysis in an environmental assessment (EA). Issues will be analyzed if: 1) an analysis of the issue is

necessary to make a reasoned choice between alternatives, or 2) if the issue is associated with a significant direct, indirect, or cumulative impact, or where analysis is necessary to determine the significance of the impacts. Table 1 lists the resources considered and the determination as to whether they require additional analysis.

Table1. Resources and Determination of Need for Further Analysis

Determination[1]	Resource	Resource Issue/Rationale for Determination
Physical Resources		
NI	Air Quality	Activities associated with grazing that may affect air quality, namely dust and exhaust from ranch operation vehicles as well as dust from livestock hoof action, fall below EPA emission standards for the six criteria pollutants of concern (sulfur dioxide, nitrogen oxide, ground-level ozone, carbon monoxide, particulate matter [both PM2.5 and PM10], and lead). Furthermore, ranch operation and livestock activities are not a significant source of these pollutant emissions that do occur in Moffat County. Impacts to air quality caused by any alternative are therefore considered negligible.
NI	Floodplains	There are FEMA-identified 100-year floodplains within all but the Big Bend and East Godiva allotments that are subject to rare flooding. None of the alternatives analyzed include development within identified floodplains. No threat to human safety, life, welfare and property would result from implementing any of the alternatives.
NI	Hydrology, Ground	There would be no impact to ground water hydrology with implementation of any alternative as the Proposed Action consists of surface activities.
PI	Hydrology, Surface	See Section 3.2.2 for analysis.
NI	Minerals, Fluid	There would be no impact to fluid minerals by any of the alternatives. There are no fluid mineral authorizations within the proposed action boundaries.
NI	Minerals, Solid	There would be no impact to solid minerals by any of the alternatives. There are no solid mineral authorizations within the Proposed Action boundaries.
PI	Soils	See Section 3.2.1 for analysis.
NI	Water Quality, Ground	There would be no impact to ground water quality by any of the alternatives as the Proposed Action consists of surface activities.
PI	Water Quality, Surface	See Section 3.2.2 for analysis.
Biological Resources		
PI	Invasive, Non-native Species	See Section 3.3.1 for analysis.
PI	Migratory Birds	See Section 3.3.2 for analysis.
PI	Special Status Animal Species	See Section 3.3.3 for analysis.
NP	Special Status Plant Species	There are no federally listed threatened, endangered, or BLM sensitive plant species populations identified within these allotments. There is potential habitat for the Ute Ladies'-tresses *(Spiranthes diluvialis)* along the Yampa River. The closest population of Ute Ladies'-tresses in Moffat County is located in Dinosaur National

Determination[1]	Resource	Resource Issue/Rationale for Determination
		Monument. Since this population is over 45 miles away, this species was dropped for further consideration in the Biological Assessment for the Duffy Mountain and Lower Boxelder Gulch Permit Renewal dated May 24, 2011. A letter of concurrence was received from the U.S. Fish and Wildlife Service on July 6, 2011.
PI	Upland Vegetation	See Section 3.3.4 for analysis.
PI	Wetlands and Riparian Zones	See Section 3.3.5 for analysis.
PI	Wildlife, Aquatic	See Section 3.3.6 for analysis.
PI	Wildlife, Terrestrial	See Section 3.3.7 for analysis.
NP	Wild Horses	There are no Herd Management Areas within close proximity that would be impacted by any of the alternatives.
Heritage Resources and the Human Environment		
PI	Cultural Resources	See Section 3.4.1 for analysis.
NI	Environmental Justice	According to Census 2012, the only minority population of note in the impact area is the Hispanic community of Moffat County. Hispanic or Latino represented 14.2% of the population, considerably less the Colorado state figure for the same group, 21.0%. Blacks, American Indians, Asians and Pacific Islanders each accounted for around 1% of the population, below the comparable state figure in all cases. The census counted 12% of the Moffat County population as living in families with incomes below the poverty line, compared to 12.9% for the entire state. Both minority and low income populations are dispersed throughout the county therefore no minority or low income populations would suffer disproportionately high and adverse effects as a result of any of the alternatives.
NP	Hazardous or Solid Wastes	There are no known Hazardous or Solid Waste issues within the allotments under the Proposed Action.
NI	Lands with Wilderness Characteristics	Subject to WO-IM 2011-154 and in accordance with BLM policy, some of the proposed project areas fall within areas greater than 5,000 acres which may be suitable as lands with wilderness characteristics. The proposed action may impact but not impair wilderness characteristics; however, grazing activities are appropriate and consistent with applicable requirements of law and other resource management considerations.
PI	Native American Religious Concerns	See Section 3.4.2 for analysis.
NI	Paleontological Resources	There would be no impact to paleontological resources from any of the alternatives. The Standard Paleontological Discovery Stipulations apply.
NI	Social and Economic Conditions	See Section 3.4.4 for analysis.
NI	Visual Resources	There would be minimal impact to visual resources from any alternative. Any visual impacts would be to vegetation cover by congregation of livestock resulting in possible trampling or overgrazing, especially around watering holes, which would create a visual scar. The proposed project is located in a VRM Class III area where moderate change to the characteristic landscape would be

Determination[1]	Resource	Resource Issue/Rationale for Determination
		allowed as long as the existing characteristics of the landscape are partially retained.
Resource Uses		
NI	Access and Transportation	There would be minimal impact to Access and Transportation. Conflicts between livestock grazing activities and recreational uses of public lands are common and sometimes require mitigation. Typical conflicts include: impacts to recreational trails and other infrastructure, misuse by the public and permittees on and around 'authorized use only' roads intended for restricted access to range improvements or other infrastructure, gates left open by the public, negative encounters with livestock protection dogs, etc.
NI	Fire Management	There would be no adverse impact from any alternative.
NP	Forest Management	There are no forest resources that would be impacted by any of the alternatives.
PI	Livestock Operations	See Section 3.5.1 for analysis.
NI	Prime and Unique Farmlands	There are federal lands designated as prime farmland if irrigated and farmland of statewide importance within all allotments. Generally, farmlands of statewide importance include those that are nearly prime farmland and that economically produce high yields of crops when treated and managed according to acceptable farming methods. None of these soils are or would become irrigated or otherwise manipulated so as to create conditions favorable to create prime farmland on public lands within the allotments.
NI	Realty Authorizations, Land Tenure	Realty Authorizations exist within the project areas; however they would not be affected by the Proposed Action or alternatives. There is no land tenure adjustments currently proposed within the project areas.
PI	Recreation	See section 3.5.2 for analysis.
Special Designations		
NP	Areas of Critical Environmental Concern	There are no ACECs that would be impacted by any of the alternatives.
NI	Wild and Scenic Rivers	Yampa River Segment 1 (River Mile 126 to Milk Creek – recreational) and Yampa River Segment 2 (Milk Creek to Duffy Tunnel – scenic) are suitable for inclusion in the National Wild and Scenic River (NWSR). System and cannot be modified, to the extent BLM is authorized under law to control steam impoundments, diversions, or other development.
NP	Wilderness Study Areas	There are no Wilderness Study Areas (WSAs) that would be impacted by any of the alternatives.

[1] NP = Not present in the area impacted by the Proposed Action or Alternatives. NI = Present, but not affected to a degree that detailed analysis is required. PI = Present with potential for impact analyzed in detail in the EA.

3.2 PHYSICAL RESOURCES

3.2.1 Soils

Affected Environment: The tables below describe the major soil groups included within each of the allotments. Several of the allotments are contiguous and soils were grouped together for analysis purposes.

Table 1. Soil Summary for the Lower Boxelder Gulch, South Duffy Mountain, Lower Maudlin Gulch, and Duffy Mountain Allotments (*Major soil groups over 2,500 acres)

Soil Map Unit (MU) & Soil Name (Acres in Allot.)	Map Unit Setting	Description
MU 149 Pinelli loam, 3 to 12% slopes *5,246 acres*	*Elevation:* 6,200 – 7,000 feet *Mean annual precipitation:* 12-14" *Ecological Site:* Clayey Foothills	These bench and alluvial fan soils are well drained with slow permeability and very high runoff potential. Available water capacity is high and the soil profile is typically up to 60" deep, composed mainly of clay loam.
MU 112 Kemmerer-Moyerson complex, 20 to 40% slopes *4,616 acres*	Elevation: 6,000 to 7,000 feet Mean annual precipitation: 11 to 13" Ecological Site: Clayey Slopes	These hillslope soils are well drained with very slow to moderate permeability and medium to very high runoff potential. Available water capacity varies widely and the soil profile is typically up to 26" deep, comprised mostly of clay and silty clay.
Soil Map Unit (MU) & Soil Name (Acres in Allot.)	**Map Unit Setting**	**Description**
MU 77 Forelle loam, 3 to 12% slopes *4,059 acres*	Elevation: 6,200 to 7,200 feet Mean annual precipitation: 11 to 13" Ecological Site: Rolling Loam	These bench soils are well drained with moderate permeability and medium runoff potential. Available water capacity is high and the soil profile is typically 60" deep, composed mostly of loam and clay loam.
MU 197 Torriorthents-Rock outcrop, sandstone complex, 25 to 75% slopes *3,978 acres*	*Elevation:* 6,000 – 11,280 feet *Mean annual precipitation:* 9-16" *Ecological Site:* not given	These backslope soils are well drained with moderate permeability and very high runoff potential. Available water capacity is very low and the soil profile is typically 0-18" deep, composed mostly of channery sandy loam and channery clay loam down to bedrock.
MU 162 Rock River sandy loam, 3 to 12% slopes *2,862 acres*	Elevation: 6,200 to 7,200 feet Mean annual precipitation: 11 to 13" Ecological Site: Rolling Loam	These alluvial fan and hillslope soils are well drained with moderate permeability and medium runoff potential. Available water capacity is moderate and the soil profile is typically up to 60" deep, composed mostly of sandy loam and sandy clay loams.
MU 113 Kemmerer-Yamo complex, 5 to 30% slopes *2,689 acres*	Elevation: 6,100 to 7,200 feet Mean annual precipitation: 11 to 13" Ecological Site: Clayey Slopes/Clayey Foothills	These hillslope soils are well drained with moderate permeability and medium runoff potential. Available water capacity is moderate and the soil profile it typically 26 to 60" deep, comprised mostly of clay and loam.

Table 2. Soil Summary for the Big Bend and East Godiva Allotments

Soil Map Unit (MU) & Soil Name (Acres in Allot.)	Map Unit Setting	Description
MU 163 Rock River sandy loam, 12 to 25% slopes *869 acres*	Elevation: 6,200 to 7,200 feet Mean annual precipitation: 11 to 13” Ecological Site: Rolling Loam	These hillslope soils are well drained with moderate permeability and moderate runoff potential. Available water capacity is moderate and the soil profile is typically up to 60” deep, composed mostly of sandy loam and sandy clay loams.
MU 162 Rock River sandy loam, 3 to 12% slopes *735 acres*	Elevation: 6,200 to 7,200 feet Mean annual precipitation: 11 to 13” Ecological Site: Rolling Loam	These alluvial fan and hillslope soils are well drained with moderate permeability and medium runoff potential. Available water capacity is moderate and the soil profile is typically up to 60” deep, composed mostly of sandy loam and sandy clay loams.

*Major soil groups over 700 acre

Table 3. Soil Summary for the Upper Boxelder Gulch Allotment

Soil Map Unit (MU) & Soil Name (Acres in Allot.)	Map Unit Setting	Description
MU 179 Skyway fine sandy loam, dry, 15 to 75% slopes *1,153 acres*	*Elevation:* 7,000 – 8,500 feet *Mean annual precipitation:* 18-20” *Ecological Site:* Brushy loam	These mountainside soils are well drained with moderately rapid permeability & high runoff potential. Available water capacity is low & the soil profile is typically up to 35” deep, composed mostly of fine sandy loam and gravelly sandy loam down to unweathered bedrock.
MU 197 Torriorthents-Rock outcrop, sandstone complex, 25 to 75% slopes *1,000 acres*	*Elevation:* 6,000 – 11,280 feet *Mean annual precipitation:* 9-16” *Ecological Site:* not given	These backslope soils are well drained with moderate permeability and very high runoff potential. Available water capacity is very low and the soil profile is typically 0-18” deep, composed mostly of channery sandy loam and channery clay loam down to bedrock.
MU 127 Maudlin-Duffymont complex, 3 to 15% slopes, very stony *982 acres*	Elevation: 6,500 to 8,000 feet Mean annual precipitation: 16 to 18” Ecological Site: Mountain Loam/Loamy Breaks	These plateau soils are well to somewhat excessively drained with moderate permeability and high to very high runoff potential. Available water capacity is very low; soil profile rages from 15-34 inches deep, mostly composed of fine sandy loam, extremely stony fine sandy loam, and gravelly fine sandy loam down to weathered bedrock.

*Major soil groups over 900 acres

Table 4. Soil Summary for the Elkhorn Creek Allotment

Soil Map Unit (MU) & Soil Name (Acres in Allot.)	Map Unit Setting	Description
MU 197 Torriorthents-Rock outcrop, sandstone complex, 25 to 75% slopes *1,476 acres*	*Elevation:* 6,000 – 11,280 feet *Mean annual precipitation:* 9-16” *Ecological Site:* not given	These backslope soils are well drained with moderate permeability and very high runoff potential. Available water capacity is very low and the soil profile is typically 0-18” deep, composed mostly of channery sandy loam and channery clay loam down to bedrock.
MU 206 Ustorthents, frigid-Borolls complex, 25 to 75% slopes *627 acres*	*Elevation:* 7,000 – 8,500 feet *Mean annual precipitation:* 16-20” *Ecological Site:* not given	These foot and backslope soils are well drained with moderate to moderately slow permeability and high to very high runoff potential. Available water capacity is low to very low and the soil profile is typically up to 34” deep, composed mostly of loam, very channery sandy loam and cobbly sandy clay loam to bedrock.
MU 135 Morapos loam, 12 to 25% slopes *510 acres*	*Elevation:* 6,400 to 7,600 feet *Mean annual precipitation:* 16 to 18” *Ecological Site:* Mountain Loam	These mountainside soils are well drained with slow permeability and very high runoff potential. Available water capacity is high and the soil profile is typically up to 60” deep, composed of loam and clay loam.

*Major soil groups over 500 acres

Soils within the majority of the allotments are loam based, which are the least susceptible to disturbance and wind/water erosion when frozen or snow covered or when wet or moist (late fall through early spring). Across all alternatives, the proposed grazing periods for sheep fall mostly within this period, reducing the potential impacts to soils. Proposed range of dates for cattle fall mostly during the growing season (spring through late fall), which is not ideal for mitigating the potential for soil impacts during the summer months or during drought unless a healthy and diverse vegetation community is maintained.

Environmental Consequences, Alternative A: Under this alternative, the current grazing system as outlined in the Axial Basin CRMP would continue to be implemented. In this system, a particular rotation is assigned by year and number of days a particular class of livestock can be in a pasture is set; timely consideration of current range conditions are not used to alter the schedule. As mentioned earlier, range conditions in the project area have benefitted under this type of system and trends are likely to continue over the allotments.

However, this alternative also continues to allow supplemental feeding “as necessary” as a Special Term and Condition. General impacts that supplemental feeding and the resulting livestock concentration has to soils and vegetation are described in both Alternative C & B. Under the current grazing management plan, supplemental feeding has become an annual event with little to no reporting from operators on where, when, and how much feed was supplied to livestock or why such regular feeding was necessary.

Environmental Consequences, Alternative B: Under this alternative, there are several propositions that have the potential to reverse improving vegetation and soil trends within the

project area. Adverse impacts to vegetation and therefore soil health and function are likely to be greatest under this alternative for the following reasons:

1. Under Term and Condition 5, the proponent(s) states that "Supplemental feed is approved (assumed: on public lands), as specified in the CRMP document." In addition to the general impacts that supplemental feeding and the resulting livestock concentration in proximity to stack yards/feeding sites have to soils and vegetation, there are no parameters described in this alternative outlining where, when, how much supplemental feeding would occur. Feeding operations, then, could in theory occur on or near sensitive areas/soils, such as in riparian areas, repeatedly at the same location, or during a time of year when soils are least resistant to disturbance. Therefore, it is difficult to anticipate with any specificity what impacts this activity would have on vegetation and soils at a particular site.

2. This alternative provides the ability to substitute cattle (spring/summer use) for sheep (mostly fall/winter use) in four of the allotments – Elkhorn Creek, Lower Boxelder Gulch, Duffy Mountain, and South Duffy Mountain Allotments. Even though the number of AUMs would stay the same, this option, if exercised, would potentially run concurrent with the Earle and Sons cattle operation, effectively doubling the number of cattle AUMs present in an allotment at one time (e.g. Lower Boxelder Gulch Allotment) or result in growing season long grazing (e.g. May through September in the Duffy Mountain allotment). Overutilization is likely under either of these or other potential scenarios and would lead to a decline in vegetation health and therefore have adverse impacts to soil function and health. This option to substitute livestock class and season of use from year to year and not follow the CRMP rotation as outlined if cattle are used would have unknown and unpredictable impacts to the growth and reproduction of grasses and forbs, the condition of which have indirect impacts to soil health/function, and make interpretation of monitoring results very difficult.

3. Despite the proposal to use sheep OR cattle in any of the four aforementioned allotments, Term and Condition 3 states that Kourlis cattle would only use pasture number 3, located in the Lower Boxelder Gulch allotment and that the CRMP grazing rotation would not be followed if Kourlis cattle are grazing within the Axial Basin. If this occurs, not only would there be operator overlap of cattle AUMs within the same allotment at the same time as described above, but it also means that this could, in theory, occur every year if Kourlis were to decide to use cattle to fill the AUMs. Again, overutilization is likely under this scenario and would lead to a decline in vegetation health and therefore have adverse impacts to soil function and health.

4. Finally, this alternative proposes to roughly double the current number of sheep AUMs in Lower Boxelder Gulch Allotment between December and early May from 1,152 to 2,258; no reduction of AUMs is proposed elsewhere in the grazing schedule to compensate for this increase. Even though this use would occur during the winter and early spring when loamy soils are most resilient to disturbance, this type of increase in use and duration is likely to have increasing and lasting adverse impacts to vegetation and soil communities over time, as is already observed within this allotment.

Environmental Consequences, Alternative C: A stated objective of the Axial Basin CRMP was to improve the overall vigor and health and diversity of perennial grasses, forbs and shrub species used for browse, in particular Wyoming big sage. According to the 2004 CRMP Sage Grouse Update, as well as the results of the 2007 land health assessment across project area, these objectives have largely been met (with a few localized exceptions) under the current management strategy. Healthy, perennial vegetative communities are important for building and maintaining healthy soil communities and help to reduce the impacts of a disturbance, such as soil compaction, erosion, the introduction of invasive species, and reduced productivity.

The Axial Basin Livestock Rotation List that is proposed under this alternative seeks to build upon this positive trend in vegetation, which would also have indirect beneficial impacts to soil communities. By employing adaptive management principles, Alternative C affords the greatest flexibility for both classes of livestock by offering more rotation options that are not pre-set by year, but rather considers current range conditions and offers date ranges (rather than a set number of days) a group of livestock can be in a location. It fosters partnership and communication every year to select a rotation schedule for the upcoming grazing season to best meet stated objectives, including those pertaining to vegetation, and most importantly would continue previously established monitoring to guide future management within the Axial Basin.

Supplemental feeding practices on public lands within the Lower Maudlin and Lower Boxelder Gulch allotments would end under this alternative, eliminating the localized concentration of livestock associated with feeding locations that result in overutilization of vegetation, an increase in the potential for invasive species introduction and spread and soil compaction, as is documented within these allotments (See pp.3-8 for best available monitoring data that indicates a decrease in sagebrush cover and an increase in cheatgrass cover with *increasing* proximity to feed stackyards in 3 of 4 monitoring sites, as well as Figure 1 that demonstrates the *potential* to fail meeting several rangeland health standards on over 60% of the two allotments where supplemental feeding does or has historically occurred). Compacted soils reduces water infiltration capacity and increased soil bulk density (less air space between soil particles) and runoff (erosion) potential, all of which impact plant germination, root development, and ability to receive and retain moisture. Ending this practice would, over time, reverse any adverse effects to both vegetation and soils. Removing supplemental feeding would also give a more true indication of what effect permitted livestock number/class is having on the vegetation community, which could be used to adjust the grazing prescription for those areas in the future as part of an adaptive management strategy. Vegetation communities, and therefore soils communities are likely to benefit most under this alternative.

Environmental Consequences, Alternative D: For the Lower Boxelder Gulch, Lower Maudlin Gulch, and South Duffy Mountain Allotments, this alternative restricts via the Feeding Agreement both the number of days (events) and months supplemental feeding could occur and also provides clarity to the circumstances under which this activity could occur. It also spatially limits feeding to an area within 1/10 mile of previously documented feeding sites, which will still act to concentrate impacts to soils, but the impacts will be more localized than under Alternatives A and B. This alternative requires documentation of supplemental feeding events so that adjustments could be made under adaptive management if monitoring indicates operations are causing impacts to soil communities that prevent land health standards from being met.

When combined with the proposed reduction in sheep numbers and the implementation of the improved livestock rotation schedule, this alternative could lead to an overall improvement in soil conditions allotment-wide, including for the Duffy Mountain, Big Bend, and East Godiva allotments, which are meeting the land health assessment for soils but have areas where conditions could be improved.

Environmental Consequences, No Grazing Alternative: Removal of livestock from public lands would lead to decreased hoof compaction of soil surfaces, especially in riparian areas where livestock tend to congregate and particularly during the summer and in steep areas. Over time the lack of compaction, combined with the annual freeze-thaw cycle, may lead to a decrease in soil bulk density and improved soil moisture conditions, which facilitates vegetation germination and root development. Removing livestock would also result in an increase of both plant litter and live vegetative ground cover that would provide more protection from wind and water erosion. Any livestock trails and the resulting erosion would heal over time.

If grazing were to continue on adjacent private or other non-federal lands in the allotment, fences would have to be built by the landowner(s) to prevent trespass onto federally-managed lands. Given the natural tendency of cattle to congregate and trail along fence lines, it is likely that paths and forage depletion would occur along the fences. The resulting decrease in canopy cover would increase the impact of raindrops on the soil surface, while the expected increase in compaction would increase runoff from both rain and snowmelt. These factors would combine to increase the likelihood of both wind and water erosion in the areas adjacent to fences. This may result in blowouts and gullies which could indirectly impact federal lands through deposition or by the eroded area actually spreading onto federal lands.

Environmental Consequences, Cumulative Impacts: Past, present, and reasonably foreseeable actions that affect soils in the Axial Basin and surrounding areas primarily include ranching, some fluid mineral exploration and development, and the infrastructural development necessary to support these two activities. The majority of livestock grazing impacts occur around existing water sources such as streams, springs, troughs, stock ponds, areas providing cover or shade, and along fence lines where livestock tend to trail. The soils within and closely surrounding these areas receive heightened use and may exhibit signs of soil compaction, erosion, and reduced productivity.

Oil and gas activities occur in the basin in a limited amount. However, there has been a recent renewal of interest in the area and development may be on the rise. Most of this activity has occurred to date on private surface lands. Development of subsurface minerals includes the removal of top soil and exposure of subsurface soils. These areas of decreased vegetation and litter cover are generally more susceptible to soil erosion, increased runoff, and infestation by invasive, non-native plant species. Some restoration work has occurred at the pad sites to limit the amount of soil erosion, but bare soil still remains in places. Development on public lands always includes mitigation measures to reduce or eliminate these impacts; however, development on private land may not be as closely monitored or mitigated.

The primary impact to soils from infrastructural development has been disturbance, spread of invasive species, runoff and off-site sedimentation associated with road construction, maintenance, and use. The nature and extent of the impact varies with the type of road, the extent

of use, and the level of maintenance. For example, primitive 4WD roads, and ATV trails are naturally surfaced and rarely used or maintained, making them susceptible to potentially severe gullying and rilling, especially on grades. Naturally surfaced and gravel-surfaced roads also occur in the valley. Although the extent of use and level of maintenance varies, these roads typically are used more often and receive a higher level of maintenance than primitive roads and trails. Because these types of roads are often used for fluid mineral activities, most have engineered designs and appropriately spaced culverts to drain runoff. As a consequence, these roads are far less likely to erode, though runoff and off-site sedimentation still occur.

3.2.2 Water Quality, Surface

Affected Environment: Five of the eight allotments have perennial surface water (streams or rivers), all of which drain directly into the mainstem of the Yampa River. Most perennial waters within Colorado are subject to classification (uses for which they are presently suitable or intended to become suitable) and water quality standards (both numerical and narrative). The following table describes surface water and classifications for all allotments with perennial water:

Stream Segment Description	Classification	Allotment(s)
Yampa River, from a point below the confluence with Elkhead Creek to the confluence with the Green River	Aquatic Life Warm 1 Recreation E Water Supply Agriculture	Duffy Mountain
All tributaries to the Yampa River, from below the confluence with Elkhead Creek to below the confluence with the Little Snake River; includes **Maudlin Gulch** and **Jesse Gulch**	Use Protected Aquatic Life Warm 2 Recreation N Agriculture	Lower Boxelder Gulch Lower Maudlin Gulch
Mainstem of **Milk Creek**, from CR15 to the confluence with the Yampa River	Aquatic Life Warm 1 Recreation P Water Supply Agriculture	Elkhorn Creek
Mainstem of **Temple Gulch** and **Morgan Gulch**, from their sources to their confluences with the Yampa River	Aquatic Life Warm 2 Recreation N Agriculture	Lower Boxelder Gulch Lower Maudlin Gulch
Mainstem of **Boxelder Gulch**, including all tributaries from their sources to their mouths	Use Protected Aquatic Life Warm 2 Recreation P Agriculture	Lower Boxelder Gulch Upper Boxelder Gulch Lower Maudlin Gulch

Classification definitions:
Aquatic Life Warm 1 = Waters that currently are capable of sustaining a wide variety of warm water biota, including sensitive species or could sustain such biota but for correctable water quality conditions.
Aquatic Life Warm 2= Waters that are not capable of sustaining a wide variety of warm water biota, including sensitive species, due to physical habitat, water flows or levels, or uncorrectable water quality conditions that result in substantial impairment of the abundance and diversity of species.
Recreation Class E = Waters used for primary contact (i.e. swimming, rafting, kayaking, tubing) recreation since November 1975.
Recreation Class P = Waters that have the potential to be used for primary contact recreation.
Recreation Class N=Waters not suitable or intended to become suitable for primary contact recreation uses.
Water Supply (domestic) = Waters are suitable or intended to become suitable for potable water supplies. After receiving standard treatment these waters will meet Colorado drinking water regulations.
Agriculture = Waters that are suitable or intended to become suitable for irrigation of crops usually grown in Colorado and which are not hazardous as drinking water for livestock.

Because of their immediate proximity to the Yampa River, or to significant tributaries of the Yampa River, surface runoff from all the allotments would flow into the Yampa River. As of 2013, the Yampa River in this area (from Elkhead Creek to the Green River) is on the Colorado Department of Public Health and Environment's (CDPHE) Section 303(d) list of Impaired Waters because of high priority total recoverable iron impairment (CDPHE 2013). The source of the iron impairment in this area is likely from upstream coal mining practices, the natural environment, or perhaps a combination of both, but is otherwise unrelated to the grazing management practices discussed here. This river segment is also on CDPHE's Monitoring and Evaluation List for a suspected water quality problem regarding sediment load (CDPHE 2013), the source of which is undetermined. There are no water quality impairments or suspected water quality issues for any other surface waters influenced by grazing management considered in the proposed action.

Reference: Colorado Department of Public Health and Environment Water Quality Control Commission. 2013. Regulations #33, 37, and 93. http://www.colorado.gov/cs/Satellite/CDPHE-WQ/CBON/12515968768l1

Environmental Consequences, All Grazing Alternatives: The proposed classes and numbers of livestock as well as the proposed grazing periods within each allotment are more or less similar enough across the alternatives that no measureable change to water quality is likely to occur under any particular alternative, especially since none of the alternatives propose infrastructure or developments that might act to influence how and when livestock access surface waters.

Generally speaking, grazing activities could result in soil compaction and displacement that increase the likelihood of erosional processes, especially on steep slopes and areas devoid of vegetation. Soil detachment and sediment transport are likely to occur during runoff events associated with spring snowmelt and short-duration high intensity thunderstorms. Livestock use of surface water sources can lead to water quality degradation by increasing fecal coliform bacteria levels and can lead to algal blooms that increase water temperatures.

Not all surface waters influenced by proposed grazing activities are currently supporting classified uses. However, permitting livestock grazing activities would have no relatable impact to the identified total recoverable iron impairment. Livestock access from the allotments that are adjacent to the Yampa River (Duffy Mountain, Lower Boxelder Gulch, Lower Maudlin Gulch, Big Bend, East Godiva) could potentially cause a slight increase in sedimentation. Any access livestock have to the river from private lands between the allotments and the Yampa River is outside the permitted actions analyzed here. Permitting livestock grazing in these allotments as proposed is consistent with land uses throughout the watershed and is not likely to result in measurable changes to water quality.

Environmental Consequences, No Grazing Alternative: The potential for direct and indirect impacts to downstream water quality caused by livestock use that aren't severe enough to warrant an impairment or monitoring listing, such as the introduction of fecal bacteria and the trampling, trailing, or overgrazing of vegetation that may lead to increased sediment production, would be eliminated. This alternative has the potential to benefit overall water quality downstream of the allotments.

Environmental Consequences, Cumulative Impacts: Past, present, and reasonably foreseeable actions that affect surface water quality in the Axial Basin and surrounding areas primarily

include ranching, fluid mineral exploration and development, and the infrastructural development necessary to support these two activities.

The Axial Basin watershed drains water primarily to the Yampa River, south and west from the town of Craig, CO. Pollutants that are delivered downstream typically include nitrogen, pathogens, and sediment. The Yampa River through this region is presently listed as impaired by the State of Colorado for total recoverable iron and is on the State's Monitoring and Evaluation list for a suspected sediment problem. Grazing occurs at some level in nearly every portion of the watershed. During snow melt driven high-flow events that occur in the late spring sediment is delivered to the Yampa River from its numerous perennial tributaries. This sediment flush is a natural occurrence; the amount of sediment occurring above background levels as a result of grazing across the watershed is not known.

The effect to water quality due to fluid mineral and infrastructural development is primarily sedimentation, a result of the construction and maintenance of roads and pads adjacent to riparian areas in the watershed. The portion of sediment that is delivered to the Yampa River as a direct consequence of these improvements is not known, but is likely to occur during the spring high flow period coincident with the natural sediment discharge peak as well as summer storm events.

Treatment of invasive species within riparian corridors for any of the above land uses would have likely introduced chemicals into streams, but in small amounts relative to the watershed, and dilution and dispersal in these effects may not be detectable in water that is discharged to the Yampa River.

3.3 BIOLOGICAL RESOURCES

3.3.1 Invasive/Non-Native Species

Affected Environment: Invasive plant species and noxious weeds occur within the affected areas. Hoary cress (white top), downy brome (cheatgrass), Canada thistle, musk thistle, scotch thistle, perennial pepperweed, salt cedar and knapweeds occur within or near these areas. Other species of noxious weeds could be introduced by vehicle traffic, livestock, wildlife and other means of dispersal.

Trend plot data shows a general increase of downy brome in monitoring areas near stackyard facilities and feeding areas over the past ~8 years. Weedy annuals like downy brome outcompete native grassland species. This noxious weed spreads rapidly, degrading the environment and affecting soil moisture, groundwater supplies, native fish, wildlife, and plant communities. Cheatgrass dominated landscapes have more frequent wildfires, further degrading rangelands and reducing wildlife populations.

The area of analysis is also included in a weed management area that has been active since about 1993 working to control the infestation of hoary cress and reduce the spread of this noxious weed. Several private and public entities participate in this longstanding partnership including BLM, Colowyo Coal Company, Colorado Parks and Wildlife and multiple private landowners/permittees. The current annual scope of treatment includes about 1,000 acres of

ground and aerial herbicide treatment. The number of acres treated annually is dependent upon available budget. Acres of infestation within the Axial Basin area exceeds the annual funding available. Multiple approaches and techniques have been used over the years changing with resource priorities and available chemicals. A complete mapped inventory of the area has not been completed. The presence of hoary cress is still high throughout the basin but targeted treatment areas show success. Principals of Integrated Pest Management (IPM) are employed to control noxious weeds on BLM lands in the Little Snake Field Office (LSFO).

Environmental Consequences, Alternatives A, B, C, D: Access to public lands for dispersed recreation, hunting, livestock grazing management, livestock and wildlife movement, as well as wind and water, can cause weeds to spread. Surface disturbance from livestock concentration and human activities associated with grazing operations can increase weed presence. Maintaining healthy native vegetation communities through livestock grazing management contributes to reducing the spread or establishment of weed infestations. A concern in the allotments would be for new noxious weed infestations to establish and not be detected. Once a new infestation is detected it can be targeted for control with various IPM techniques. Land practices and land uses by the livestock operator and their weed control awareness would largely determine the identification of potential new weed infestations within the allotment.

Environmental Consequences Alternative A, B, D: Each of these alternatives include the use of supplemental feeding on public land. If certified weed free hay is not used, the potential for introducing new invasive species increases as well as the potential for establishing infestations at new locations. Supplemental feeding areas would be considered livestock concentration areas. Livestock concentration areas and human activities associated with grazing operations increase weed presence and introduction. In consideration of the total area of the allotments included in these livestock concentration areas (~61%), the risk of weed infestation across the allotments is a considerably higher impact under these alternatives. Invasive species such as downy brome and white top have adapted to take advantage of disturbed areas such as livestock concentration areas. These weeds utilize soil moisture late in the spring and are able to outcompete desirable native vegetation early in the growing season before perennials begin to grow in early summer. Maintaining healthy native vegetation communities through livestock grazing management contributes to reducing the spread or establishment of weed infestations.

Environmental Consequences, No Grazing Alternative: This alternative removes the spread and introduction of weeds by livestock. Additional sources of seed dispersal would still be present throughout the allotments. The existing infestations would continue to be present and likely treated but without the monetary support or participation of grazing permittees. Under this alternative there would be no presence by the grazing permittees to assist with detection of new infestations.

Environmental Consequences, Cumulative Impacts: 36,968 BLM acres are included within these grazing allotments which could potentially be affected by invasive species. Existing weed infestations within these areas would lead to continued weed presence under all alternatives.

3.3.2 Migratory Birds

Affected Environment: Migratory bird habitats on the eight allotments are comprised primarily of sagebrush stands, oakbrush/mixed mountain shrublands with small areas of pinyon-juniper (PJ) woodlands. Aspen woodlands can be found in higher elevations. A variety of migratory birds may utilize these vegetation communities during the nesting period (May through July) or during spring and fall migrations. The allotments provide potential habitat for several species on the United States Fish & Wildlife Service (USFWS) Birds of Conservation Concern (BCC) List. Those species associated with the Southern Rockies/Colorado Plateau and Northern Rockies regions and the allotments are presented by habitat affiliation below.

BCC species associated with shrubland habitats in the LSFO include Brewer's sparrow, sage sparrow, sage thrasher and loggerhead shrike. All four birds are summer residents in Colorado and all but the loggerhead shrike nest in sagebrush stands. Nests can be constructed in sagebrush or other shrubs, with some species nesting under shrubs. Shrikes nest in trees in shrubland habitats. All species would likely be nesting in the general area from mid-May through mid-July. Sagebrush is present on all of the parcels and may provide potential habitat for these species. Areas where small trees are encroaching into sagebrush may provide potential habitat for shrikes.

BCC species associated with PJ woodlands include pinyon jay and juniper titmouse. Pinyon jays are loosely colonial nesters and can be found in most PJ woodlands within the LSFO. Juniper titmouse's are cavity nesters, and also utilize most of the PJ woodlands within the field office. Both species can be found within Colorado year-round.

BCC species that may utilize aspen stands include Cassin's finch and flammulated owl. Cassin's finches are a year round resident of Colorado. This species nests in higher elevation forests and move to lower elevations for the winter. Flammulated owls nest in tree cavities and inhabit higher elevation aspen and conifer forests during the summer months.

Raptor species are tied to several different habitat types with in the LSFO. Sagebrush and other shrublands provide open spaces for hunting, while rocky outcrops, woodlands, sporadic trees and cottonwood forests provide nesting substrates. Red-tailed hawk, golden eagle and bald eagle likely nest and hunt near several of the allotments.

More generally, birds associated with these allotments are well distributed in extensive suitable habitats throughout the LSFO and northwest Colorado and habitat-specific bird assemblages appear to be composed and distributed appropriately to the normal range of habitat variability.

Environmental Consequences, Alternatives A, B, C & D: While livestock grazing can directly impact reproductive success of migratory songbirds by trampling of nests, it is more likely that it indirectly influences reproductive success due to changes in vegetation such as species composition, height or cover. The CRMP implemented a deferred rotational grazing system that has proved beneficial to upland vegetation and migratory bird habitats by reducing utilization on shrubs and grasses within the Lower Boxelder Gulch and Lower Maudlin Gulch allotments. However, even with improvements, utilization levels on shrubs remain over objectives in some areas, mainly in close proximity to stackyards. Alternatives A and B would continue to allow

winter sheep feeding. In addition, Alternative B increases sheep use on the Lower Boxelder Gulch and Lower Maudlin Gulch Allotments and allows grazing by sheep or cattle. Continued winter feeding and increasing either sheep or cattle use on the allotments would degrade habitat for migratory bird species that rely on denser stands of sagebrush for nesting. Alternative C would implement a similar type of grazing system and would also eliminate winter feeding and reduce winter sheep use on the Lower Boxelder Gulch and Lower Maudlin Gulch Allotments. This would be beneficial to upland habitats and would maintain or improve migratory bird habitats across the allotments by continuing to reduce utilization on shrub species. Alternative D would also permit winter feeding, however, the quantity and duration of winter feeding would be reduced under this alternative. Feeding would only occur within 1/10 mile of the existing stackyard. Utilization on shrubs would be expected to remain high in these areas, however, this would impact a much smaller area than in Alternatives A and B.

Current conditions would continue under Alternative A for the other six allotments. Reduction of AUMs and adjustments to season of use on the Big Bend and East Godiva Allotments described under Alternatives C and D would likely improve upland habitat conditions and improve habitat for migratory birds. Alternative B would likely result in detrimental impacts to grasses and forbs due to a potential increase in cattle AUMs and an extended grazing period.

Environmental Consequences, No Grazing Alternative: This alternative may lead to increases/improvements in vertical structure, composition and density of herbaceous understory on all eight allotments from current conditions. Benefits associated with livestock removal would be most expected in those areas that currently experience concentrated livestock use (such as water sources or sheep feeding areas). Response by migratory birds to vegetative changes would depend on the species, likely providing the greatest benefit to ground and low shrub nesters.

Cumulative Impacts, All Alternatives: The primary use of the allotments and the surrounding area is livestock grazing, recreation (hunting), and surface coal mining. Continuation of grazing would not be expected to add substantially to existing or proposed disturbances.

3.3.3 Special Status Animal Species

Affected Environment: The Lower Boxelder Gulch and Duffy Mountain Allotments provide habitat for the Colorado pikeminnow. This species is listed as endangered under the Endangered Species Act (ESA) and the Yampa River is mapped as Designated Critical Habitat (DCH). There are no ESA listed or proposed species that inhabit or derive important benefit from habitats from the other six allotments.

All allotments provide important habitat for greater sage-grouse, a BLM sensitive species and a candidate for Endangered Species Act (ESA) listing. In 2012 Colorado Parks and Wildlife updated greater sage-grouse mapping data to include Preliminary Priority Habitat (PPH) and Preliminary General Habitat (PGH). Areas that have been identified as having the highest conservation value to maintaining sustainable greater sage-grouse populations were mapped as PPH. Sage-grouse occupied habitats outside of PPH were mapped as PGH. The majority of the eight allotments are mapped as PPH, with the exception of Duffy Mountain and Upper Boxelder

Gulch, which are about half PPH and half PGH. The Elkhorn Creek allotment is primarily PGH, with a small amount of PPH.

The general area of Axial Basin provides very important and productive habitat for greater sage-grouse. CPW data from 2013 documents 13 active leks and 5 inactive leks within the boundaries of the allotments. High male counts in 2013 were at 171 males with a three year average of 159 males. All active leks are located in the Lower Maudlin Gulch and Lower Boxelder Gulch Allotments. There is one inactive lek located in the Duffy Mountain Allotment and one within the Upper Boxelder Gulch Allotment. The majority of the allotments provide nesting habitat for sage-grouse, due to the proximity of leks in the area. The Lower Maudlin Gulch, Lower Boxelder Gulch and S Duffy Mountain Allotments provide valuable brood rearing habitat. All of the allotments provide winter habitat for grouse except for the Duffy Mountain Allotment.

Reproductive functions (breeding, nesting and brood-rearing) are considered the most important grazing impact related aspect of sage-grouse biology. Lekking would likely take place in the general area from late March through early May with most nesting occurring mid-April through mid-June. In general, broods would appear from late May to early June.

The allotments also provide habitat for three additional BLM sensitive species, bald eagles, Columbian sharp-tailed grouse and Brewer's sparrow. There are no bald eagle nests located within any of the allotments. There are several bald eagle winter roost sites located along the Yampa River and all allotments provide winter habitat for this species. In general, bald eagles would utilize the allotments during the winter months when opportunistically feeding on winter killed big game species.

Sagebrush stands and mixed mountain shrublands in the LSFO provide habitat for Columbian sharp-tailed grouse. The Lower Maudlin Gulch, Lower Boxelder Gulch and South Duffy Mountain Allotments are mapped as 'overall' habitat for sharp-tailed grouse. The Upper Boxelder Gulch and Elkhorn Creek Allotments provide nesting and winter habitat for this species. There are no sharp-tail grouse leks located within the boundaries of any of the allotments.

Brewer's sparrows are a summer resident in Colorado and nest in sagebrush stands. Nests are constructed in sagebrush and other shrubs in denser patches of shrubs. This species would likely be nesting in the Proposed Action area from mid-May through mid-July.

Environmental Consequences:

Greater sage-grouse

Impacts Common to Alternatives A, B, C & D: Season of livestock use coincides with sage-grouse nesting and breeding on most of the allotments. Grazing during the nesting season has the potential to result in trampling of nests or disturbance of nesting females. This impact would be more pronounced during movements of large groups of livestock. Trailing can also disrupt displaying males during the lekking season if sheep are trailed early in the morning in the vicinity of leks or camps and/or bedding areas are located near leks.

Livestock grazing can also influence grouse indirectly by altering habitat components, primarily herbaceous and sagebrush cover. Both residual and new growth herbaceous cover are important for sage-grouse nest concealment. Under all four alternatives, the Lower Boxelder Gulch and Lower Maudlin Gulch Allotments would retain a grazing system similar to the system outlined in the CRMP. The CRMP implemented a deferred rotational grazing system that has improved vegetative conditions by decreasing utilization on the two allotments. However, monitoring data shows utilization at or exceeding the allowable 40% on shrubs in several areas within a one mile radius of stackyards. This is likely due to winter sheep feeding. Sheep have been fed hay in Axial Basin during the winter for many years, however, this action and the impacts on wildlife species have never been analyzed in a NEPA document. Winter feeding can be used as a way to reduce sagebrush cover as sheep congregate in one area for extended periods, impacting sagebrush with heavy utilization and trampling. This type of treatment can benefit older, decedent stands and open up canopy cover. However, this type of canopy reduction must be carefully managed to avoid reducing sagebrush cover to a point that it no longer provides suitable habitat for greater sage-grouse. In addition, congregation of livestock can lead to soil compaction and may increase weedy species. Since both allotments provide important nesting and brood-rearing habitat for sage-grouse, it is important to keep sagebrush cover at a level suitable for nest and young concealment. Over utilization also produces column-like sagebrush which does not provide as much cover for nesting sage-grouse. If winter feeding continues, sagebrush cover in close proximity to stackyards would continue to be reduced, and in turn may not provide suitable nesting habitat for sage-grouse. (See pp.3-8 for monitoring data that indicates a decrease in sagebrush cover and an increase in cheatgrass cover with increasing proximity to feed stackyards in 3 of 4 monitoring sites, as well as Figure 1 that demonstrates the potential to fail meeting several rangeland health standards on over 60% of the two allotments where supplemental feeding does or has historically occurred.)

Before conducting any sagebrush treatments, it must be determined that the area is currently not meeting objectives for sage-grouse and then, monitoring must occur after the treatment to ensure objectives have been met. Since pre and post treatment monitoring haven't been conducted, it is difficult to know the extent of sagebrush cover reduction or if the areas used for feeding are meeting sage-grouse objectives.

On the Big Bend and the East Godiva Allotments Alternatives B, C and D would improve habitat for greater sage-grouse. These alternatives would reduce AUMs on both allotments by 25%. The season of use for the Big Bend Allotment would change from spring and fall, to primarily spring. Both of these allotments can be used during the fall, but only if no spring grazing occurs. Cattle would be permitted on the allotments for such a short time, there would be ample opportunity for re-growth after grazing has occurred. If grazing occurred in the fall on either allotment, the area would be rested from grazing during the entire growing season. The reduction in grazing and one season of use on each allotment should improve vegetation conditions and would be beneficial for grouse nesting in the area.

Alternative A: Under this alternative, the current grazing system as outlined in the Axial Basin CRMP would continue to be implemented. The CRMP implemented a deferred rotational grazing system that has proved beneficial to upland vegetation by reducing utilization on shrubs and grasses within the Lower Boxelder Gulch and Lower Maudlin Gulch allotments. However, even with improvements, utilization levels on shrubs remain over objectives in some areas,

mainly in close proximity to stackyards. This alternative also continues to allow supplemental feeding "as necessary." Impacts from supplemental feeding and the resulting livestock concentration are described above.

Alternative B: Alternative B would have the greatest impacts to greater sage-grouse and their habitat when compared to the other alternatives. Alternative B continues winter feeding and increases the AUMs in the Lower Boxelder Gulch Allotment from 1,152 to 2,258 for winter sheep use. An increase in winter sheep use would increase browsing on sagebrush and would likely exceed the 40% utilization cap within this allotment. Alternative B would also allow winter sheep use or spring and fall cattle use on the Lower Boxelder Gulch Allotment. Since the allotment is already grazed by cattle in the spring, adding another 1,153 AUMs of cattle grazing would increase pressure on the herbaceous component and reduce cover important for nesting sage-grouse. Overall, increases in AUMs, winter feeding and an increase in cattle AUMs would likely degrade sage-grouse habitat within the two allotments.

Alternative C: Alternative C would implement a deferred – rotational grazing plan on the Lower Boxelder and the Lower Maudlin Gulch Allotments Monitoring in key areas has shown that utilization on grasses has been reduced on both allotments and utilization on browse species has been substantially reduced (with exception of areas near stackyards) over the past 20 years. Alternative C would maintain this trend in utilization by permitting sheep on the allotments for five months from the first of December to the beginning of May and permitting cattle on the allotments for sixty days from the beginning of May through the end of June. Cattle are also permitted on the allotments again in the fall, but in general, the allotments are used as transitional range during the fall as cattle move from summer allotments back to private land for the winter. The management strategy uses a four pasture rotation during the above mentioned dates with one pasture deferred each year. This may or may not be the same pasture for both classes of livestock, depending on the schedule selected each year. This is an appropriate livestock management action for restoring, enhancing and maintaining native vegetation. Alternative C would prevent concentrated utilization of sagebrush on the two allotments by eliminating winter sheep feeding. If it is determined by BLM that sagebrush canopy cover needs to be reduced to meet sage-grouse objectives in specific areas, site specific NEPA describing the details of the treatment would be completed at the project level.

Alternative D: Alternative D would be similar to alternative A except impacts from winter feeding would be concentrated in smaller areas.

Colorado pikeminnow

Comparison of Alternatives A, B, C & D: Improperly managed livestock grazing could potentially impact DCH by disturbing, removing or altering riparian vegetation and disturbing soils. Vegetation alteration or removal may decrease: cover, soil stability, forage base and nutrient levels and may impair stream morphology, water quality and water temperature. Concentrated livestock use could potentially cause physical damage to limited and important micro-habitats, such as backwaters. Livestock trampling could impair or reduce the usability of backwaters by changing egress/ingress or water flow patterns. These impacts could occur with improperly managed riparian grazing. However, properly managed grazing would not be expected to degrade or impair riparian systems.

Livestock grazing, as described in the four alternatives, would have minimal impacts to Colorado pikeminnow and DCH. Since access to the Yampa River by grazing livestock is limited and livestock would only have access to the river for a short period of time each year, the above mentioned impacts would be isolated and limited. It would be unlikely that grazing would permanently alter the physical characteristics of habitat to the point that usability is reduced or compromised. High spring flows of sufficient size would help to reform and shape backwaters on a regular basis. Information from Proper Functioning Condition (PFC) assessments indicated that the reaches of the Yampa River that border the allotments are in good condition under the current grazing system. These riparian conditions would be expected to continue under all four alternatives. Overall, it is expected that the proposed grazing regime is compatible with maintaining important characteristics of Colorado pikeminnow habitat. Informal Section 7 consultation was completed with the USFWS regarding grazing on the two allotments. A "may affect, not likely to adversely affect" determination was found and USFWS conferred with this finding.

Bald eagle

Comparison of Alternatives A, B, C & D: No bald eagle nests are located within the allotments, however, this species likely hunt in upland habitats in the general area and uses winter roost sites along the Yampa River. During the winter, bald eagles are likely present within the allotments, feeding on road or winter killed big game. Impacts to bald eagles would be similar to those described in the Migratory Bird section of this EA.

Columbian sharp-tailed grouse

Comparison of Alternatives A, B, C &D: Impact to Columbian sharp-tailed grouse and their habitat would be analogous to impacts described above for greater sage-grouse.

Brewer's sparrow

Comparison of Alternatives A, B, C & D: Grazing can directly impact Brewer's sparrows by trampling nests, or indirectly affect this species by changing components of habitat. Grazing may cause an increase in weed infestations, primarily cheatgrass, which would degrade sparrow habitat. Additionally, the presence of livestock, can increase the abundance of brownheaded cowbirds, increasing the chance for nest parasitism by this species. Grazing systems that promote healthy sagebrush communities should be compatible with maintaining Brewer's sparrow habitat. For a comparison of alternatives and impacts to migratory bird habitat, including Brewer's sparrow, see the Migratory Bird section of this EA.

Environmental Consequences, No Grazing Alternative (all species): This alternative would lead to increases/improvements in vertical structure, composition and density of herbaceous understory on the allotments as a whole from current conditions. Benefits associated with livestock removal would be most expected in those areas that currently experience concentrated livestock use (such as water sources and feeding areas). Improvements in herbaceous understory (height and density) would enhance nesting conditions for greater sage-grouse throughout the allotments as a whole.

Environmental Consequences, Cumulative Impacts (all species): The primary use of the allotments and the surrounding area is livestock grazing, recreation (hunting) and surface coal mining. Continuation of grazing would not be expected to add substantially to existing or proposed disturbances, under the Proposed Action. Alternatives A or B may lead to degradation of sage-grouse habitats if winter feeding continues on two of the allotments.

3.3.4 Upland Vegetation

Affected Environment: Dominant vegetation communities within all allotments are sagebrush grassland communities with scattered areas of salt desert shrub communities, and mountain shrub communities. Although vegetation in the allotments shows an overall upward trend under past management since the implementation of the CRMP, new concerns have been raised specifically concerning the condition of the sagebrush community and habitat for sage grouse and winter habitat for big game. Many of these current concerns have a relationship to the purpose and history of authorized feeding, and the scope and scale that current feeding practices have evolved to.

Environmental Consequences, Alternative A: For all allotments current conditions would continue. The continuation of feeding hay and existence of stackyards would have an adverse impact to upland vegetative resources in the Lower Boxelder Gulch and Lower Maudlin Gulch Allotments. Monitoring data shows while there is an overall upward trend in both allotments utilization and vegetation cover is being exceeded or impacted in relation to proximity to stackyards. Utilization measurements demonstrate that the 40% maximum utilization for browse species is only consistently met at approximate 1 mile distance away from stackyards, and that the highest browse utilization is occurring within 0.6 miles from stackyards. Trend studies show vegetative cover for both grasses and forbs have increased between 2005 and 2010 at all four locations within 1.5 miles of stackyards, however, in three out of four locations browse cover has decreased and annual grass cover (cheatgrass) has increased within 1.5 miles of stackyards.

Since feeding locations, duration, and quantity of hay fed is not reported or enforced by the BLM as required in the 1986 Feeding Agreement and Authorization, anecdotal evidence and knowledge of range management would support the assumption that the feeding of sheep would occur closer rather than farther from stackyards. Therefore the impacts outlined in the paragraph above would be attributed to the winter feeding of sheep. With ~ 61% of the acreage in both allotments being within one mile of a stackyard the potential for long term adverse impact is considerable.

Environmental Consequences, Alternative B: Under this alternative Kourlis Ranch could potentially graze cattle instead of sheep. This would double the spring and fall cattle use for the Lower Boxelder Gulch Allotment and create a longer season of cattle grazing on the Duffy Mountain Allotment because Leon Earle & Sons are authorized to graze cattle on both these allotments as well. This change would result in detrimental impacts to upland vegetation by concentration of cattle use (eliminating any deferment or rotation for the Lower Boxelder Gulch pasture 3) and a longer season of cattle grazing on Duffy Mtn. Allotment. These two allotments have not been managed in this fashion since prior to the implementation of the CRMP.

The continuation of feeding hay and existence of stackyards would have an adverse impact to upland vegetative resources in the Lower Boxelder Gulch and Lower Maudlin Gulch Allotments. Monitoring data shows while there is an overall upward trend in both allotments, utilization and vegetation cover is being exceeded or impacted in relation to proximity to stackyards. Utilization measurements demonstrate that the 40% maximum utilization for browse species is only consistently met at approximate 1 mile distance away from stackyards, and that the highest browse utilization is occurring within 0.6 miles from stackyards. Trend studies show vegetative cover for both grasses and forbs have increased between 2005 and 2010 at all four locations within 1.5 miles of stackyards, however, in three out of four locations browse cover has decreased and annual grass cover (cheatgrass) has increased within 1.5 miles of stackyards.

Since feeding locations, duration, and quantity of hay fed is not reported or enforced by the BLM as required in the 1986 Feeding Agreement and Authorization, anecdotal evidence and knowledge of range management would support the assumption that the feeding of sheep would occur closer rather than farther from stackyards. Therefore the impacts outlined in the paragraph above would be attributed to the winter feeding of sheep. With ~ 61% of the acreage in both allotments being within one mile of a stackyard the potential for long term adverse impact is considerable, based on the rationale that although this practice has occurred to some extent for over 50 years. The stackyard locations and storage of hay on public lands increased after the implementation of the CRMP. The proposed increase in sheep AUMs and numbers in this alternative would exacerbate adverse impacts.

The East Godiva and Big Bend Allotments would benefit with decreased vegetation use in both spring and fall resulting from the adjustments made to address Land Health Standards. All other allotments, current conditions would continue with no upland vegetation resource concerns.

Environmental Consequences, Alternative C: The CRMP implemented a deferred rotational grazing system that has proven to be beneficial to upland vegetation in the Lower Boxelder Gulch, Lower Maudlin Gulch, and Duffy Mountain Allotments. All four grazing alternatives propose the same or similar type of grazing system that would continue this trend, unless deviations from the CRMP were executed such as elimination of the deferred rotation with cattle use rather than sheep as proposed in Alternative B, which would have adverse impacts in pasture three in the Lower Boxelder Gulch Allotment. However, long term drought has contributed to a regional large scale decline in range quality, and combined with utilization of domestic and wild ungulates, noxious weeds, and increasing resolve to manage sagebrush communities for the benefit of greater sage-grouse requires renewed consideration of long term habitat and forage conditions. With the change in percent public land on the Lower Boxelder Allotment and subsequent reduction of sheep numbers, combined with the greater flexibility for livestock grazing, in addition to the elimination of the annual winter feeding of sheep Alternative C would provide the greater potential for continued upward trend in upland vegetation and sagebrush habitat improvement and management. The East Godiva and Big Bend Allotments would benefit from the adjustments made to address Land Health Standards. All other allotments, current conditions would continue with no upland vegetation resource concerns.

Environmental Consequences, Alternative D: For the Lower Boxelder Gulch and Lower Maudlin Gulch Allotments, this alternative provides the opportunity to supplement livestock nutrition when climatic conditions may reduce forage availability. With the change in percent

public land on the Lower Boxelder Allotment and subsequent reduction of sheep numbers and the reduction on the season that supplements could be fed. Which would reduce the quantity and duration of feeding, in accordance with the proposed feeding agreement and authorization, combined with the greater flexibility for livestock grazing with the proposed livestock rotation list. Alternative D would provide an improved potential for continued upward trend in upland vegetation and sagebrush habitat improvement and management compared to Alternatives A & B. This alternative provides for tracking of supplemental feeding logistics so that potential adjustments could be better addressed under adaptive management. The East Godiva and Big Bend Allotments would benefit from the adjustments made to address Land Health Standards. All other allotments, current conditions would continue with no upland vegetation resource concerns.

Environmental Consequences, No Grazing Alternative: All herbivory from domestic livestock would cease under this alternative. However, the likelihood of the landowners simply fencing off the isolated private parcels in the allotments so that the private lands grazing could continue to be utilized would be high. The result would be overall higher utilization of the public parcels by mule deer, pronghorn, and elk. While this, in general, would not lead to unacceptable levels of utilization within the plant community, greater distribution of both wild and domestic utilization would be preferred. Under this alternative, on the ground management and management priority would decrease resulting in native vegetation having less potential for restoration, enhancement, and maintenance as treatments to improve vegetation resources would be more likely focused on areas with additional permitted public land uses and need.

Environmental Consequences, Cumulative Impacts: The various upland plant communities on these allotments have been affected and influenced by a variety of natural and artificial influences over the years.

BLM records indicate that the lands within the allotments have been grazed by livestock, since the 1930's though it is likely that livestock have grazed these lands longer. Additional herbivory by elk, mule deer, and pronghorn antelope occurred prior to human settlement and will continue to do so alongside domestic livestock.

With the potential for future sage grouse specific management, multiple uses of public lands must be taken into consideration and appropriate adjustments made so that all uses may continue into the future with minimal impacts.

Even if the No Grazing Alternative were to be chosen future use on adjacent private lands would likely continue to include livestock grazing as a primary use in addition to energy development, recreational use and farming. When added to the existing activities, approval of any alternative that continued grazing would not cause undue cumulative damage to upland vegetation.

3.3.5 Wetlands and Riparian Zones

Affected Environment: Known riparian resources on public lands within the allotments and their condition are described in the tables below. No riparian resources (lotic or lentic) have been identified on public lands in the Big Bend, East Godiva, and South Duffy Mountain allotments.

Lower Boxelder Gulch Allotment (#04431)

Condition Assessment	Wetlands/Springs (acres)	Streams (miles)
Proper Functioning Condition		Boxelder Gulch Reach 3: 2.6 Morgan Gulch Reach 2: 1.6 Morgan Gulch Reach 3: 2.0 Morgan Gulch Reach 4: 1.2
Functioning At Risk – condition improving		Morgan Gulch Reach 1: 0.2
Functioning At Risk – no trend in condition		Maudlin Gulch Reach 2: 1.6 Maudlin Gulch Reach 3: 2.9 Boxelder Gulch Reach 2: 0.9 Boxelder Gulch Reach 4: 0.8 (1994)
Functioning At Risk – condition declining		Boxelder Gulch Reach 1: 0.5
Not Assessed	0.1	
TOTAL	**0.1 acres**	**14.3 miles**

Assessments for reaches of Boxelder, Morgan, and Maudlin Gulches within this allotment were completed in 2001 unless otherwise noted.

Boxelder Gulch Reach 1: Conditions thought to be declining for reasons other than livestock management; livestock use not noted.
Boxelder Gulch Reaches 2 & 3: Livestock (cattle) use described as moderate; evidence of hoof action and grazing noted, however livestock management not identified as an issue. Riparian habitat trend is described as "stable" and management potential is moderate.
Boxelder Gulch Reach 4 & Maudlin Gulch Reach 2: Assessed in 1994 using an older riparian assessment tool (Level II riparian inventory form). Some livestock use (trampling) and low vegetation utilization noted.
Morgan Gulch Reach 1: Livestock (cattle) use described as minimal; evidence of hoof action and grazing noted, however livestock management not identified as an issue. Riparian habitat trend is described as "up" and management potential is fair.
Morgan Gulch Reach 2: Livestock (cattle) use described as moderate; evidence of hoof action and grazing noted, however livestock management not identified as an issue. Riparian habitat trend is described as "up/stable" and management potential is fair.
Morgan Gulch Reaches 3 & 4; Maudlin Gulch Reach 3: No notes on livestock use available. Morgan Gulch Reach 4 assessed in 1999.

Duffy Mountain Allotment (#04432)

Condition Assessment	Wetlands/Springs (acres)	Streams (miles)
Proper Functioning Condition	NA	Yampa River Reach 17: 3.8 Yampa River Reach 18: 5.4 Yampa River Reach 19: 4.4
Functioning At Risk – no trend in condition	NA	Yampa River Reach 20: 0.6
Not Assessed	BLM Spring #087-03: 0.1 BLM Spring #087-17: 0.1	
TOTAL	**0.2 acres**	**14.2 miles**

Assessments for reaches of the Yampa River within this allotment were completed in 2010. No livestock issues noted for reaches 17 and 18. Livestock use was evident in reach 19, but no bankside degradation was noted because cobbles armor the bank here. Most of this reach on river left is inaccessible to livestock due to steep topography. In reach 20, most of the vegetation along the river was heavily grazed or hedged by livestock. It was noted that upland water sources were dry then, which may have caused livestock to concentrate along the river here.

Lower Maudlin Gulch Allotment (#04416) In 2008, Jesse Gulch Reach 1 (0.3 miles) was found to not exhibit riparian qualities and was determined to be non-riparian for future

assessment purposes. The same determination was made in 2007 for Temple Gulch Reach 3 (0.5 miles).

Condition Assessment	Wetlands/Springs (acres)	Streams (miles)
Proper Functioning Condition		Jesse Gulch Reach 3: 1.0 Jesse Gulch Reach 4: 1.3 Boxelder Gulch Reach 5: 2.5
Functioning At Risk – condition improving		Jesse Gulch Reach 2: 0.6
Functioning At Risk – no trend in condition		Temple Gulch Reach 2: 0.9 Maudlin Gulch Reach 4: 2.5
Not Assessed	BLM Spring #086-02: 0.1 BLM Spring #086-03: 0.1 BLM Spring #086-04: 0.1 BLM Spring #086-08: 0.1 BLM Spring #086-09: 0.1 BLM Spring #086-15: 0.1	
TOTAL	**0.6 acres**	**9.3 miles**

Boxelder Gulch Reach 5 & Temple Gulch Reach 2: No notes on livestock use available; assessed in 2007.
Maudlin Gulch Reach 4; Jesse Gulch Reaches 2 & 4: No notes on livestock use available; assessed in 2008.
Jesse Gulch Reach 3: Assessed in 1999 using an older riparian assessment tool (Level II riparian inventory form). Heavy livestock and wildlife use (hoof action) and some trailing noted.

Upper Boxelder Gulch Allotment (#04424) No lentic resources present on public lands within the allotment; last assessment in 1999.

Condition Assessment	Streams (miles)
Functioning At Risk – no trend in condition	Boxelder Gulch Reach 6: 0.8 miles
TOTAL	**0.8 miles**

Boxelder Gulch Reach 6: No notes on livestock use available; assessed in 1999.

Elkhorn Creek Allotment (#04615): No lentic resources present on public lands within the allotment.

Condition Assessment	Streams (miles)
Not Assessed	Milk Creek Reach 4: 0.1
TOTAL	**0.1 acres**

Environmental Consequences, Alternative A: Under this alternative, the current grazing system as outlined in the Axial Basin CRMP would continue to be implemented. In this system, a particular rotation is assigned by year and number of days a particular class of livestock can be in a pasture is set; timely consideration of current range conditions are not used to alter the schedule. As mentioned earlier, riparian conditions in the project area have improved under this type of system and trends are likely to continue over the allotments.

However, this alternative also continues to allow supplemental feeding "as necessary" as a Special Term and Condition. General impacts that supplemental feeding and the resulting livestock concentration has to soils and vegetation are described in both Alternatives A & B. Under the current grazing management plan, supplemental feeding has become an annual event

with little to no reporting from operators on where, when, and how much feed was supplied to livestock or why such regular feeding was necessary. With no guidelines in place, feeding operations could then occur on or near riparian areas. Therefore, it is difficult to anticipate with any specificity what impacts this activity would or would not have and is depending on the proximity of the feeding sites to riparian areas.

Environmental Consequences, Alternative B: Under this alternative, there are several propositions that have the potential to reverse improving riparian health trends within the project area. Adverse impacts to riparian health and function are likely to be greatest under this alternative for the following reasons:

1. Under Term and Condition 5, it states that "Supplemental feed is approved (assumed: on public lands), as specified in the CRMP document." In addition to the general impacts that supplemental feeding and the resulting livestock concentration has to soils and vegetation (described in the Soils section), there are no parameters described in this alternative outlining where, when, how much supplemental feeding would occur. Feeding operations, then, could occur on or near riparian areas. Therefore, it is difficult to anticipate with any specificity what impacts this activity would or would not have, depending on the proximity to riparian areas.

2. This alternative would provide the ability to substitute cattle (spring/summer use) for sheep (mostly fall/winter use) in four of the allotments – Elkhorn Creek, Lower Boxelder Gulch, Duffy Mountain, and South Duffy Mountain Allotments. Even though the number of AUMs would stay the same, this option, if exercised, would potentially run concurrent with the Earle and Sons cattle operation in these allotments, effectively either doubling the number of cattle AUMs present in an allotment at one time (e.g. Lower Boxelder Gulch allotment) or result in growing season long grazing (e.g. May through September in the Duffy Mountain allotment). Over utilization is likely under either of these or other potential scenarios and would likely lead to a decline in riparian condition, particularly where cattle are present since cattle have a tendency to concentrate in riparian areas during the dry summer and early fall months.

   As described above, this concentration could compromise riparian plant community health and diversity and channel form/function could change over time. There is also the possibility of adverse effects to any aquatic life if damage to herbaceous vegetation leads to a reduction in canopy and instream cover that influences water temperature and availability of any preferred bankside habitat. Changes to the channel configuration could increase sediment delivery and alter substrate composition that macroinvertebrates and native fish prefer.

3. Despite the proposal to use sheep OR cattle in any of the four aforementioned allotments, Term and Condition 3 states that Kourlis cattle would only use pasture number 3, located in the Lower Boxelder Gulch allotment and that the prescribed grazing rotation would not be followed if Kourlis cattle are grazing within the Axial Basin. If this occurs, not only would there be operator overlap of cattle AUMs within the same allotment at the same time as described above, but it also means that this could, in theory, occur every year if the permittee were to decide to use cattle to fill the AUMs. Again, overutilization is

likely under this alternative and could lead to a decline in riparian resources located within Maudlin Gulch.

4. Finally, the proponent proposes to roughly double the current number of sheep AUMs in Lower Boxelder Gulch allotment between December and early May from 1,152 to 2,258; no reduction of AUMs is proposed elsewhere in the grazing schedule to compensate for this increase. Even though this use would occur during the winter and early spring when riparian vegetation is dormant and sheep do not typically loiter anywhere too long because they are herded, an increase in use and duration as is proposed could have increasing and lasting impacts to the reaches of Maudlin, Boxelder, and Morgan Gulches that are located within that allotment.

Environmental Consequences, Alternative C: A stated objective of the Axial Basin CRMP is to improve the condition of riparian areas along Morgan, Boxelder, Maudlin, and Jesse Gulches. According to the 2004 CRMP Sage Grouse Update as well as the results of the 2008 riparian assessments for those areas, these objectives have largely been met under the current management strategy.

The Axial Basin Livestock Rotation List of rotation options that is proposed under this alternative seeks to continue or improve upon this positive response observed in riparian areas within the Lower Boxelder Gulch and Lower Maudlin Gulch Allotments. By employing adaptive management principles, alternative C affords the greatest flexibility for selecting both classes of livestock by offering more rotation options that are not pre-set by year, but rather considers current range conditions and offers date ranges (rather than a set number of days) a group of livestock can be in a location. It fosters partnership and communication every year to select a rotation schedule for the upcoming grazing season to best meet stated objectives, including those pertaining to riparian resources, and most importantly would continue previously established monitoring to guide future management within the Axial Basin.

Supplemental feeding practices on public lands within the Lower Maudlin and Lower Boxelder Gulch allotments would end under this alternative, eliminating the potential for localized concentration of livestock associated with feeding in or near riparian areas. Livestock concentration in these areas would compromise riparian plant community health and diversity and channel form/function could change over time as a result of bank trampling and increased sedimentation. Riparian resources within these allotments are likely to benefit under this alternative.

Environmental Consequences, Alternative D: For the Lower Boxelder Gulch and Lower Maudlin Gulch Allotments, this alternative restricts via the Feeding Agreement both the number of days (events) and months supplemental feeding could occur and provides documentation and clarity to the circumstances under which supplemental feeding could occur. It also spatially limits feeding to an area within 1/10 mile of previously documented feeding sites, which still localizes any impacts resulting from concentrated feeding sites, but eliminates the potential for feeding to occur in or near more sensitive riparian areas. When combined with the proposed reduction in sheep numbers and the implementation of the improved livestock rotation schedule, this alternative could lead to an overall improvement in riparian conditions allotment-wide,

especially when compared to Alternatives A and B. Grazing-related issues in riparian areas are unlikely under the Feeding Agreement, but if unanticipated problems are identified this alternative requires documentation of supplemental feeding events so that adjustments could be made under adaptive management.

Environmental Consequences, No Grazing Alternative: Removing livestock from the allotments would likely improve riparian and wetland resource conditions over the long-term. A decrease in herbivory on riparian vegetation and trampling caused by livestock in riparian areas would increase soil moisture and reduce the potential for erosion and any associated changes to channel geomorphology and wetland form/function, particularly in low and moderate gradient stream where the presence of riparian vegetation is one of the most important factors in maintaining stability. In ephemeral channels and wetlands, reduced livestock grazing pressure may also maintain or raise seasonal water tables during the dry season to a point where facultative and obligate riparian plant species are able to persist or even expand, thereby further increasing channel stability. However, these benefits may not fully be realized if the riparian resource is used by wildlife, particularly large ungulates, since wildlife can also have similar impacts to riparian resources, especially during periods of drought. Also, livestock grazing on adjacent private and other non-federal lands would continue to produce direct effects to riparian resources that may indirectly affect riparian resources on federally managed lands.

Environmental Consequences, Cumulative Impacts: Past, present, and reasonably foreseeable actions that affect riparian areas in the Axial Basin primarily include ranching, some fluid mineral exploration and development, and the infrastructural development necessary to support these two activities.

The Axial Basin is characterized by relatively low gradient perennial and ephemeral drainages, many of which have parallel dirt or gravel roads, drain into the Yampa River. The effect to riparian areas due to fluid mineral and infrastructural development is primarily sedimentation, a result of the construction and maintenance of roads and pads adjacent to any riparian areas in the watershed. The portion of sediment that is delivered to the drainages and therefore the Yampa River as a direct consequence of these improvements is not known, but is likely to occur during the spring high flow period coincident with the natural sediment discharge peak as well as summer storm events. The presence of roads parallel to drainages can restrict natural lateral movement of waterways over the long term by armoring and/or straightening banks and reducing any floodplain capability to moderate overbank flooding.

Public lands within Axial Basin occur south of the river, are intermixed with private and State lands, and are included in several grazing allotments. Where land health/riparian assessments are available, riparian standards are mostly being met. Roads adjacent to the floodplain or the presence of invasive species are usually cited as compromising riparian health in these instances. Livestock use of riparian areas on public lands is light to moderate, as many private portions of the allotments include water developments that help to keep extended livestock use away from these sensitive areas. Riparian condition on private lands within the watershed is not known.

3.3.6 Wildlife, Aquatic

Affected Environment: Streams and riparian areas support aquatic wildlife within the general area. The Yampa River, Milk Creek and Good Spring Creek provide habitat for a number of native fish species, including speckled dace, roundtail chub, mottled sculpin, flannelmouth sucker and bluehead sucker. Smaller, ephemeral creeks, springs and riparian areas provide habitat for amphibians and non-vertebrate aquatic wildlife. Amphibians occurring within the resource area include western chorus frog, tiger salamanders, Great Basin spadefoot toad and northern leopard frogs.

Environmental Consequences, Alternatives A, B, C & D: The grazing system described in the Alternative C should maintain and improve riparian habitat, in turn, providing suitable habitat for aquatic wildlife species. Rest/deferment and rotational grazing systems can help prevent riparian degradation and minimize any potential impacts to aquatic wildlife. Riparian assessment data shows most riparian habitats to be in good condition, providing suitable and productive habitat for aquatic wildlife. These conditions are expected to continue under the Proposed Action. Although Alternatives A, B and D would have similar grazing schedules, Alternative C would be preferred due to the elimination of winter feeding under this alternative (See Riparian Section 3.3.5).

Environmental Consequences, No Grazing Alternative: Elimination of livestock grazing would result in improved riparian conditions and may improve ecological condition. As conditions improve, the health, vigor and abundance of riparian vegetation would increase, providing healthy and productive habitat for aquatic wildlife species.

Environmental Consequences, Cumulative Impacts: Cumulative impacts to aquatic habitats would be similar to those described in the Riparian Section (3.3.5) of this EA.

3.3.7 Wildlife, Terrestrial

Affected Environment: Terrestrial wildlife habitats on the eight allotments are comprised primarily of sagebrush stands, oakbrush/mixed mountain shrublands with small areas of pinyon-juniper (PJ) woodlands, and salt desert shrub. A variety of wildlife habitats and their associated species occur in the general area. Common species such as coyotes, cottontail rabbits and ground squirrels likely use these habitats. The allotments provide important habitat for elk, mule deer and pronghorn. Portions of the allotments are classified as critical winter habitat for mule deer and winter concentration areas for pronghorn and elk.

Environmental Consequences, Alternatives A, B, C & D: Livestock grazing can alter vegetation structure, composition and function. Effects on terrestrial wildlife are dependent on the species of interest and may be adverse or beneficial depending on grazing: numbers, timing, frequency and intensity. The CRMP implemented a deferred rotational grazing system that has proved beneficial to upland vegetation and wildlife habitats by reducing utilization on shrubs and grasses within the Lower Boxelder Gulch and Lower Maudlin Gulch allotments. However, even with improvements, utilization levels on shrubs remain over objectives in some areas, mainly in close proximity to stackyards. Alternatives A and B would continue to allow winter sheep feeding. In addition, Alternative B doubles the number of sheep AUMs allowed during the

winter on the Lower Boxelder Gulch Allotment and subsequently the Lower Maudlin Gulch Allotment if a four pasture rotation is used. When sheep are not being fed this would likely increase competition between big game species and sheep for available browse during the winter and would likely exceed the maximum allowable 40% utilization on browse species.

Alternative C would implement a similar type of grazing system and would also eliminate winter feeding and reduce winter sheep use on the Lower Boxelder Gulch and Lower Maudlin Gulch Allotments. This would be beneficial to upland habitats and would maintain or improve wildlife habitats across the allotments by continuing to reduce utilization on shrub species. Alternative D would also permit winter feeding, however, the quantity and duration of winter feeding would be reduced under this alternative. Feeding would only occur within 1/10 mile of the existing stackyard. Utilization on shrubs would be expected to remain high in these areas, however, this would impact a much smaller area than in Alternatives A and B.

Current conditions would continue under Alternative A for the other six allotments. Reduction of AUMs and adjustments to season of use on the Big Bend and East Godiva Allotments described under Alternatives C and D would likely improve upland habitat conditions and improve habitat for migratory birds. Alternative B would likely result in detrimental impacts to grasses and forbs due to a potential increase in cattle AUMs and an extended grazing period.

Environmental Consequences, No Grazing Alternative: This alternative would lead to increases/improvements in vertical structure, composition and density of herbaceous understory on the allotments as a whole from current conditions. Benefits associated with livestock removal would be most expected in those areas that currently experience concentrated livestock use (such as water sources). Overall, wildlife species that would receive the most benefit would be grazing species and species that use herbaceous understory for hiding cover and nest concealment. This alternative would also eliminate competition between sheep and elk, mule deer, and pronghorn for available winter browse.

Environmental Consequences, Cumulative Impacts: Cumulative impacts to terrestrial wildlife would be similar to cumulative impacts described in the Migratory Bird section (3.3.2) of this EA.

3.4 HERITAGE RESOURCES AND HUMAN ENVIRONMENT

3.4.1 Cultural Resources

Affected Environment: The BLM's authorization of grazing permits is considered an undertaking subject to compliance with Section 106 of the National Historic Preservation Act (NHPA). The BLM has the legal responsibility to consider the effects of its actions on cultural resources located on federal land. BLM Manual 8100 Series; the Colorado State Protocol; and BLM Colorado Handbook of Guidelines and Procedures for Identification, Evaluation, and Mitigation of Cultural Resources provide guidance on Section 106 compliance requirements to meet appropriate cultural resource standards. Section 106 of NHPA requires federal agencies to: 1) inventory cultural resources within federal undertaking Areas of Potential Effect (APEs), 2) evaluate the significance of cultural resources by determining National Register of Historic Places (NRHP) eligibility and, 3) consult with applicable federal, state, and tribal entities

regarding inventory results, National Register eligibility determinations, and proposed methods to avoid or mitigate potential impacts to eligible sites.

In Colorado, the BLM's NHPA obligations are carried out under a Programmatic Agreement (PA) among the BLM, the Advisory Council on Historic Preservation, and the State Historic Preservation Officer (SHPO). Should a routine undertaking be determined to have "no effect" or "no adverse effect" by the BLM-LSFO archaeologist, the undertaking may proceed under the terms and conditions of the PA. If the undertaking is determined to have "adverse effects," project-specific consultation is then initiated with the SHPO. Additionally, cultural resources assessment of grazing allotments follows the procedures and guidance of the Colorado BLM State Director as provided in BLM Instructional Memorandums (Ims) IM-WO-99-039, IM-CO-99-007, IM-CO-99-019, and IM CO-2002-29.

The culture history of northwestern Colorado is presented among several recent context studies. Reed and Metcalf's (1999) study of the Northern Colorado River Basin provides applicable prehistoric and historic overviews as compiled by Frederic J. Athearn (1982) and Michael B. Husband (1984). A historical archaeology context also was prepared for the State of Colorado by Church et al. (2007). Furthermore, significant cultural resources administered by the BLM-LSFO are provided in a Class 1 (archival) overview (McDonald and Metcalf 2006), in addition to valuable contextual data provided by synthesis reports of archaeological investigations conducted for a series of large pipeline projects in the BLM-LSFO management area (Metcalf and Reed 2011; Rhode and others 2010; Reed and Metcalf 2009).

A Class 1 cultural resources assessment was completed for the eight allotments included in the current undertaking (collectively, the subject allotments—Elkhorn Creek, Lower Boxelder Gulch, Duffy Mountain, South Duffy Mountain, Big Bend, East Godiva, Lower Maudlin Gulch, and Upper Boxelder Gulch Allotments) by BLM-LSFO Archaeologist Kim Ryan on July 12, 2013. Data reviewed were obtained from BLM-LSFO cultural program project files, site reports, and atlases, in addition to BLM-maintained General Land Office (GLO) plats and patent records. Electronic files also were reviewed through online cultural resource databases including *Compass* (maintained by the Colorado Office of Archaeology and Historic Preservation) and the National Register Information System (NRIS; maintained by the National Park Service). The results of archival research are summarized in the following table; data provided are focused on BLM-administered lands within the specified allotments, and based on information available from the above-referenced sources.

Allotment No. (BLM acres)	Estimated BLM Acres Previously Surveyed	BLM Acres NOT Surveyed	Percent of BLM Acres Inventoried Within Allotment	Identified NRHP-Eligible or Needs Data Sites	Estimated Sites Within Allotment*	Estimated NRHP-Eligible or Needs Data Sites Within Allotment*
04615 (2,240)	377	1,863	16.8	3	67	20
04431 (11,490)	1,756	9,734	15.3	19	345	104
04432 (9,282)	242	9,040	2.6	5	278	83
04430 (479)	35	444	7.3	1	14	4
04414 (1,532)	323	1,209	21.1	2	46	14
04415 (1,496)	150	1,346	10.0	3	45	14
04416 (8,534)	615	7,919	7.2	8	256	77

04424 (1,915)	509	1,406	26.6	2	57	17

*Estimated site density as based on existing inventory data. Estimates may be revised (up or down) by future inventories and/or consultations.

Background research identified ninety five documented cultural resource sites on BLM-administered lands within subject allotments. Forty three documented sites are currently evaluated as NRHP-eligible or "needs data" (i.e., *historic properties* as defined by NHPA), five of which consist of sites with potential cultural significance to Native American tribes – specific information regarding site types and numeric designations are herein withheld with respect and consideration for potential cultural sensitivities. Monitoring of identified historic properties within the subject allotments was previously conducted by the BLM-LSFO to identify and assess potential livestock impacts as reported in Keesling et al. (2000), Collins et al. (2001), and Collins et al. (2002).

Documented site types include prehistoric lithic concentrations and/or campsites, rock art and rock shelter sites, in addition to historic-age camps and features associated with homesteading, ranching, agriculture, transportation, and mineral extraction/energy development (e.g., building/architectural remains, trash dumps, water control features, road segments, mining features, etc.). Further review of historic-age GLO plats shows evidence of possible (and some known/documented) features and sites within the subject allotments such as roads and stage/wagon routes, private and community buildings, water control features, and fence lines. However, many such features are not likely to be considered significant (or NRHP-eligible) and most – mapped or otherwise – serve primarily as historic evidence of long-term grazing and land use within the subject allotments and surrounding vicinity, some of which predates 1900.

Based on the available data for the allotments and surrounding area, an estimated 1,108 cultural resource sites (and/or features) may exist within the subject allotments, of which approximately 333 (roughly one-third of the estimated sites) would likely be evaluated as NRHP-eligible or "needs data." As such, cultural resources inventory for select portions of BLM-administered lands within the subject allotments should be conducted within ten years of permit issuance. Subsequent inventory should focus on areas of livestock concentration, and where historic-age maps indicate potential for cultural resources. Additionally, continued monitoring of historic properties should be conducted throughout the term of the permit to identify and assess potential livestock impacts. If, as a result of new assessment or monitoring, historic properties are found to exhibit potential for or actively occurring impacts, mitigation measures will be identified and implemented in consultation among the BLM-LSFO and SHPO.

Environmental Consequences, Alternative A, B, & D: Because these alternatives would allow for the continuation of supplemental livestock feeding, these alternatives present the potential for additional livestock concentrations and installation areas (e.g., feed areas and stackyards), thereby increasing the potential for impacts to cultural resources.

Environmental Consequences, Alternatives C: Direct impacts to historic properties where livestock concentrate may include trampling, chiseling, and churning of site soils, cultural features and artifacts, artifact breakage, and impacts from standing, leaning, or rubbing against historic structures, above-ground cultural features and/or rock art (Broadhead 2001; Osbourn et al. 1987). Indirect impacts from livestock concentrations may include increased soil erosion and gullying, in addition to increased potential for unlawful artifact collection and/or vandalism of

cultural resources. Other indirect impacts may include degradation of the historic setting, thereby detracting from the view-shed and historic feeling of nearby cultural resource sites.

Environmental Consequences, No Grazing Alternative: While a no grazing alternative alleviates potential damage from livestock activities, cultural resources are constantly subject to site formation processes or events after creation (Binford 1981; Schiffer 1987). These processes can be both cultural and natural, and may occur instantly or over thousands of years. Cultural formation processes include activities directly or indirectly caused by humans. Natural processes include chemical, physical, and biological processes of the natural environment that impinge upon and/or modify cultural materials.

Environmental Consequences, Cumulative Impacts: Cumulative impacts to historic properties may occur within or adjacent to the allotment, including areas within the allotment view-shed. However, the region has been historically grazed (for more than 50 years) and the intensity of livestock use has generally decreased over time. Any extant historic property within or adjacent to the subject allotments—and where potential for impacts exist—are more likely to have sustained impacts as a result of prior livestock/grazing activities or other historic land-use activities (e.g., mining, agriculture, etc.). Although continued livestock use may not pose additional, direct impacts in areas where prior grazing was intensive, secondary effects such as increased erosion could cause long-term, irreversible effects to historic properties, where present. Livestock use also has increased ground visibility over time as a result of increased erosion and decreased ground cover, and by the installation and/or removal of range improvements such as stock ponds and pipelines. These factors may result in the exposure of cultural deposits that would otherwise remain obscured or buried, thereby raising the potential for illegal collection of cultural materials.

Mitigation Measures: Cultural resources survey for select portions of BLM-administered lands within the subject allotments should occur within ten years of permit issuance, with efforts focused on identified areas of livestock concentration (e.g., springs and/or water developments, gates, chutes, etc.). Any cultural resources identified as NRHP-eligible or "needs data" also should be assessed for potential livestock impacts. Continued monitoring of documented historic properties should be conducted during the term of the permit to identify and assess potential livestock impacts to historic properties. Permit issuance for continued livestock use is appropriate, provided that any identified impacts to historic properties are mitigated. Should the BLM-LSFO determine that livestock grazing is having an adverse effect on historic properties, mitigation would be developed in coordination with the SHPO and applicable consulting/interested parties.

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3.4.2 Native American Religious Concerns

Affected Environment: Four Native American tribes have cultural and historical ties to lands administered by the BLM-LSFO. These tribes include the Eastern Shoshone, Ute Mountain Ute, Uinta and Ouray Agency Ute, and the Southern Ute.

American Indian religious concerns are legislatively considered under several acts and Executive Orders including the American Indian Religious Freedom Act, the Native American Graves Environmental Assessment Protection and Repatriation Act, and Executive Order 13007 (Indian Sacred Sites). In sum, and in concert with other provisions such as those found in the NHPA and Archaeological Resources Protection Act, these acts and orders require the federal government to carefully and proactively consider the traditional and religious values of Native American culture and lifeways to ensure, to the greatest degree possible, that access to sacred sites, treatment of human remains, the possession of sacred items, conduct of traditional religious practices, and the preservation of important cultural properties are not unduly infringed upon. In some cases, these concerns are directly related to "historic properties" and "archaeological resources." Likewise, elements of the landscape without archaeological or human material remains also may be involved. Identification of Native American concerns is normally completed during land-use planning efforts, reference to existing studies, or through direct consultation with tribes.

Consultation for the type of proposed undertaking is performed annually with the aforementioned tribes. Letters were sent to the tribes in the spring of 2010 describing general range permits and projects as planned for the 2011 fiscal year. No comments were received. Consultations for individual range improvement projects will be performed in conjunction with project-specific cultural resource assessments.

Environmental Consequences, Alternative A, B, & D: Because these alternatives would allow for the continuation of supplemental livestock feeding, these alternative actions present the potential for additional livestock concentration and installation areas (e.g., feed areas and stackyards), thereby increasing the potential for direct impacts.

Environmental Consequences, Alternatives C: Items, sites, or landscapes determined as culturally significant to the tribes can be directly or indirectly impacted. Direct impacts may include, but are not limited to, physical damage, removal of objects or items, and activities construed as disrespectful (e.g., installation of portable toilets, holding pens, or water control features near a sacred site). Indirect impacts may include, but are not limited to, prevention of access (hindering the performance of traditional ceremonies and rituals), increased visitation of an area, and potential loss of integrity related to religious feelings and associations.

As a result of Class 1 cultural resources assessments, five historic properties of potential cultural significance were identified within three of the subject allotments (see *Section 3.4.1*). However, all alternatives do not prevent access to any known sacred sites, prevent the possession of sacred objects, or interfere with the performance of traditional ceremonies and/or rituals.

Environmental Consequences, No Grazing Alternative: None

Environmental Consequences, Cumulative Impacts: Continued livestock grazing has the additive effect of altering the landscape from that ancestrally known by the tribes. Five potentially significant sites were identified within the subject allotments; however, because permit issuance does not involve construction, ground disturbance, or the direct sale/exchange of federally managed lands, the proposed undertaking currently poses no effects with regard for Native American concerns.

Mitigation Measures: Currently, there are no known adverse impacts to any culturally significant items, sites, or landscapes. If new information is provided by consulting tribes, additional or edited terms and conditions of land-use and/or mitigation may be required to protect resource values. Future assessment and consultation will occur during the BLM's review of individual range improvement projects. Should the BLM-LSFO identify adverse impacts, further discussion regarding potentially significant sites and possible protection or mitigation strategies would be warranted.

3.4.3 Social and Economic Conditions

Affected Environment: The issuance of public land grazing permits facilitates the continuance of livestock grazing which contributes to the operation of the grazing permit holder. Permitted grazing use on public lands is a large factor in keeping the local ranching families and industry viable. This in turn has an effect in maintaining the stability of local economies with this economic effect of ranching generally increasing as community size decreases. Small communities in NW Colorado are much more economically dependent on ranching and agriculture than larger communities with more diverse economic bases.

Environmental Consequences, Proposed Action: Any alternative that continues public land grazing would continue to provide the beneficial economic effect of sustainable ranching for the local communities. The scope and scale of this impact to the individual grazing permits holder would vary depending on which alternative is chosen. This variance to the individual permit holders would not carry a measurable impact into the local economies as a whole.

Environmental Consequences, No Grazing Alternative: Not issuing a grazing permit would cause a major adverse economic impact to the grazing permittees. The economic impact to the livestock operator by not issuing a grazing permit could result in the termination of the livestock operation. This termination would have economic impacts to the local and regional economy. In addition, the elimination of a grazing operation could force the permittee to seek other options for his private property such as subdividing for development of other land uses which can be more of an economic return to the individual but may not carry forward with economic benefits to local and regional economies.

3.5 RESOURCE USES

3.5.1 Livestock Operations

Affected Environment: Sustainable ranching and livestock grazing have been a key component of the Axial Basin for the better part of a century, generations of families have depended on public land grazing in Axial Basin and surrounding allotments for their livelihood and longevity.

Environmental Consequences, All Grazing Alternatives: The continuance of public land grazing would continue to sustain the ranching community and permittees authorized on the allotments under the Alternative A. Alternatives B, C & D would require some level of operational adjustments to public land grazing, Alternative C & D would require the most significant adjustments. With the change in % PL and subsequent reduction in livestock numbers, and the elimination or reduction of authorized feeding of hay on public lands Kourlis Ranch would be adversely impacted and require a high level of livestock operational adjustments for grazing these public land allotments.

Environmental Consequences, No Grazing Alternative: This alternative would be most distressing for permittees authorized on the subject allotments. Under this alternative permittees who rely on these public land allotments as part of overall livestock operations would not be able to continue ranching under realistic circumstances.

Under this alternative private lands that are a base for livestock operations and public land grazing preference may be put to other uses that would prove detrimental to adjacent public lands.

Environmental Consequences, Cumulative Impacts: With many decades of ranching and public land grazing, many adjustments have been necessary to address sustainable resource conditions and continue public land grazing. Future adjustments must be anticipated as natural resources are dynamic and environmental conditions unpredictable. Implementation of any alternative that continues public land grazing would not have cumulative adverse impacts if necessary adjustment continues to be incorporated into the overall management of these public land allotments.

3.5.2 Recreation

Affected Environment: The Proposed Action encompasses portions of the Little Yampa Canyon Special Recreation Management Area (SRMA). This SRMA is to be managed to provide river boating, big game hunting, camping, wildlife viewing and interpretation/education opportunities for local communities and visitors to the area (LSFO RMP/ROD October 2011). Trails in the SRMA also provide for other activities such as hiking and equestrian uses. The Yampa River provides recreation opportunities such as canoeing, kayaking and rafting. In January 1999, under a cooperative agreement with BLM, the Colorado Department of Parks and Wildlife has become the primary manager of the Yampa River public land access sites.

Environmental Consequences, All Grazing Alternatives: Grazing has been known to have a direct effect on visual resources, camping, picnicking, fishing opportunities, and the overall recreational experience. The locations that people seek for camping (relatively level ground, water, shade) are the same locations that livestock seek as bedding. Aesthetics can be greatly depreciated by trampled or denuded vegetation and the smell and nuisance of livestock manure. Additionally guard dogs used by sheep permittees have been known to be intimidating and threatening to recreational users; conflicts of this nature have been reported in the area. Removing or reducing the practice of supplemental feeding would not have any changes impacts to recreation.

Environmental Consequences, No Grazing Alternative: Under this alternative, land-use competition between recreation and livestock would cease. Livestock and related livestock management facilities would be removed or fall into disrepair. People would be able to travel through more of the public lands unrestricted by fences. Roads previously maintained by vehicle use from the livestock industry would disappear. Camping in areas free of cattle, cattle manure and insects would be available within the SRMA. Overall impacts would be beneficial to recreation resources.

Environmental Consequences, Cumulative Impacts: While some aspects of livestock grazing for recreational visitors within the allotments can be socially controversial, the effects on the human environment are not new, unusual, unexpected or significant. Some conflict between recreation and livestock management would continue, but would remain insignificant in scope and duration for the identified allotments. Proposed livestock use in these allotments is not expected to create dramatic shifts in recreation use, which is also expected to increase relative to population growth, regardless of which alternative is selected.

CHAPTER 4 – PUBLIC LAND HEALTH STANDARDS

4.1 INTRODUCTION

The Little Snake Field Office conducted a landscape health assessment within the Axial Basin Watershed during May of 2007. Areas were identified that were representative of the different allotments, habitats, communities, land treatments, etc. on public land within the landscape where planned stops were made for assessment. Indicators of rangeland health were assessed to determine if the area was meeting the standards for rangeland health. The following table summarizes the results of the 2007 Axial Basin Landscape Health Assessment:

Axial Basin

Site Summary

Standard #		1	2	3	4	5	
Sites	**Allot. #**	**Upland Soils**	**Riparian/ Wetlands**	**Native/Noxious Species**	**Special Status Species**	**Water Quality**	**Overall**
6	04615	M	N/A	M	M	N/A	M
13	04424	M	N/A	M	M	N/A	M
14	04416	M	N/A	NM 7, 8	M	N/A	NM 3
26	04414	M	N/A	NM 7, 8	M	N/A	NM 3
27	04415	NM 1, 2	N/A	NM 1, 2, 7, 8, 10	NM 10	N/A	NM 1, 3, 4
32	04432	M	N/A	NM 1, 7, 8, 9, 10	NM 9, 10	N/A	NM 3, 4
33	04432	M	N/A	M	M	N/A	M
34	04431	M	N/A	M	M	N/A	M
35	04431	Skipped; allotment was represented with one stop					N/A
36	04416	M	N/A	NM 7, 8, 10	NM 9, 10	N/A	NM 3, 4

M = Standard is Met
NM = Standard is Not Met, numbers represent indicators that failed, see 4.2 below for numeric identification.

The conclusion from the Axial Basin Executive Summary stated the following:

Portions of the Axial Basin Landscape that are currently not meeting standards or are considered "functional-at risk" were rated as such due to a prevalence of cheatgrass and annual weeds, lack of native perennials, juniper encroachment, and closed-canopy sagebrush stands. Habitat for sage grouse and most other wildlife species within the Axial Basin Landscape could be improved by implementing the following actions: 1) treating/controlling cheatgrass and weedy annuals; 2) planting native shrubs, grasses, and forbs; 3) decreasing utilization levels and/or improving distribution of wild ungulates (especially elk) and domestic livestock; 4) treating juniper encroachment; 5) treating dense sagebrush stands; and 6) creating a mosaic of vegetation types using these methods. Sagebrush treatments should not occur at or near sage grouse or sharp-tailed grouse leks as this may cause birds to abandon the area. If feasible, greater effort should be allocated toward inventories and monitoring of songbirds, waterbirds, bats, and other non-game animals on public lands.

4.2 COLORADO PUBLIC LAND HEALTH STANDARDS

In January 1997, the Colorado State Office of the BLM approved the Standards for Public Land Health and amended all RMPs in the State. Standards describe the conditions needed to sustain public land health and apply to all uses of public lands.

4.2.1 Standard 1 Upland soils exhibit infiltration and permeability rates that are appropriate to soil type, climate, land form, and geologic processes.

Finding of most recent assessment: The following are results of the most recent 2007 land health assessment:

Lower Boxelder Gulch: The upland soil standard is met in the allotment. It was also noted that there was evidence of accelerated erosion in some locations and that past livestock trailing was creating overland flow patterns in soils.

Duffy Mountain: The upland soil standard is met; however the same site failed to demonstrate a healthy/productive plant community due to cheatgrass dominance that was not attributed to past or current livestock management.

Lower Maudlin Gulch: The upland soil standard is also being met; however the same site failed to demonstrate a healthy/productive plant community due to cheatgrass dominance that was attributed to past livestock management. This allotment is managed under a deferred rotation system with multiple design features and terms and conditions. Monitoring in 2010 shows a overall positive (upward) trend in the vegetation community within this allotment.

South Duffy Mountain: No land health assessment data is available for this allotment.

Big Bend: The upland soil standard is being met; however the same site failed to demonstrate a healthy/productive plant community due to cheatgrass and annual forb dominance that was partially attributed to past livestock management.

East Godiva: The upland soil standard failed also due to heavy cheatgrass dominance and very low plant diversity. Notes indicate that without cheatgrass the site could experience accelerated erosion.

Elkhorn Creek: The upland soil standard is being met.

Alternative A: Upland soil health standards are currently being met under the grazing management plan as outlined in this alternative. However, with no changes proposed, it is unknown if this standard would continue to be met over the long term.

Alternative B: Under this alternative, there are several proposals that have the potential to reverse improving vegetation and soil trends within the project area. Supplemental feeding would continue, but no details are provided as to what conditions would necessitate this practice or when, where, and how long supplemental feeding would occur. Therefore, feeding (and the resulting animal concentration) in theory could occur repeatedly in the same place or on sensitive soils where the potential for vegetation removal and soil compaction and erosion could occur. This alternative also provides for the potential to substitute cattle AUMs for sheep AUMs in certain allotments annually during the entire growing season that could also result in vegetation overutilization and soil loss. Adverse impacts to vegetation and soil health and function are most likely under this alternative and because of the lack of detail it is unknown if this standard would continue to be met over the long term.

Alternative C: The additional rotation options and other adaptive management techniques that are proposed under this alternative seek to continue or improve upon the positive response already observed in upland vegetation and soils resulting from the rest rotation grazing system which was implemented twenty years ago. Supplemental feeding practices on public lands within two allotments would end under this alternative, which would eliminate the potential for localized concentration of livestock around feed locations that result in overutilization of vegetation and soil compaction. Vegetation and therefore soils within these allotments are likely to benefit most under this alternative and would continue to meet this standard.

Alternative D: Upland soil health standards are currently being met. Supplemental feeding as directed by the feeding agreement would limit the location, frequency and duration of feeding events that would in turn mitigate impacts to soils across the allotments included in the agreement. Standards are likely to be met under this alternative.

No Grazing Alternative: Removing livestock from public lands would generally improve soil conditions within the allotments, but may have unintended, indirect impacts to soil health immediately adjacent to the allotment if additional infrastructure would be built to implement this alternative. This standard is likely to continue to be met under this alternative.

4.2.2 Standard 2 Riparian systems associated with both running and standing water function properly and have the ability to recover from major disturbance such as fire, severe grazing, or 100-year floods.

Finding of most recent assessment: All assessed riparian resources within all allotments are meeting this standard, with the exception of Boxelder Gulch Reach 1, located within the Lower Boxelder Gulch allotment. Conditions in this particular reach are declining for reasons other than current or past livestock management. For a detailed summary of riparian resource

conditions within each of the allotments, please refer to Section 3.3.5 Wetlands and Riparian Zones: Affected Environment.

Alternative A: Riparian health standards are currently being met under the grazing management plan as outlined in this alternative. Therefore, with no changes proposed, this standard may continue to be met if supplemental feeding occurs outside of riparian areas.

Alternative B: Under this alternative, there are several propositions that have the potential to reverse improving vegetation and soil trends within the project area. Supplemental feeding would continue, but no details are provided as to what conditions would necessitate this practice or when, where, and how long supplemental feeding would occur. Therefore, feeding (and the resulting animal concentration) in theory could occur in or near riparian areas, where adverse impacts to riparian soils and vegetation could occur. This alternative also provides for the potential to substitute cattle AUMs for sheep AUMs in certain allotments annually during the entire growing season that could result in vegetation overutilization and congregation of livestock in sensitive riparian areas. Adverse impacts to riparian health and function are most likely under this alternative and because of the lack of detail it is unknown if this standard would continue to be met over the long term.

Alternative C: The additional rotation options and other adaptive management techniques that are proposed under this alternative seek to continue or improve upon the positive response already observed in riparian areas since the rest rotation system was initiated.

Supplemental feeding practices on public lands within two allotments would end under this alternative, which would eliminate the potential for localized concentration of livestock around feed locations that could result in overutilization of vegetation and soil compaction in riparian areas. Riparian resources within these allotments are likely to benefit most under this alternative and would continue to meet this standard.

Alternative D: With the exception of one area where impacts are unrelated to livestock impacts, riparian health standards are currently being met. Supplemental feeding as directed by the feeding agreement would prevent feeding from occurring near riparian areas, eliminating the potential for impacts that could otherwise occur under Alternatives A and B. Standards are likely to continue to be met under this alternative.

No Grazing Alternative: The potential for direct and indirect impacts to riparian areas caused by livestock use, including any potential for sedimentation, is eliminated under this alternative. This alternative has the potential to benefit overall riparian resources the most. This standard would continue to be met.

4.2.3 Standard 3 Healthy, productive plant and animal communities of native and other desirable species are maintained at viable population levels commensurate with the species and habitat's potential.

Finding of most recent assessment: Standard Not Met for the Axial Basin Watershed. Healthy Animal Communities - 14% of all sites visited did not meet this standard. Healthy Plant Communities - 42% of all sites visited did not meet this standard.

Alternative A: This alternative would continue to move the affected allotments toward meeting standards. The implementation of the CRMP and continuation of the intentions and objectives of the CRMP have improved and would continue to improve Land Health in the Axial Basin.

Alternative B: Because of the proposal to graze cattle or sheep in any given year under this alternative and because of the lack of detail it is unknown if this standard would continue to move the allotments toward meeting standards where standards are not being met.

Alternative C: Prescribes a reduction of sheep numbers and elimination of concentration areas associated with feeding on the Lower Boxelder Gulch and Lower Maudlin Gulch Allotments, combined with increased flexibility and adaptive management. This Alternative would be the most conducive toward moving conditions on the affected allotments toward meeting these standards. In all other grazing alternatives livestock grazing reductions and seasonal adjustments to the East Godiva and Big Bend Allotments are incorporated to address land health standards.

Alternative D: Prescribes a reduction of sheep numbers and reduction (in area) of concentration areas associated with feeding on the Lower Boxelder Gulch and Lower Maudlin Gulch Allotments, combined with increased flexibility and adaptive management. This Alternative would be conducive toward moving conditions on the affected allotments toward meeting these standards, and would be preferred to Alternative A for the purpose of meeting and maintaining Land Health Standards. In all other grazing alternatives livestock grazing reductions and seasonal adjustments to the East Godiva and Big Bend Allotments are incorporated to address land health standards.

No Grazing Alternative: This alternative would nullify the cooperation, efforts, and progress made under the CRMP. Conditions would remain the same and potentially deteriorate without the multi-stakeholder input toward noxious weed management.

4.2.4 Standard 4 Special status, threatened and endangered species (federal and state), and other plants and animals officially designated by the BLM, and their habitats are maintained or enhanced by sustaining healthy, native plant and animal communities.

Finding of most recent assessment: The allotments provide habitat for greater sage-grouse, a BLM sensitive species and a candidate for listing under the Endangered Species Act. The allotment also provides habitat for three additional BLM sensitive species: Columbian sharp-tailed grouse, bald eagles and Brewer's sparrow. The Elkhorn Creek, Upper Boxelder Gulch, Dry Gulch Allotment, Big Bend and Lower Boxelder Gulch Allotments were meeting the standard for special status animal species. The East Godiva, Duffy Mountain and Lower Maudlin Gulch Allotments were not meeting this standard that was attributed to historic grazing practices.

Alternative C: Has the greatest potential to move the East Godiva and Lower Maudlin Gulch Allotments towards meeting this standard. This alternative would reduce AUMs on the East Godiva Allotment and reduce numbers and eliminate winter feeding on the Lower Maudlin Gulch Allotments. These actions would have potential to result in positive impacts to upland habitats. Allotments that are meeting this standard would likely continue to meet this standard under all grazing alternatives.

4.2.5 Standard 5 The water quality of all water bodies, including ground water where applicable, located on or influenced by BLM lands will achieve or exceed the Water Quality Standards established by the State of Colorado.

Finding of most recent assessment: As of 2013, the portion of the Yampa River that flows through most of the allotments is on the CDPHE's Section 303(d) list of Impaired Waters

because of high priority total recoverable iron impairment and is on the state's Monitoring and Evaluation List for a suspected water quality problem regarding sediment load.

Alternatives A, B, C & D: Livestock grazing would have no relatable impact to the total recoverable iron impairment. Livestock access from the allotments that are adjacent to the Yampa River could potentially cause a slight increase in sedimentation. Any access livestock have to the river from private lands between the allotments and the Yampa River is outside the permitted actions analyzed here. Permitting livestock grazing in these allotments as proposed is not likely to result in measurable changes to water quality.

No Grazing Alternative: The potential for direct and indirect impacts to downstream water quality caused by livestock use, including any potential for sedimentation, is eliminated under this alternative. This alternative has the potential to benefit overall water quality downstream of the allotments.

SIGNATURE OF PREPARER: M. Lowry 7/6/15

SIGNATURE OF ENVIRONMENTAL REVIEWER: Kathy McKinstry

DATE SIGNED: 7/6/15

Finding of No Significant Impact
DOI-BLM-CO-N010-2013-0050-EA

Based upon a review of this Environmental Assessment and the supporting documents, I have determined that the Proposed Action is not a major federal action and will not have a significant effect on the quality of the human environment, individually or cumulatively with other actions in the general area. No environmental effects meet the definition of significance in context or intensity, as defined at 40 CFR 1508.27 and do not exceed those effects as described in the Little Snake Record of Decision and Resource Management Plan (2011). An environmental impact statement is not required. This finding is based on the context and intensity of the project as described below.

Context: The project is a site-specific action directly involving BLM administered public lands that do not in and of itself have international, national, regional, or state-wide importance.

Intensity: The following discussion is organized around the 10 Significance Criteria described at 40 CFR 1508.27. The following have been considered in evaluating intensity for this Proposed Action:

1. Impacts that may be both beneficial and adverse
The beneficial effects of the Proposed Action includes: in authorizing public land grazing this action sustains the local economy as grazing operations would continue to supply personal income to the operator and employees, and would have a proportional influence on the regional, Colorado, and national economy. This action supports the western livestock industry. The authorized livestock operator(s) have mandatory and special terms and conditions that must be met to maintain their grazing preference. This provides a certain level of stewardship of public lands in that if these lands were to become degraded by any activity or event, natural or human in origin, grazing and or other authorized uses would be terminated. This stewardship role of the livestock operator not only mandates proper livestock and forage management but also provides communication with the BLM as to other activities or events that could cause degradation to public lands. Long term effects would be limited in scope.

2. Degree of effect on public health and safety
There would be no effects on public health and safety.

3. Unique characteristics of the geographic area such as proximity to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas
There are no park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas in the area of Proposed Action. As described in the EA, impacts to cultural resources were identified for the Proposed Action. As this action is not a new action but a continuation of historic land uses in this area there would be no affect to unique characteristics of the geographic area.

4. Degree to which the possible effects on the quality of the human environment are likely to be highly controversial
Public input regarding the Proposed Action has been solicited during the planning process. The BLM Little Snake Field Office sent out a Notice of Public Scoping on December 15, 2010 to determine the level of public interest, concern, and resource conditions on the grazing authorizations that were up for renewal in FY 2012. A Notice of Public Scoping was posted on the Internet, at the Colorado BLM Home Page, asking for public input on permit/lease renewals. Individual letters were sent to the affected permittees/lessees, informing them their permit/lease was up for renewal and requesting any information they wanted included in or taken into consideration during the renewal process. No comments were received.

5. Degree to which the possible effects on the quality of the human environment are highly

uncertain or involve unique or unknown risk
No highly uncertain or unknown risks to the human environment were identified during analysis of the Proposed Action.

6. Degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration
The Proposed Action neither establishes a precedent for future BLM actions with significant effects nor represents a decision in principle about a future consideration.

7. Whether the action is related to other actions with individually insignificant but cumulatively significant impacts
No individually or cumulatively significant impacts were identified for the Proposed Action. Any adverse impacts identified for the Proposed Action, in conjunction with any adverse impacts of other past, present, or reasonably foreseeable future actions will result in negligible impacts to natural and cultural resources.

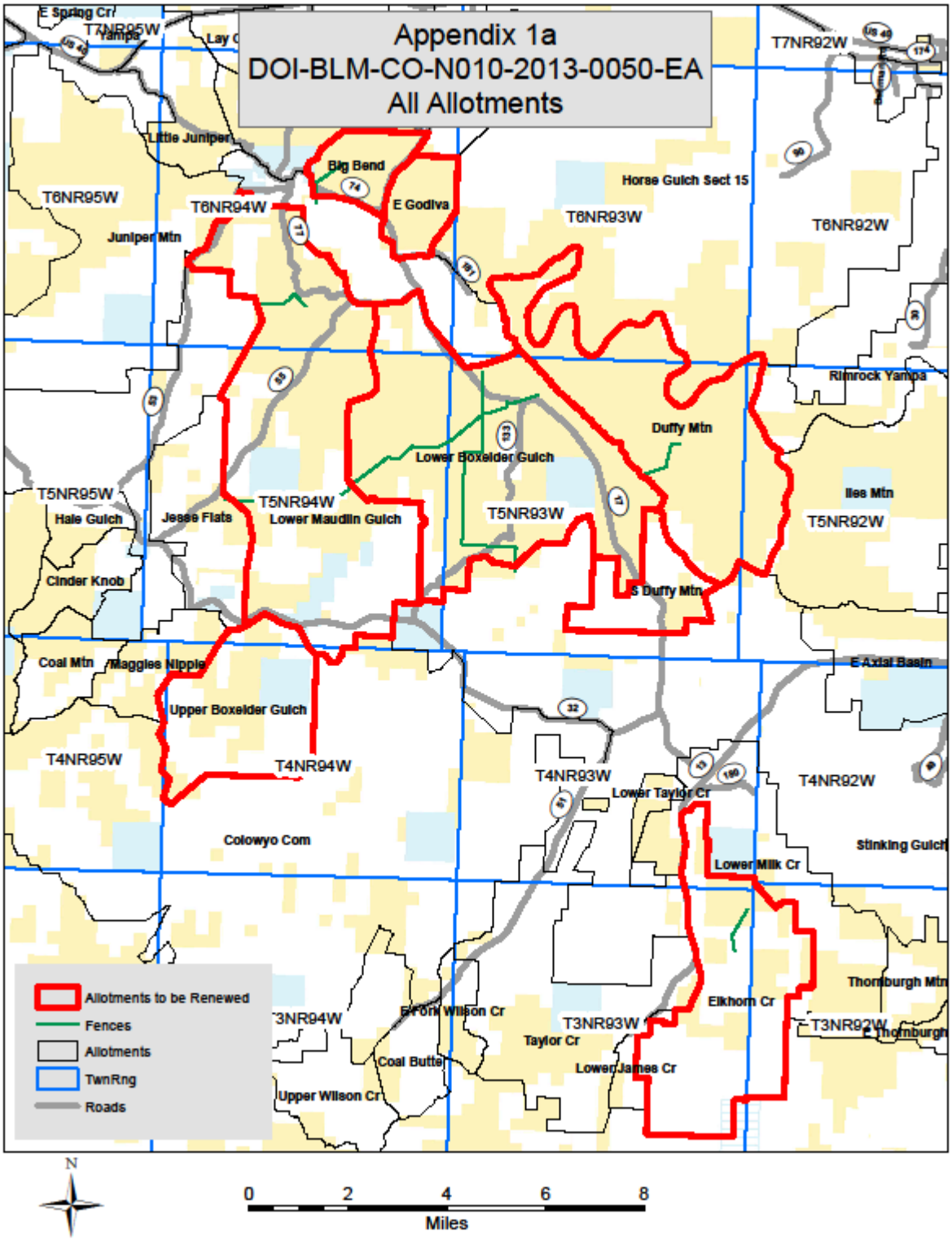
8. Degree to which the action may adversely affect district, sites, highways, structures, or objects listed on the National Register of Historic Places or may cause loss or destruction of significant scientific, cultural, or historical resources:
There would be no loss or destruction to these resources. A cultural resources study is initiated prior to any action considered and undertaking under Section 106 of the National Historic Preservation Act. Any adverse effects to Historic Properties are mitigated in consultation with the Colorado Office of Archaeology and Historic Preservation (SHPO).

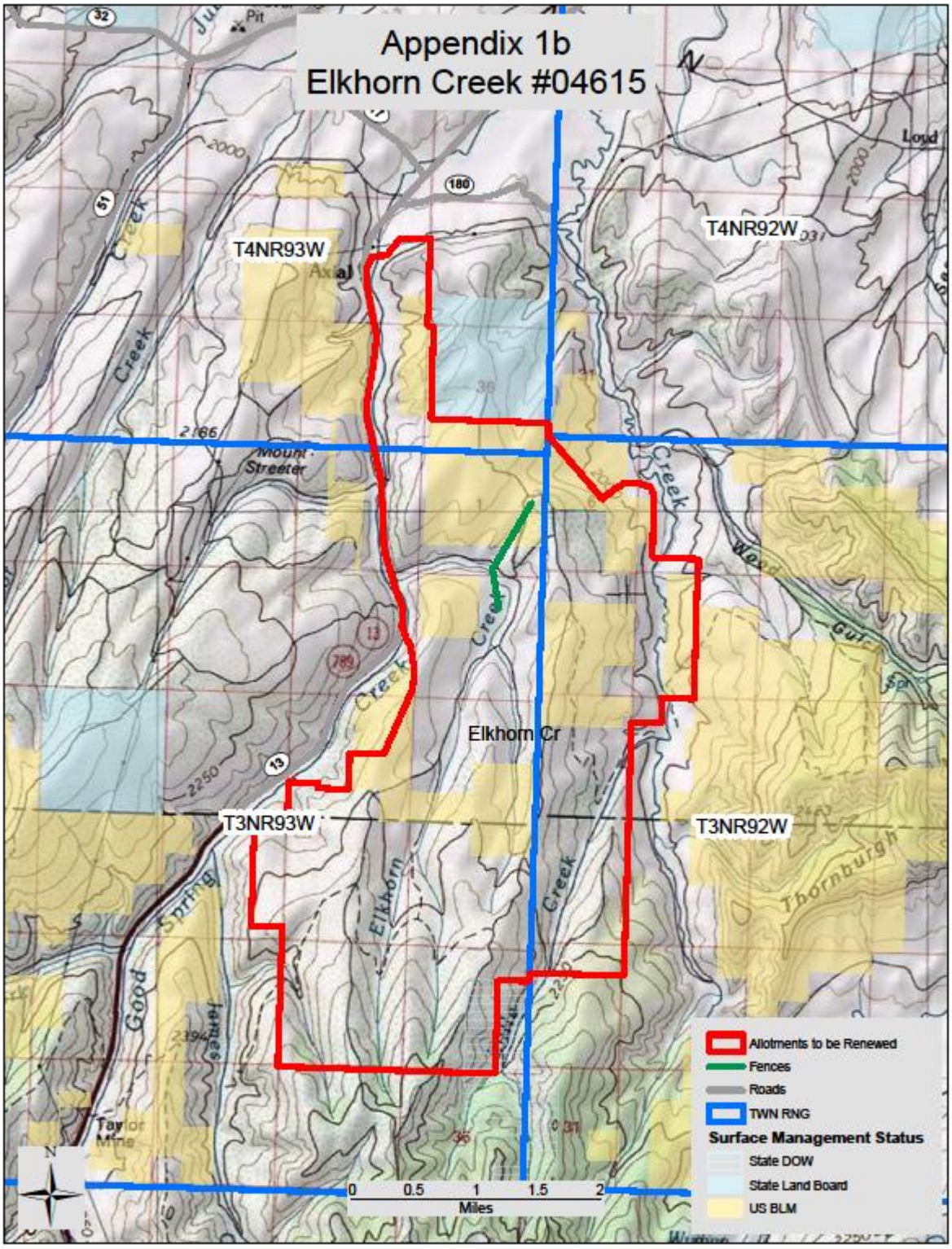
9. Degree to which the action may adversely affect an endangered or threatened species or its critical habitat
There are no threatened or endangered species or habitats for such species present within these allotments.

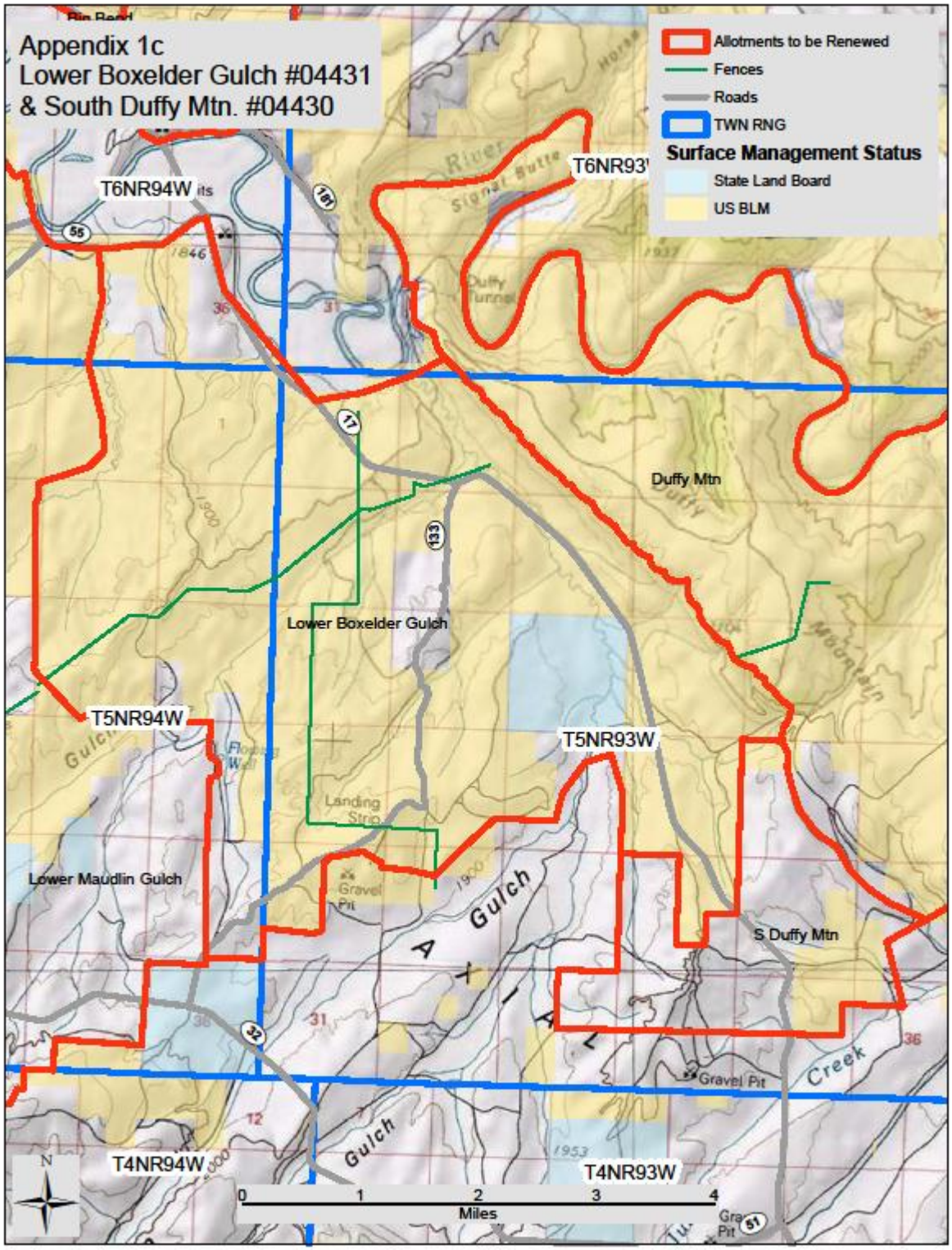
10. Whether the action threatens a violation of federal, state, or local environmental protection law
The Proposed Action violates no federal, state, or local environmental protection laws.

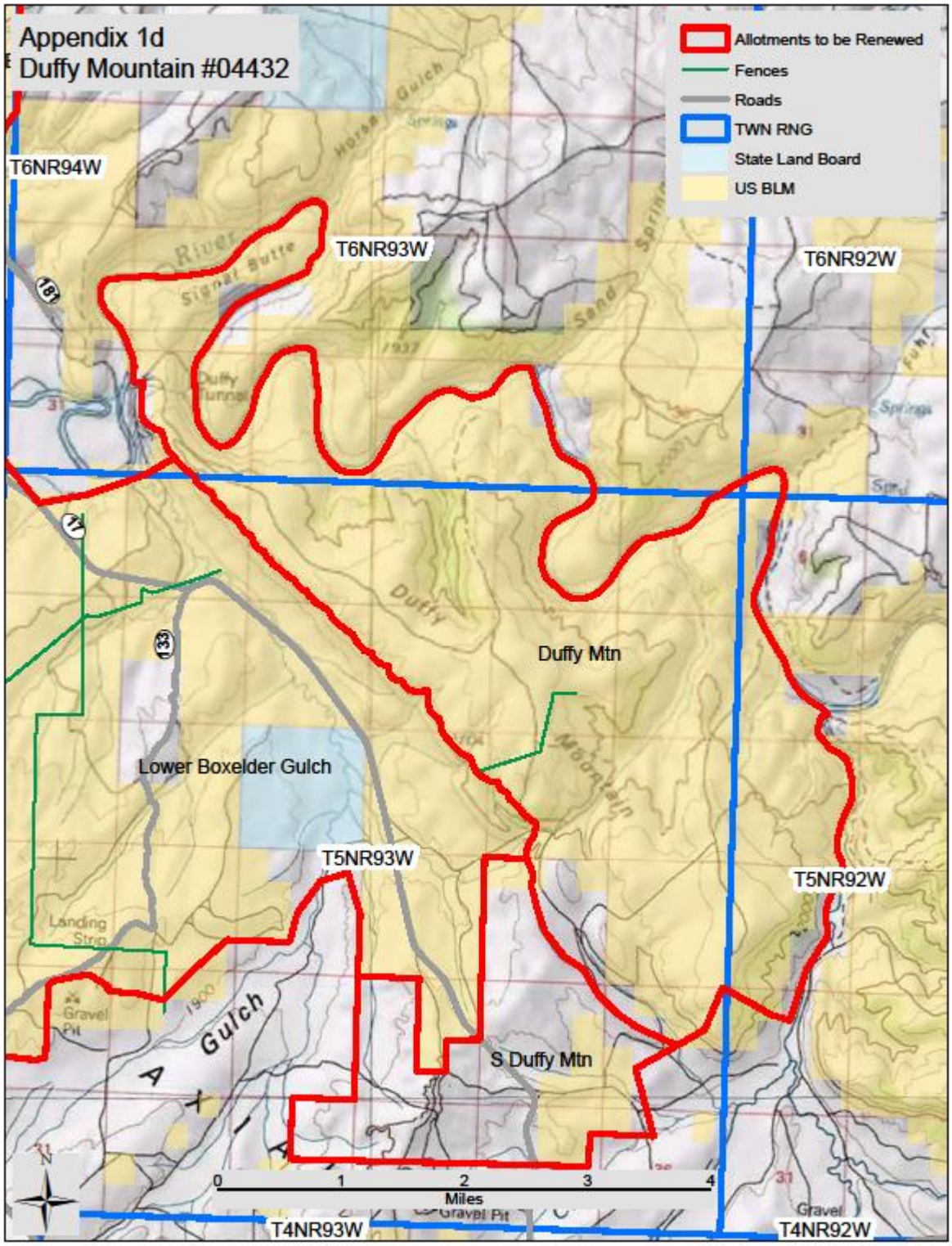
SIGNATURE OF AUTHORIZED OFFICIAL: _____
Wendy Reynolds, Field Manager

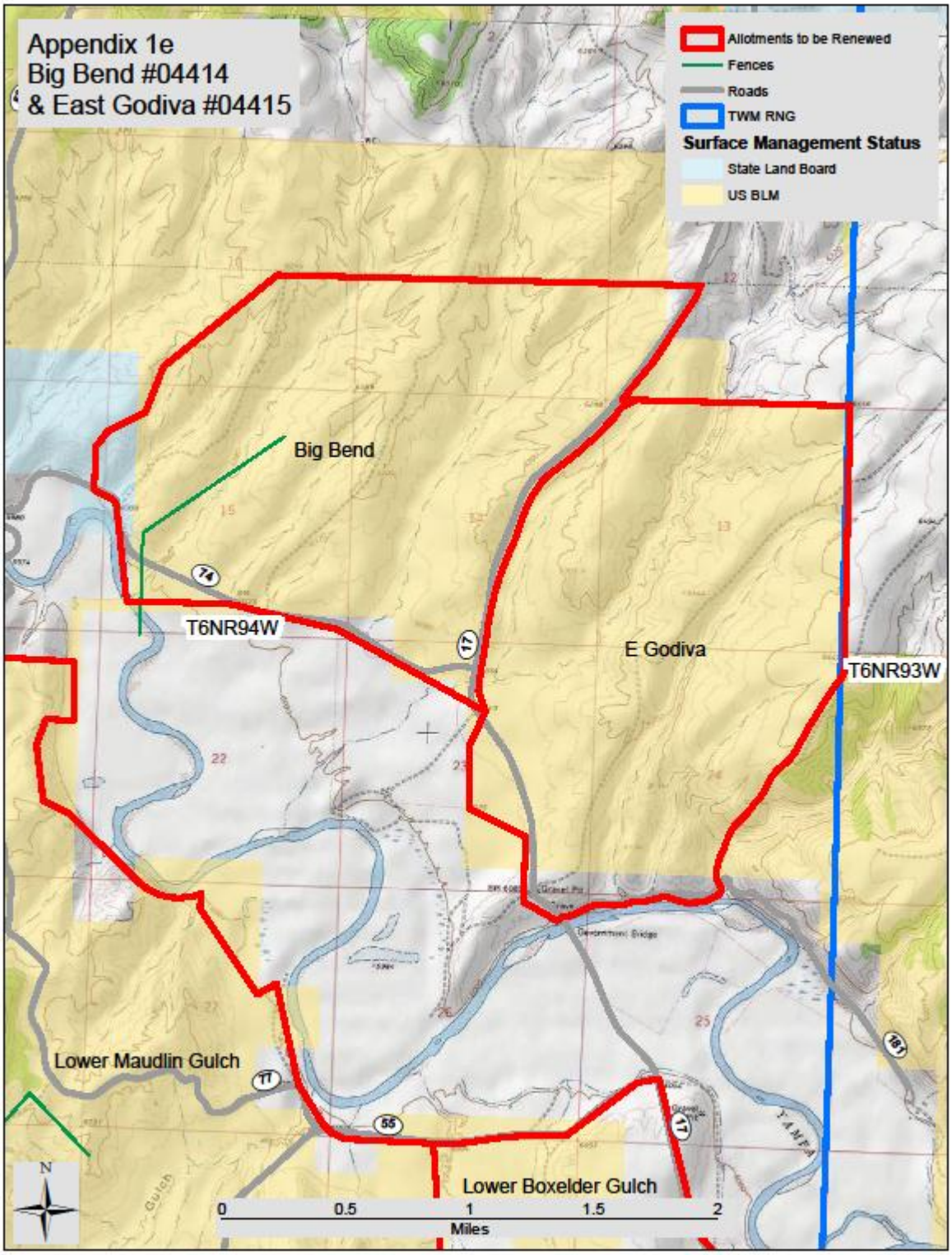
DATE SIGNED: 7/5/15

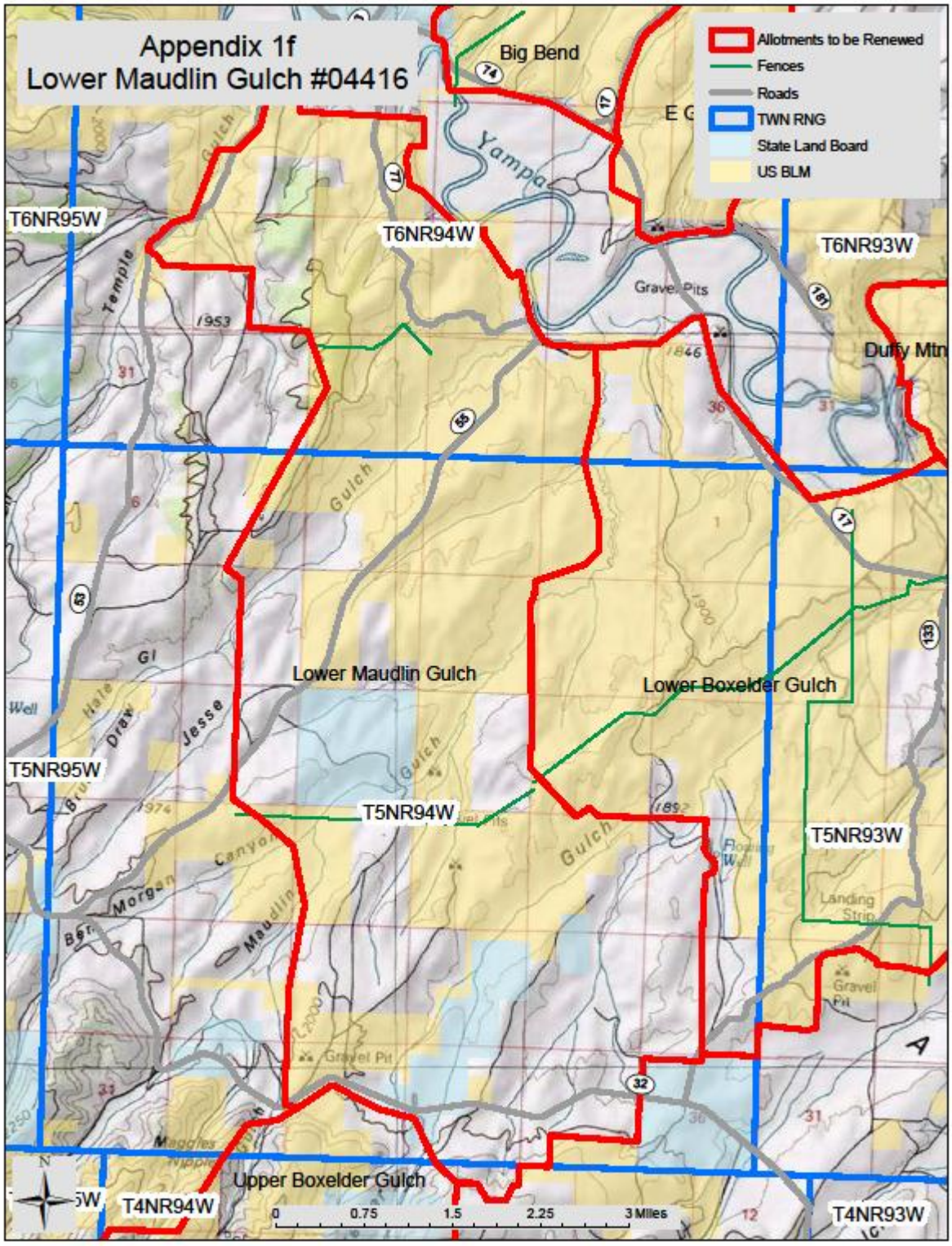

Appendix 1a
DOI-BLM-CO-N010-2013-0050-EA
All Allotments
E Spring Cr
T7NR95W
Yampa
T7NR92W
Little Juniper
Big Bend
E Godiva
Horse Gulch Sect 15
T6NR95W
T6NR94W
T6NR93W
T6NR92W
Juniper Mtn
Rimrock Yampa
Duffy Mtn
Lower Boxelder Gulch
T5NR95W
T5NR94W
T5NR93W
T5NR92W
Hale Gulch
Jesse Flats
Lower Maudlin Gulch
Ilse Mtn
Cinder Knob
S Duffy Mtn
Coal Mtn
Maggies Nipple
E Axial Basin
Upper Boxelder Gulch
T4NR95W
T4NR94W
T4NR93W
T4NR92W
Lower Taylor Cr
Colowyo Com
Stinking Gulch
Lower Milk Cr
Thornburgh Mtn
Elkhorn Cr
T3NR94W
T3NR93W
T3NR92W
E Thornburgh
Taylor Cr
Coal Butte
Lower James Cr
Upper Wilson Cr
Allotments to be Renewed
Fences
Allotments
TwnRng
Roads
N
0
2
4
6
8
Miles

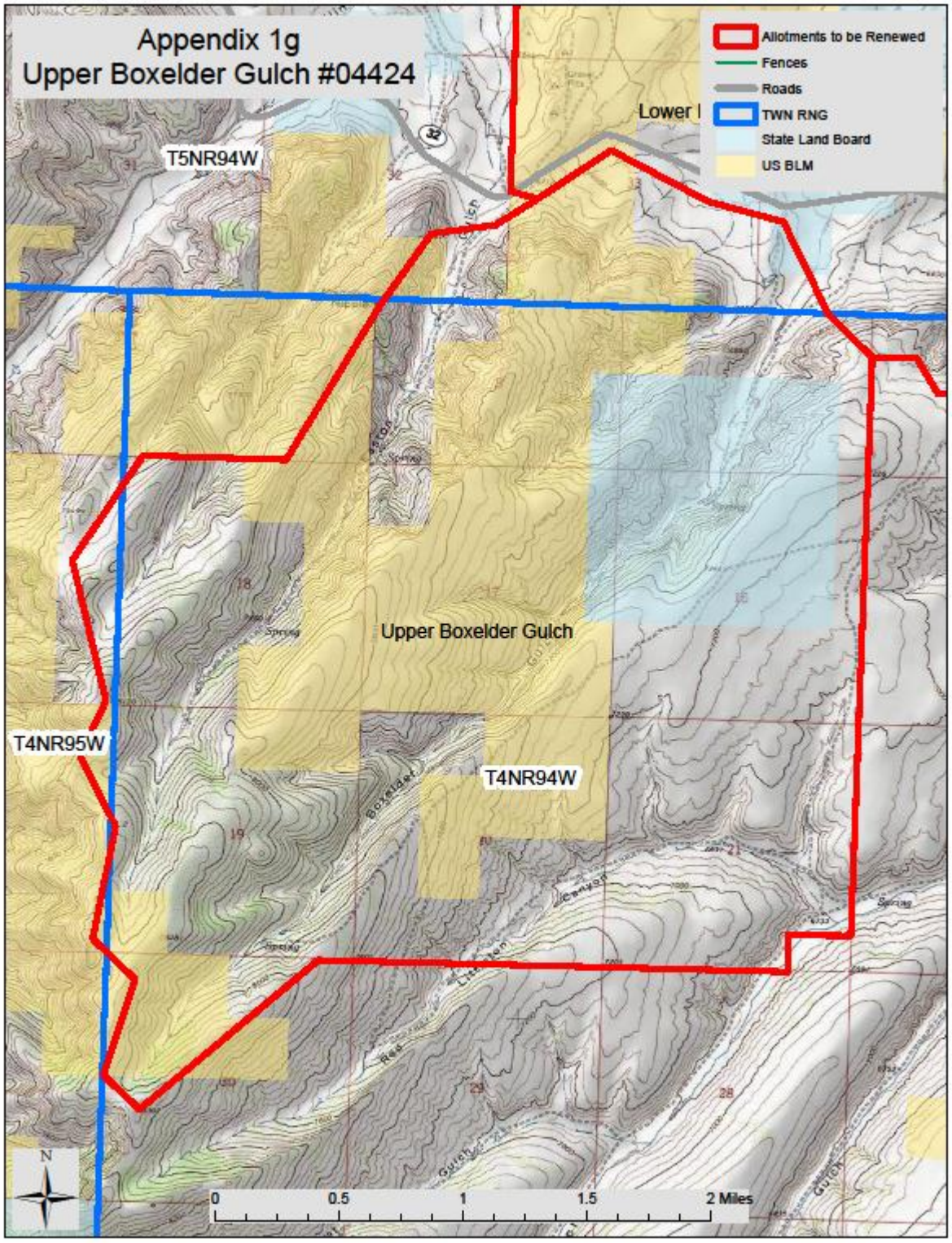

Appendix 1b
Elkhorn Creek #04615
T4NR93W
T4NR92W
T3NR93W
T3NR92W
Elkhorn Cr
Mount Streeter
Thornburgh
Allotments to be Renewed
Fences
Roads
TWN RNG
Surface Management Status
State DOW
State Land Board
US BLM
0 0.5 1 1.5 2
Miles


Appendix 1c
Lower Boxelder Gulch #04431
& South Duffy Mtn. #04430
Allotments to be Renewed
Fences
Roads
TWN RNG
Surface Management Status
State Land Board
US BLM
T6NR94W
T6NR93W
Duffy Mtn
Lower Boxelder Gulch
T5NR94W
T5NR93W
Lower Maudlin Gulch
S Duffy Mtn
Gravel Pit
T4NR94W
T4NR93W
Miles
0
1
2
3
4
N


Appendix 1d
Duffy Mountain #04432
Allotments to be Renewed
Fences
Roads
TWN RNG
State Land Board
US BLM
T6NR94W
T6NR93W
T6NR92W
Duffy Mtn
Lower Boxelder Gulch
T5NR93W
T5NR92W
S Duffy Mtn
Gulch
Miles
0
1
2
3
4
T4NR93W
T4NR92W


Appendix 1e
Big Bend #04414
& East Godiva #04415
Allotments to be Renewed
Fences
Roads
TWM RNG
Surface Management Status
State Land Board
US BLM
Big Bend
T6NR94W
E Godiva
T6NR93W
Lower Maudlin Gulch
Lower Boxelder Gulch
N
0
0.5
1
1.5
2
Miles


Appendix 1f
Lower Maudlin Gulch #04416
Allotments to be Renewed
Fences
Roads
TWN RNG
State Land Board
US BLM
Big Bend
T6NR95W
T6NR94W
T6NR93W
Duffy Mtn
Lower Maudlin Gulch
Lower Boxelder Gulch
T5NR95W
T5NR94W
T5NR93W
Upper Boxelder Gulch
T4NR94W
T4NR93W
0 0.75 1.5 2.25 3 Miles


Appendix 1g
Upper Boxelder Gulch #04424
Allotments to be Renewed
Fences
Roads
TWN RNG
State Land Board
US BLM
T5NR94W
Upper Boxelder Gulch
T4NR95W
T4NR94W
N
0
0.5
1
1.5
2 Miles

ATTACHMENT #2
DOI-BLM-CO-N010-2013-0050-EA
BACKGROUND CHRONOLOGY

March 1935 – Mr. Harry Kourlis made a request to graze winter range in Axial Basin because the range he had applied for north of Rangely was extremely overstocked. He stated that he had grazed his sheep in Axial Basin for the preceding three winters, using public domain and feeding his sheep.

September 1936 – The Regional Grazier stated in a letter to H. Kouris "where there is an application for feeding operation presented to the Board, the Division of Grazing makes an investigation of the necessary National Range needed in the feeding of the hay and pass on the application. Such use of National Range does not establish any priority. When you purchase your hay, please make application to the Grazing Service for range necessary to feed it and we will decide on the National Range for which you will be licensed. You are not to use the National Range until a license has been issued stating the range allowed, as such use will be considered trespass."

November 1936 – The existing license holders in Axial Basin agreed that it was all right to give Harry Kourlis a temporary license for the winter for 2,200 sheep. They wanted to make it clear that it was temporary.

August 1937 – Harry Kourlis was given another license for 2,200 sheep for the winter of '37-'38. The license was not to be issued until Kourlis provided proof that he had purchased 150 tons of hay. Without the purchase of hay, no license was to be issued.

December 1937 – Harry Kourlis applies for additional land to be added to the land he was already approved to feed on.

March 1938 – Harry Kourlis trespassed for sheep on Duffy Mountain. Letter stated "this is adjudicated cattle range, allotted for the use of cattle and for which you have no license to use."

March 1938 – The Grazing Service rejected application from Harry Kourlis for spring and fall sheep use in Axial Basin "because it is not seasonally proper use of that range."

April 1938 – The Grazing Service approved application from Harry Kourlis for spring and fall sheep use in Axial Basin and rejected application for winter use.

April 1938 – H. Kourlis appeals rejection.

April 1938 – The Board reconsiders but continues to reject winter application. Reason: insufficient Federal Range to satisfy Class I properties.

November 1938 – Board approves Kourlis for winter use '38-39. The use area now includes Duffy Mountain.

1938 – Evert Brown of Region 8, Grazing District 1 conducted a Detail of Control, Character, Production, Use and Dependency of Lands for Harry Kourlis. He noted that "Winter range over utilized due to feeding on range."

1939 – Meetings between Sweeney, Kourlis and Seymour (Grazing District). It appears Kourlis is making arrangements with these parties on areas within the Basin he can use. It is clear sheep are to be off the allotment by April 1, 1939 and that the agreement is temporary and in no way final or permanent.

February 1939 – The Advisory Board recommends that Kourlis be given grazing privileges from 12/01 to 03/15 and from 05/01 to 10/31 in Axial Basin.

April 1939 – Letter from Grazier Aide to Kourlis states that it appears that they are making arrangements different from those agreed to by the Grazing District and the board wanted a meeting to get some "definite understanding as to just what division is going to be recognized between you folks."

December 1941 – Since the parties could not agree to a division line, the Grazing Board established one.

December 1945 – Tom Watt writes to Harry Kourlis "This letter is your authority to run 2,450 sheep from December 1 to March 31, 1946 on your winter allotment and 250 tons of hay to be fed during winter grazing season on the Gossard and Duffy Ranches."

January 1951 – Memorandum from Sydney Whetstone: "…it was agreed that Mr. Kourlis be allowed to use on top of the south rim of Duffy Mountain, but not any further north that the main rim along the full length of the said mountain, it being further understood and agreed that Mr. Kourlis is not to use the top of Duffy Mountain or any portion of the Duffy Mountain area that slopes toward the Yampa River. …It is further agreed that Mr. Kourlis is allowed to use the west end of Duffy Mountain from the tunnel north to the Yampa River; that in case also he is not to use the top of the mountain but merely the west slope of the mountain; that Mr. Kourlis use on Duffy Mountain is to be made during the month of March and that the sheep must be off the mountain by April 1.

1955 – Axial Basin Unit and Godiva Unit are licensed to Patrick Sweeney for 247 head of cattle from 10/1 through 10/31; 200 head of cattle from 4/16 through 4/30; 347 head of cattle from 5/1 through 6/30; and 100 head of cattle from 7/1 through 9/30.

December 1956 – Letter from the Sweeny Brothers to Grazing District: "It was fully agreed upon by Kourlis and the Board when he came in there that he was to use this ground more or less as a place to feed. It was never given to Kourlis as a private allotment and he was also supposed to move off as soon as the snow went in the spring and stay off which he does not do any more."

April 1959 – Kourlis acquires grazing rights from Ruth Duffy for three years.

May 1963 – Kourlis acquires Jensen lease.

April 1965 – Kourlis acquires Streeter Coal Company lease

1966 – BLM issues a permit for a Range Improvement Application to Kourlis for three hay storage facilities and one sheep holding facility in the Lower Boxelder Gulch Allotment.

December 1971 – Kourlis acquires Gossard lease.

1973 – Big Bend, Lower Maudlin Gluch, Upper Jubb Creek and Duffy Mountain Allotments are transferred from Patrick Sweeny to Roger Pilgrim.

1975 – The Colowyo Coal Company purchased the Millken Land and Cattle Company. Along with this base went the Upper Taylor Creek #04610 (450 head, 5/10 to 7/4), Stinking Gulch, #04608 (125 cows 6/1-7/4), Lower Taylor Creek #04613 (520 cows 5/10-10/31) and Iles Mtn #04603 (516 cows 5/21-10/5) Allotments. Homer Wilson is authorized representative.

1978 – The Colowyo Coal Company bought from Forrest and Iris Loper all of their ranch holdings in Moffat County. Along with this base went the East Axial Basin Allotment #04606, 210 head from 5/1-10/31

1980 – James Sterling transfers his grazing preference to Robert Sweeny via a base property sale. The allotments transferred include Lower Boxelder Gulch, East Godiva and Upper Boxelder Gulch Allotments.

1981 – William Gossard transferred to Homer Wilson Axial Basin Ranch – c/o Homer Wilson

1984 – First Interstate Bank takes title to base property owned by Bob Sweeney. They take non-use until such time as they can find someone to run cows on the permit.

July 1985 – Memo from BLM Range Conservationist states "wording in the letter written May 2, 1967, that these (hay) structures were constructed without a permit and that a permit was issued to make them legal. The stackyards and enclosures…were built without authorization of the BLM…therefore the structures are in trespass. I question the legality of the improvements authorized under Permit 4067…Recommendations: All hay stacks must be moved to private land and all feeding must be done on private land. No feeding will be allowed on BLM administered public land."

The 1985 permit which authorized an additional nine hay storage facilities in the Lower Boxelder Gulch Allotment specifies that these structures are for supplemental or emergency feeding when necessary and that they are temporary and may be discontinued at the discretion of the Area Manager.

December 1985 – Updated feeding Agreement and Authorization. Concerns had been raised by the Little Snake Resource Area specialists over the question of supplemental versus maintenance feeding. New agreement was drawn up. Haystack and support facilities were to be removed and

no further hay storage was to occur on public lands within Duffy Mountain Allotment. Feeding sites were to be ¼ mile from stacks and were to be moved daily.

1988 -W. R. Grace and Co. and M. S. Hanna Co. partnerships, which own Colowyo Coal Company, Axial Basin Ranch Company, HG Coal Company and Hayden Gulch West Coal Company decided to consolidate the management of all agricultural properties under one person at Colowyo Coal Company.

1988 – Dale Thompson (authorized rep for Axial Bain Ranch Co.) was concerned about over grazing in Axial Basin. Lack of water, initial overallocation, and the Texas oil field were among his list of concerns. Maudlin Gulch was currently leased to Jerry Schell.

April 1991 – Allotment Use Agreement states: Marion Dudek owns the private base land in Lower Maudlin Gulch but leases BLM grazing to Sam McIntyre.

The "Old Utah International hay meadows" will remain the base property for the Big Bend Allotment. They are owned and permitted to Marion Dudek. The "Old Utah International hay meadows" will remain the base property for the Duffy Mountain Allotment. Owned and permitted to Marion Dudek

East Godiva was be transferred from Sam McIntyre to Marion Dudek.

1993 – Axial Basin Coordinated Resource Management Plan (CRMP) is put into place. It was developed "in an effort to resolve the identified conflict and to provide a management system for three landowners on Lower Boxelder Gulch and Lower Maudlin Gulch Allotments. The objective of the plan is to improve the natural resource base and bring wildlife and livestock grazing demands in balance with forage production." This plan was put into effect without any mention, consideration, or acknowledgement of the winter storage and feeding of hay on public land for Kourlis sheep.

The CRMP initiated numerous range improvements including water developments, vegetation treatments, and fencing that created a four pasture configuration using the Lower Maudlin Gulch and Lower Boxelder Gulch Allotments. Both allotments have a north and south pasture.

1997 – Marion Dudek sells his private base property to Colowyo Coal Company. Colowyo Coal Company leases the grazing rights to Leon Earle and Tom Kourlis.

1998 – The original Axial Basin CRMP expired April 30, 1998. The Technical Review Team agreed to extend it for an additional five years with the idea of expanding the CRMP area and efforts.

2003 – The Axial Basin CRMP extension expired. No additional extensions were proposed; since that time livestock grazing in Axial Basin has continued within the guidelines of the Axial Basin CRMP.

2004 - An update for the Axial Basin CRMP stated that since the initial implementation of the CRMP, there have been numerous resource improvements, including: positive response of riparian and upland vegetation vigor, diversity and condition of vegetation, benefitting wildlife as well as livestock. In addition, the coordinated weed control effort has been extremely successful.

2005 – 2010 - Monitoring vegetation resources in 2005 and 2010 has shown an overall upward trend in the allotments under the Axial Basin CRMP, see graphs in 1.3.1 Monitoring Data (trend defined as change in ecological status is described as "toward (upward)" or "away from (downward)" from the potential natural community or desired plant community).

2012 – Mr. Kourlis presented BLM with a study conducted by Dr. Roy Roath who at the time of the CRMP was a Colorado State University Rangeland Extension Technical Advisor and a key player in the development and implementation of the CRMP. The conclusion of Dr. Roath's Axial Basin Sagebrush Analysis is as follows. *"Sampling the Axial Basin in the winter and spring of 2012 showed that, in general, the use on sagebrush was light to moderate. The lower basin and the upper basin showed overall light use, with the exception of two transects – one in each area that showed heavier use. Each of those transects appear to have special circumstances that do not reflect broader conditions or use.*

The use in middle basin was on the average moderate with more use on sagebrush reflected by lower form class numbers and somewhat greater hedging numbers. This is reflective of two relationships: 1) consistent use because of its juxtaposition in the middle of the Basin causing the livestock to frequent the area because of the rotation and 2) the use that occurred related to the extraordinary snowfall in the winter of 2010 – 2011.

Grazing relationships are driven by relative factors. Herbaceous plant response is a function of frequency of use, intensity of use and most importantly the opportunity of the plant to regrow and recover. Shrub response is driven by the proportion of terminal leaders browsed and by frequency of use. In each case, winter use by either livestock or big game is less detrimental than growing season use, because the material removed can be regenerated in the growing season".

2012 – BLM conducted inventory of hay stackyards in Axial Basin. Documented within the Lower Maudlin Gulch, Lower Boxelder Gulch, and South Duffy Mtn. Allotments there thirteen stackyards constructed on public land or on private land but directly adjacent to public lands. Also found were five additional stackyards on land managed by Colorado State Land Board or private lands outside of but adjacent to the above mentioned allotments. Some of the originally permitted (1966, 1985) stackyards do not exist in their original locations. There is no permit or range improvement file for the stackyards in Lower Maudlin Gulch and South Duffy Mtn. Allotments.

ATTACHMENT #3
DOI-BLM-CO-N010-2013-0050-EA
TERMS AND CONDITIONS

Standard Terms and Conditions

1) Grazing permit or lease terms and conditions and the fees charged for grazing use are established in accordance with the provisions of the grazing regulations now or hereafter approved by the Secretary of the Interior.

2) They are subject to cancellation, in whole or in part, at any time because of:
   a. Noncompliance by the permittee/lessee with rules and regulations;
   b. Loss of control by the permittee/lessee of all or a part of the property upon which it is based;
   c. A transfer of grazing preference by the permittee/lessee to another party;
   d. A decrease in the lands administered by the Bureau of Land Management within the allotment(s) described;
   e. Repeated willful unauthorized grazing use;
   f. Loss of qualifications to hold a permit or lease.

3) They are subject to the terms and conditions of allotment management plans if such plans have been prepared. Allotment management plans MUST be incorporated in permits and leases when completed.

4) Those holding permits or leases MUST own or control and be responsible for the management of livestock authorized to graze.

5) The authorized officer may require counting and/or additional or special marking or tagging of the livestock authorized to graze.

6) The permittee's/lessee's grazing case file is available for public inspection as required by the Freedom of Information Act.

7) Grazing permits or leases are subject to the nondiscrimination clauses set forth in Executive Order 11246 of September 24, 1964, as amended. A copy of this order may be obtained from the authorized officer.

8) Livestock grazing use that is different from that authorized by a permit or lease MUST be applied for prior to the grazing period and MUST be filed with and approved by the authorized officer before grazing use can be made.

9) Billing notices are issued which specify fees due. Billing notices, when paid, become a part of the grazing permit or lease. Grazing use cannot be authorized during any period of delinquency in the payment of amounts due, including settlement for unauthorized use.

10) Grazing fee payments are due on the date specified on the billing notice and MUST be paid in full within 15 days of the due date, except as otherwise provided in the grazing permit or lease. If payment is not made within that time frame, a late fee (the greater of $25 or 10 percent of the amount owed but not more than $250) will be assessed.

11) No member of, or Delegate to, Congress or Resident Commissioner, after his/her election of appointment, or either before or after he/she has qualified, and during his/her continuance in office, and no officer, agent, or employee of the Department of Interior, other than members of Advisory committees appointed in accordance with the Federal Advisory Committee Act (5 U.S.C. App. 1) and Sections 309 of the Federal Land Policy and Management Act of 1976 (43 U.S.C. 1701 et seq.) shall be admitted to any share or part in a permit or lease, or derive any benefit to arise therefrom; and the provision of Section 3741 Revised Statute (41 U.S.C. 22), 18 U.S.C. Sections 431-433, and 43 CFR Part 7, enter into and form a part of a grazing permit or lease, so far as the same may be applicable.

Common Terms and Conditions

A) Grazing use will not be authorized in excess of the amount of specified grazing use (AUM number) for each allotment. Numbers of livestock annually authorized in the allotment(s) may be more or less than the number listed on the permit/lease within the grazing use periods as long as the amount of specified grazing use is not exceeded.

B) Unless there is a specific term and condition addressing utilization, the intensity of grazing use will insure that no more than 50% of the key grass species and 40% of the key browse species current year's growth, by weight, is utilized at the end of the grazing season for winter allotments and the end of the growing season for allotments used during the growing season. Application of this term needs to recognize recurring livestock management that includes opportunity for regrowth, opportunity for spring growth prior to grazing, or growing season deferment.

C) Maintain all range improvements in functioning condition. Failure to maintain range improvements to BLM standards in accordance with signed cooperative agreements and/or range improvement permits may result in the suspension of the annual grazing authorization, cancellation of the cooperative agreement or range improvement permit, and/or the eventual cancellation of this permit/lease.

D) Salt and/or mineral supplements shall be place at least one-quarter mile from water sources or in such a manner as to promote even livestock distribution within the allotment or pasture.

E) Pursuant to 43 CFR 10.4(g), the holder of this authorization must notify the authorized officer, by telephone, with written confirmation, immediately upon the discovery of human remains, funerary items, sacred objects, or objects of cultural patrimony. Further,

pursuant to 43 CFR 10.4(c) and (d), you must stop activities in the vicinity of the discovery and protect it for 30 days or until notified to proceed by the authorized officer.

The operator is responsible for informing all persons who are associated with the allotment operations that they will be subject to prosecution for knowingly disturbing historic or archaeological sites, or for collecting artifacts. If historic or archaeological materials are encountered or uncovered during any allotment activities or grazing activities, the operator is to immediately stop activities in the immediate vicinity and immediately contact the authorized officer. Within five working days the authorized officer will inform the operator as to:

-whether the materials appear eligible for the National Register of Historic Places;
-the mitigation measures the operator will likely have to undertake before the identified area can be used for grazing activities again.

If paleontological materials (fossils) are uncovered during allotment activities, the operator is to immediately stop activities that might further disturb such materials and contact the authorized officer. The operator and the authorized officer will consult and determine the best options for avoiding or mitigating paleontological site damage.

F) No hazardous materials/hazardous or solid waste/trash shall be disposed of on public lands. If a release does occur, it shall immediately be reported to this office at (970) 826-5000.

G) The permittee/lessee shall provide reasonable administrative access across private and leased lands to the BLM and its agents for the orderly management and protection of public lands.

H) Application of a chemical or release of pathogens or insects on public lands must be approved by the authorized officer.

I) The terms and conditions of this permit/lease may be modified if additional information indicates that revision is necessary to conform with 43 CFR 4180.

ATTACHMENT #4
DOI-BLM-CO-N010-2013-0050-EA
Feeding Agreement & Authorization

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Little Snake Field Office
455 Emerson Street
Craig, Colorado 81625-1129
http://www.blm.gov/co/st/en.html

In Reply Refer To: 4130.3-2
0501040

FEEDING AGREEMENT AND AUTHORIZAITON
IN THE
LOWER BOXELDER GULCH #04431, LOWER MAUDLIN GULCH #04416, AND SOUTH DUFFY MOUNTAIN #04430 ALLOTMENTS

The practice, level, and distribution of supplemental feeding conducted by the permittee shall be determined by the amount of available winter forage combined with the need for sustainable livestock operations, the maintenance of satisfactory ecological conditions, and proper land management.

The following actions, terms, and conditions are a revised version of the original supplemental feeding agreement signed 03/31/86. This agreement pertains to the grazing authorization for the Harry Kourlis Ranch, authorization #0501040.

1. Supplemental feeding is authorized in areas within one tenth of a mile of previously documented stackyard locations on public lands (see map). Existing stackyards shall be removed, with the exception of one wooden pole per site for feeding site identification. Storage of supplemental feed is not authorized on public lands.

2. Supplemental feeding is authorized when allocated forage is limited due to snow or other climatic conditions, thus limiting nutritional value of allocated range forage.

3. Supplemental feeding shall only authorize the use of high protein alfalfa hay, alfalfa products, corn, or other protein rich commercially available products in the form of tubs or blocks. Feeding of straw or grass hay is not authorized.

4. Transportation of supplemental feed to feeding sites using mechanical means is limited to existing roads and trails, unless snow cover is greater than 24 inches.

5. Feeding sites may only be used for five consecutive days during each grazing season between December 1st and March 1st.

6. No feeding will be authorized after March 1st.

7. All supplemental feed shall be certified weed free.

8. At the end of the annual grazing period on the Lower Boxelder Gulch and Lower Maudlin Gulch Allotments a report of the supplemental feeding performed must be submitted to the LSFO.

This report shall contain the dates of feeding, locations of feeding, type of feed, and quantity of feed per occurrence (preferably in weight).

9. Emergency Feeding shall be authorized in accordance with BLM Handbook H-4130-1 Authorizing Grazing Use which states: "Emergency feeding may be required as a result of an unforeseen event which limits the forage available for livestock. Feeding of hay as a result of fire, flood, or snow is an example. Emergency feeding is accepted on public lands for short periods while the emergency exists or until the livestock can be removed.

When emergency feeding occurs on the public lands, the authorized officer must evaluate the circumstances to determine if the permits or leases should be suspended in whole or in part, or if action is needed to close the allotment to livestock grazing. (See 43 CFR 411.3-2(a) and 4310.3-3(c).)"

Once this agreement is final the terms and conditions described above shall be a part of the Harry Kourlis Ranch permit #0501040 and the normal annual operation of the Lower Boxelder Gulch #04431, Lower Maudlin Gulch #04416, and South Duffy Mountain #04430 Allotments. This agreement shall remain in effect until revision or cancellation.

Any violation of this agreement shall be considered grounds for partial or complete cancellation of this supplemental feeding authorization after consultation, cooperation, and coordination with all parties involved.

In the event of authorization transfer to another operator, or similar action, this agreement does not convey any right or privilege to the operator to continue this or any similar supplemental feeding program with the consent of the BLM.

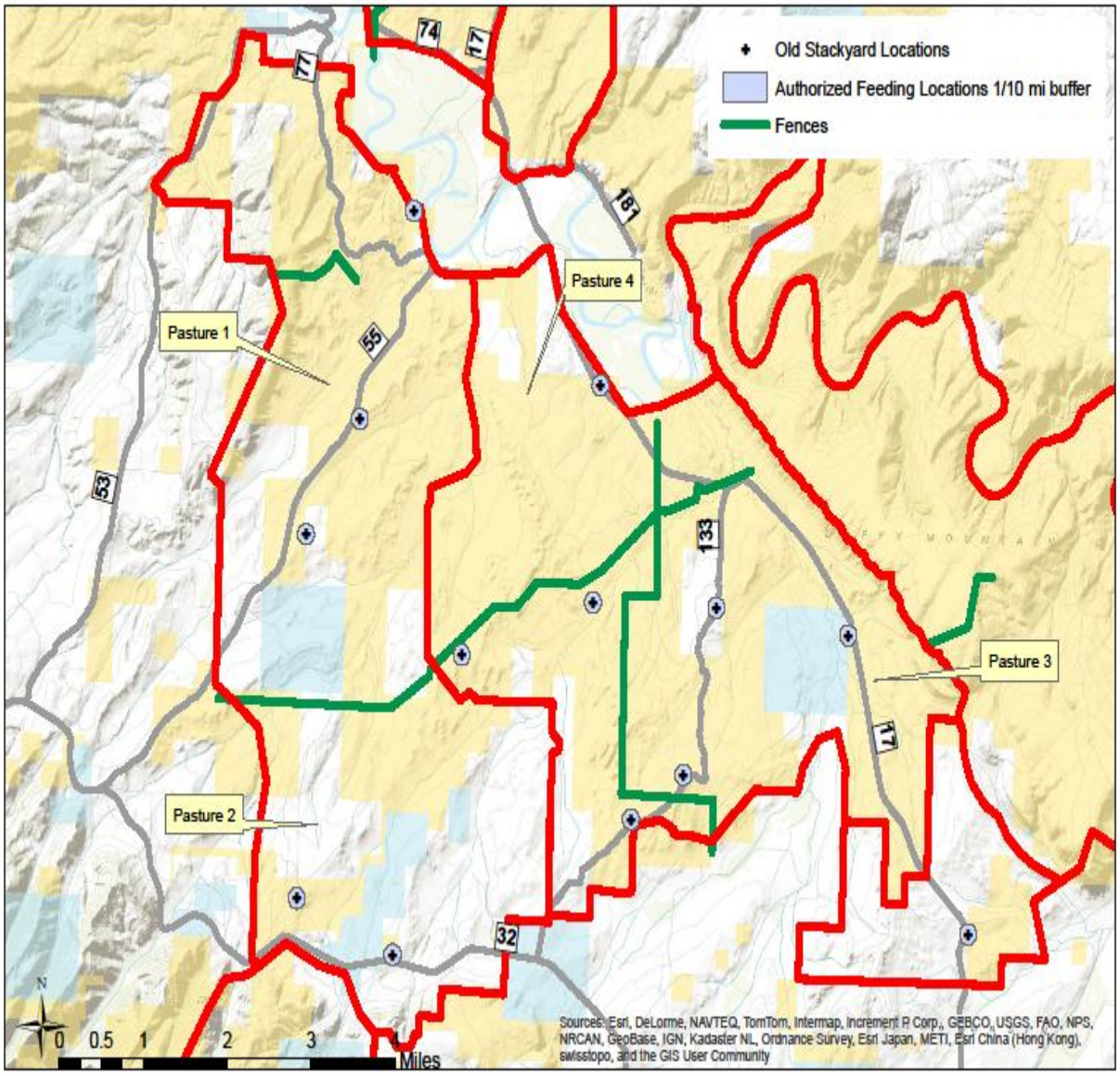
This agreement may be modified or cancelled by written notification from the BLM in accordance with present and subsequent land use plans following consultation, cooperation, and coordination with all parties involved.

I have reviewed this document and agree to implement/comply with the terms and conditions described herein.

Signed_____Date_____

I have reviewed this document and approve/authorize the terms and conditions described herein.

Signed_____Date_____


Old Stackyard Locations
Authorized Feeding Locations 1/10 mi buffer
Fences
Pasture 1
Pasture 2
Pasture 3
Pasture 4
74
17
77
181
55
53
133
17
32
N
0
0.5
1
2
3
Miles
Sources: Esri, DeLorme, NAVTEQ, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, and the GIS User Community