

FLAT TOP ALLOTMENT

Assessment of Standards for Rangeland Health

I. BACKGROUND

In 1997 the BLM in Idaho adopted a series of “Standards for Rangeland Health” in coordination with the Resource Advisory Committees. There are eight Standards, not all of which will apply to any one parcel of land. Each Standard establishes a goal that if reached implies a healthy situation and is further defined in terms of “indicators” that the Standard is or is not being met. A description of the Standards and the indicators can be found in the “Idaho Standards for Rangeland Health and Guidelines for Livestock Grazing Management of August, 1997” (copies available at the Shoshone BLM Office). It is exceedingly rare for all of the indicators for any Standard to agree as to whether or not the standard is being met. Therefore, information from all available sources will be used.

In 1998, the BLM began assessing Rangeland Health Standards by having multi-disciplinary teams inspect selected grazing allotments. This process was coordinated with affected permittees, State agencies having responsibility for managing land or resources, and interested publics to allow their participation in this process. During field inspections, qualitative information relative to the indicators of applicable Standards along with quantitative data on canopy cover as a measurement of vegetation cover, abundance and composition was collected. The Natural Resource Conservation Service’s (formerly Soil Conservation Service) ecological site descriptions use dry weight (production) for a measure of community composition. While each of these methods has its own values and weaknesses they are not directly comparable. The reader should be alerted to this fact and interpret the data accordingly.

This document is a summary of the data obtained from field inspections to evaluate the indicators for the Rangeland Health Standards and other available monitoring data. Qualitative assessment descriptions used to evaluate indicators in the field for Standards 1 (Watersheds), 4 (Native Plant Communities), and 5 (Seedings) are in Appendix 1. A revised assessment worksheet for Standards 1, 4, and 5 was implemented in 2005 to guide resource specialists to a rating of extreme to total; moderate to extreme; moderate; slight to moderate; or none to slight (see Appendix 1-1). These ratings refer to the degree of departure from ecological site description and/or ecological reference area.

In order to assess Standard 2 (Riparian Areas and Wetlands) and Standard 3 (Stream Channel/ Floodplain), the standard checklist in Appendix 3-2 is used. This checklist is a qualitative method of determining whether riparian areas are in Proper Functioning Condition (PFC). Descriptions guide the resource specialists to a rating of yes, no, or not applicable for Standards 2 and 3 (see Appendix 1-2).

A separate assessment form is used to evaluate Standard 6 (Exotic Plant Communities, Other Than Seedings), where applicable. In the case of the Flat Top Allotment, Standard 6 is not applicable.

The State of Idaho Division of Environmental Quality’s 303d designation of water quality limited streams list is used to evaluate Standard 7 (Water Quality).

The Natural Resource Conservation Service's (NRCS) ecological site descriptions (composition) and habitat evaluations for species present under current management will be used to evaluate Standard 8. Additional assessment descriptions used to evaluate sage-grouse habitat was added in 2000, revised in 2001, and is described in Appendix 1-3. These descriptions guide the resource specialist to a rating of suitable, marginal, or unsuitable habitat.

II. TABLE 1: ALLOTMENT INFORMATION

Field Office: Shoshone			Watershed Names/Numbers: Little Wood/17040221	
Allotment Name/Number: Flat Top/80308				
Public Land (Acres)			Streams on Public Land (miles): 17.3	
Upland: 28,065	Riparian: 232	Total: 28,297	Baugh Creek—0.2	
Date(s) of Field Assessment:			Burgess Creek—0.1	
6/18/2007			Cold Spring Creek—1.0	
6/20/2007			Dugway Canyon—0.8	
6/25/2007			Friedman Creek—4.8	
6/27/2007			East Fork Friedman Creek—1.2	
6/28/2007			High Five Creek—0.2	
6/23/2008			Little Fish Creek—1.1	
6/24/2008			Rough Canyon—2.3	
			South Fork Muldoon Creek—1.8	
			Timber Gulch—1.4	
			Trail Creek—0.5	
			Unnamed streams and tributaries—1.9	
Name of Permittee: Flat Top Grazing Association				
Assessment Participants (Name & Discipline or Interest):				
Dan Patten, Rangeland Management Specialist				
Bonnie Claridge, Wildlife Biologist				
Julie Hilty, Botanist				
Kasey Prestwich, Forester				

II. ALLOTMENT PROFILE

The Flat Top Allotment is comprised of 59,701 acres of inter-mixed BLM, State, Bureau of Recreation, and privately owned land in the Little Wood River drainage. The southernmost point of the allotment is about 4.5 miles northwest of Carey, Idaho, and the northernmost portion borders the Sawtooth and Challis National Forests about 20 miles north of Carey (see Appendix 2). The elevation ranges from about 4,975 feet where the Little Wood River exits the South Burgess Pasture to about 9,560 feet at the north end of the Friedman Creek Pasture. The allotment includes 10,535 acres of State Lands, 20,375 acres of privately owned land, 493 acres of Bureau of Reclamation Land, and 28,297 acres of public lands administered by the BLM, for a total of 59,700 acres. It is currently divided into 3 separate pastures—South Burgess, Lake Hills, and Friedman Creek—though they tend to be managed more as individual allotments, rather than in a particular rotation. The western boundary of the South Burgess Pasture is the divide between the Little Wood and Big Wood Rivers. The eastern boundary of the Friedman Creek Pasture is generally the divide between the Little Wood River and Fish Creek.

Cattle and sheep grazing are permitted from May 1 to November 30 with a total active preference of 1,000 sheep and 3,255 cattle AUMs. The original stocking level for the Flat Top Allotment was 1,675 cattle and 2,665 sheep AUMs. Under the Sun Valley Final Grazing Environmental Impact Statement (Sun Valley EIS), a conversion in kind of livestock was implemented to 3,255 cattle and 1,000 sheep AUMs with 85 sheep AUMs suspended.

According to the NRCS, the major ecological sites in this allotment include the following:

S&G Transects	Ecological Site
LH4	Clayey 12 – 16” (Alkali sagebrush/Idaho fescue)
LH5, LH8, FC1	Loamy 12 – 16” (Mountain big sagebrush/bluebunch wheatgrass)
FC6, FC9	Loamy 12 – 16” (Mountain big sagebrush/ Idaho fescue)
LH3	North Slope Clayey 16 – 20” (Low sagebrush/Idaho fescue)
SB1, SB4, LH2, FC2, FC5	North Slope Loamy 16 – 20” (Mountain big sagebrush/Idaho fescue)
SB5, FC10	North Slope Loamy 18 – 24” (Mountain big sagebrush/mountain snowberry/Idaho fescue)
SB3, SB6, LH6	South Slope Clayey 12 – 16” (Low sagebrush/bluebunch wheatgrass)
SB2, LH1, LH7, FC8	South Slope Gravelly 12 – 16” (Mountain big sagebrush/bluebunch wheatgrass)
FC3, FC4	Fractured North Slope 16 – 22” (Mountain big sagebrush/Idaho fescue)
FC7	Fractured South Slope 12 – 16” (Mountain big sagebrush/bluebunch wheatgrass)

Mountain big sagebrush, bluebunch wheatgrass, and Idaho fescue are the most dominant species in the allotment. Cheatgrass (*Bromus tectorum*), an invasive introduced annual, was found in some areas of the allotment and is common on some south-facing slopes. This species is dominant in a few small areas but not over the majority of the allotment. Diffuse knapweed (*Centaurea diffusa*), a noxious weed, was found in the allotment during the field assessment, but it was not common. Canada thistle (*Cirsium arvense*) was also found along some riparian areas in the allotment.

III. IDAHO RANGELAND HEALTH STANDARDS ASSESSMENT

The field assessment consisted of evaluating the ecological sites found in key areas within the allotment. An allotment summary of the data obtained from the field assessment for applicable Rangeland Health Standards is given hereafter. The indicators are ranked by determining the degree to which each site departs from what is expected for that site, based on the Ecological Site Descriptions. All indicators are not given equal weight in determining the overall rating for each site.

A. Standard 1 (Watersheds)

This Standard is designed to assess the physical stability of each site. Eleven indicators of watershed health were evaluated on each survey site. Table 2 provides a summary of watershed indicator ratings for each location. In determining vegetative cover during the site assessment, canopy cover for three layers—from the top layer to the ground—were recorded along a step-point transect. Cover values for this Standard are from only the top canopy layer to provide an aerial estimate of all cover components (vegetation, rock, bare soil, etc.) for soil surface protection. Therefore cover values for individual components will total 100%. Each site is

given a code that references the pasture in which the site is located and the number of the site (e.g. FC1 refers to the Friedman Creek Pasture, site 1; SB=South Burgess; and LH=Lake Hills).

Table 2: Watershed Indicator Summary

Indicator	Degree of Departure from Ecological Site Description and/or Ecological Reference Area(s)				
	Extreme	Moderate to Extreme	Moderate	Slight to Moderate	None to Slight
1. Rills					FC1,FC2,FC3,FC4,FC5,FC6,FC7,FC8,FC9,FC10,LH1,LH2,LH3,LH4,LH5,LH6,LH7,LH8,SB1,SB2,SB3,SB4,SB5,SB6
2. Water Flow Patterns				LH4	FC1,FC2,FC3,FC4,FC5,FC6,FC7,FC8,FC9,FC10,LH1,LH2,LH3,LH5,LH6,LH7,LH8,SB1,SB2,SB3,SB4,SB5,SB6
3. Pedastals and/or Terracettes (Wind & Water)				LH4,SB1	FC1,FC2,FC3,FC4,FC5,FC6,FC7,FC8,FC9,FC10,LH1,LH2,LH3,LH5,LH6,LH7,LH8,SB2,SB3,SB4,SB5,SB6
4. Bare Ground					FC1,FC2,FC3,FC4,FC5,FC6,FC7,FC8,FC9,FC10,LH1,LH2,LH3,LH4,LH5,LH6,LH7,LH8,SB1,SB2,SB3,SB4,SB5,SB6
5. Gullies					FC1,FC2,FC3,FC4,FC5,FC6,FC7,FC8,FC9,FC10,LH1,LH2,LH3,LH4,LH5,LH6,LH7,LH8,SB1,SB2,SB3,SB4,SB5,SB6
6. Wind-scoured, Blowout, and/or Depositional Areas					FC1,FC2,FC3,FC4,FC5,FC6,FC7,FC8,FC9,FC10,LH1,LH2,LH3,LH4,LH5,LH6,LH7,LH8,SB1,SB2,SB3,SB4,SB5,SB6
7. Litter Movement				LH4	FC1,FC2,FC3,FC4,FC5,FC6,FC7,FC8,FC9,FC10,LH1,LH2,LH3,LH5,LH6,LH7,LH8,SB1,SB2,SB3,SB4,SB5,SB6
8. Soil Surface Resistance to Erosion				SB6	FC1,FC2,FC3,FC4,FC5,FC6,FC7,FC8,FC9,FC10,LH1,LH2,LH3,LH4,LH5,LH6,LH7,LH8,SB1,SB2,SB3,SB4,SB5
9. Soil Surface Loss or Degradation				LH4	FC1,FC2,FC3,FC4,FC5,FC6,FC7,FC8,FC9,FC10,LH1,LH2,LH3,LH5,LH6,LH7,LH8,SB1,SB2,SB3,SB4,SB5,SB6
10. Plant Community Composition & Distribution Relative to Infiltration & Runoff			SB2		FC1,FC2,FC3,FC4,FC5,FC6,FC7,FC8,FC9,FC10,LH1,LH2,LH3,LH4,LH5,LH6,LH7,LH8,SB1,SB3,SB4,SB5,SB6
11. Compaction Layer					FC1,FC2,FC3,FC4,FC5,FC6,FC7,FC8,FC9,FC10,LH1,LH2,LH3,LH4,LH5,LH6,LH7,LH8,SB1,SB2,SB3,SB4,SB5,SB6
17. Reproductive Capability of Perennial Plants				LH7,SB2	FC1,FC2,FC3,FC4,FC5,FC6,FC7,FC8,FC9,FC10,LH1,LH2,LH3,LH4,LH5,LH6,LH8,SB1,SB3,SB4,SB5,SB6
<i>Rangeland Health Attributes</i>	Extreme	Moderate to Extreme	Moderate	Slight to Moderate	None to Slight
Standard 1 (Indicators 1-11, & 17)			1 Indicator	8 Indicators	279 Indicators
Overall Rating for Site					FC1,FC2,FC3,FC4,FC5,FC6,FC7,FC8,FC9,FC10,LH1,LH2,LH3,LH4,LH5,LH6,LH7,LH8,SB1,SB2,SB3,SB4,SB5,SB6
Overall Rating for Allotment					X

Much of this standard relies on the overall ground cover within the allotment. Field measurements found that vascular plants provided 72% of the cover on average for those sites evaluated in this allotment, litter was 17%, rock was 4%, and bare ground was 7%. There was some evidence of water flow patterns and plant pedestaling in one site along an ephemeral drainageway, showing litter movement and loss of the top inch of soil, though these issues were

not pronounced or much more than would be expected for the soils in that ecological site. On a steep hillside site in Dugway Canyon, there was some small terracettes, primarily from animal trailing. Another site on the south facing slope in Dugway Canyon was lacking in mid-sized bunchgrasses and the understory was dominated by cheatgrass. In one site, a bench above the main Cold Spring Creek drainage, organic matter was slightly broken down by hoof action. All other indicators in all sites were at or near what was expected for the site when compared to the ecological site description.

Allotment Summary for Standard 1 (Watersheds):

The overall rating of this allotment for Standard 1 is none to slight (refer to Appendix 1-1). One indicator (<1%) was marked moderate, eight indicators (3%) were marked slight to moderate, and two hundred seventy nine indicators (97%) were marked none to slight. These indicators and their ratings suggest that the allotment as a whole is physically stable with little active erosion and has most of the proper characteristics to minimize the effects of water runoff and wind erosion and maintain proper hydrologic function.

B. Standard 2 (Riparian Areas and Wetlands)

During the field assessment, nine lentic riparian areas were assessed for Proper Functioning Condition. These areas include ponds, springs, seeps, and wet meadows. In all, there are about 150 acres of lentic riparian areas on public land in the Flat Top Allotment (as determined by topo-maps and aerial photos). Table 3 indicates the determination of each attribute for each lentic riparian area assessed.

One of the source springs for the South Fork of Muldoon Creek (FCS1) was assessed as a spring, due to the presence of a small developed pond, followed by a gap in the riparian area before perennial flow occurs downhill. This spring was determined to be Functional-At Risk (FAR) with a downward trend. During the field assessment this spring, there was evidence of past cattle use, but in June of 2008, it was being used as an elk wallow. The uphill bank is sloughing off, and the riparian vegetation is being invaded by sagebrush, indicating that the riparian area is shrinking. The small pond appears to be filling in with sediment from this sloughing bank. There is a risk of forming a headcut below the source, due to the steep gradient and livestock and wildlife use, resulting in a reduction in riparian vegetation.

A small unnamed spring in the Friedman Creek Pasture (FCS3) was determined to be FAR with trend not apparent. This spring was developed at some point in the past, though no records could be found. Because of the development, it appears as though it has shrunk from its historic size but currently appears to be stable.

In the Friedman Creek Pasture there is a cluster of springs that flow together into a single drainage (FCS4). This complex was assessed and determined to be FAR with an upward trend. Each of these springs were dug out in the past, creating ponds. These ponds appear to be filling in and healing on their own, though an unusually high flow event could set the progress back.

The following riparian areas were determined to be in Proper Functioning Condition (PFC): Unnamed pond (LHP1) and a wet meadow (LHWM) in the Lake Hills Pasture, two unnamed

springs (SBS1 & SBS2) and an unnamed pond (SBP1) in the South Burgess Pasture, Italian Lake (IL), and a small pond in Friedman Creek (FCS2)

TABLE 3. Lentic Riparian Indicator Summary

Lentic Indicators	Yes	No	Not Applicable
1. Riparian-wetland area is saturated at or near the surface or inundated in “relatively frequent” events	FCS1,LHP1,LHWM,SBS1, SBS2,SBP1,IL,FCS2,FCS3, FCS4		
2. Fluctuation of water levels is not excessive	FCS1,LHP1,LHWM,SBS1, SBS2,SBP1,IL,FCS2,FCS3, FCS4		
3. Riparian-wetland zone is enlarging or has achieved potential extent	LHP1,LHWM,SBS1,SBS2, SBP1,IL,FCS2,FCS4	FCS1,FCS3	
4. Upland watershed is not contributing to riparian-wetland degradation	FCS1,LHP1,LHWM,SBS1, SBS2,SBP1,IL,FCS2,FCS3, FCS4		
5. Water quality is sufficient to support riparian-wetland plants	FCS1,LHP1,LHWM,SBS1, SBS2,SBP1,IL,FCS2,FCS3, FCS4		
6. Natural surface or subsurface flow patterns are not altered by disturbance	LHP1,LHWM,SBS1,SBS2, SBP1,IL	FCS1,FCS2, FCS3,FCS4	
7. Structure accommodates safe passage of flows	FCS2		FCS1,LHP1,LHWM, SBS1,SBS2,SBP1, IL,FCS3,FCS4
8. Diverse age-class distribution	FCS1,LHP1,LHWM,SBS1, SBS2,SBP1,IL,FCS2,FCS3, FCS4		
9. Diverse composition of vegetation	FCS1,LHP1,LHWM,SBS1, SBS2,SBP1,IL,FCS2,FCS3, FCS4		
10. Species present indicate maintenance of riparian-wetland soil moisture characteristics	FCS1,LHP1,LHWM,SBS1, SBS2,SBP1,IL,FCS2,FCS3, FCS4		
11. Vegetation comprised of plants or plant communities that have root masses capable of withstanding wind events, wave flow events, or overland flows	FCS1,LHP1,LHWM,SBS1, SBS2,SBP1,IL,FCS2,FCS3, FCS4		
12. Riparian-wetland plants exhibit high vigor	FCS1,LHP1,LHWM,SBS1, SBS2,SBP1,IL,FCS2,FCS4	FCS3	
13. Adequate vegetative cover present to protect shorelines/soil surface and dissipate energy during high wind and wave events or overland flows	FCS1,LHP1,LHWM,SBS1, SBS2,SBP1,IL,FCS2		FCS3,FCS4
14. Frost or abnormal hydrologic heaving is not present	FCS1,LHP1,LHWM,SBS1, SBS2,SBP1,IL,FCS2,FCS3, FCS4		
15. Favorable microsite conditions are maintained by adjacent site characteristics	FCS1,LHWM,SBS1,SBP1, IL,FCS2,FCS3,FCS4		LHP1,SBS2
16. Accumulation of chemicals affecting plant productivity/composition is not apparent	FCS1,LHP1,LHWM,SBS1, SBS2,SBP1,IL,FCS2,FCS3, FCS4		
17. Saturation of soils is sufficient to compose and maintain hydric soils	FCS1,LHP1,LHWM,SBS1, SBS2,SBP1,IL,FCS2,FCS3, FCS4		
18. Underlying geologic structure/soil material/	FCS1,LHP1,LHWM,SBS1,		

Lentic Indicators	Yes	No	Not Applicable
permafrost is capable of restricting water percolation	SBS2,SBP1,IL,FCS2,FCS3,FCS4		
19. Riparian-wetland is in balance with water and sediment being supplied by the watershed	FCS1,LHP1,LHWM,SBS1,SBS2,SBP1,IL,FCS2,FCS3,FCS4		
20. Islands and shoreline characteristics are adequate to dissipate wind and wave event energies	LHP1,SBP1,IL,FCS2		FCS1,LHWM,SBS1,SBS2,FCS3,FCS4

C. Standard 3 (Stream Channel/Floodplain)

There are about 17 miles of perennial streams on public land within the Flat Top Allotment from fourteen streams. During the field review, thirteen of these streams were assessed for Proper Functioning Condition. Baugh Creek was not assessed because it occurs on only 0.17 miles of BLM, and the condition of other nearby streams is indicative of the overall condition of stream channels and floodplains in the allotment. Table 4 indicates the determination of each attribute for each stream assessed.

Dugway Canyon (DC in Table 4) was determined to be FAR with no apparent trend, due to some bare areas of streambank and channel incision. It was determined that the stream has all of the components necessary to repair these small problems with proper management. The incision is not deep, but is currently at a bedrock floor; the stream has a diverse and healthy vegetation component, and the riparian zone seems to have reached its potential extent.

An unnamed intermittent stream in the Lake Hills Pasture (LHS1) was determined to be FAR with an upward trend. The stream channel is incised in areas, and still at risk of further incision, but active willow and herbaceous riparian species recruitment into these areas indicate that they are healing.

Another unnamed intermittent stream in the Lake Hills Pasture (LHS2) was determined to be FAR with trend not apparent. This site shows evidence of past heavy livestock use, but it also appears as though the water table has lowered in the last several years as evidenced by a change in woody species composition.

The South Fork of Muldoon Creek flows through BLM land, and therefore was assessed, in two different segments—the upper and lower segments. The upper segment actually forks and was also split into two segments—the left fork (SFML) and right fork (SFMR). The left fork of the upper segment was determined to be FAR with a weak downward trend. There was a pond developed at the source of the left fork, and from it, there is some active headcutting and sloughing of the uphill side of the source, and it does not have the characteristics to dissipate a high energy event. The right fork was determined to be in Proper Functioning Condition (PFC).

The Lower segment of the South Fork of Muldoon Creek (LSFM) was determined to be FAR with a downward trend. The stream and a two track road that enters the stream channel in several places. Every place that the two track road enters the channel, there is a small headcut. Every other reach, is stable and healthy. The system could be destabilized by a high flow event, but stabilization would require re-routing the road out of the stream.

There is an unnamed tributary to the South Fork of Muldoon Creek (SFMT) that is on BLM, as well. This stream has a series of small old dams along the entire length of it—public and private. At nearly every dam, there is a small headcut, and at the source spring, there is a large active headcut. Where these headcuts are in higher gradients, the vegetation and streambank characteristics are not adequate to dissipate high energy events, and the one at the source is threatening the entire system. Other than at these areas, the system is stable with a healthy vegetative component. The system was rated as FAR with a downward trend.

Friedman Creek was divided into a lower reach (LF) and an upper reach (UF) by an area of private land. Both segments were determined to be PFC.

Also determined to be PFC were the East Fork of Friedman Creek (EF), an unnamed tributary to Friedman Creek (TF), High Five Creek (H5), Trail Creek (TC), Rough Canyon (RC), Timber Gulch (TG), and Little Fish Creek (LFC).

TABLE 4. Lotic Riparian Indicator Summary

Lotic Indicators	Yes	No	N/A
1. Floodplain inundated in relatively frequent events	DC,LHS1,LSFM,LF,UF,EF,TF,H5,TC,RC,TG,LFC		LHS2,SFML,SFMR,SFMT
2. Active/stable beaver dams	H5,TC		DC,LHS1,LHS2,SFML,SFMR,LSFM,SFMT,LF,UF,EF,TF,RC,TG,LFC
3. Sinuosity, width/depth ratio, and gradient are in balance with the landscape setting	DC,LHS1,SFMR,LSFM,LF,UF,EF,TF,H5,TC,RC,TG,LFC	LHS2,SFML,SFMT	
4. Riparian zone is widening or has achieved potential extent	DC,LHS1,LHS2,SFMR,LSFM,SFMT,LF,UF,EF,TF,H5,TC,RC,TG,LFC	SFML	
5. Upland watershed not contributing to riparian degradation	LHS1,SFML,SFMR,LSFM,SFMT,LF,UF,EF,TF,H5,TC,RC,TG,LFC	DC,LHS2	
6. Diverse age-class distribution	DC,LHS1,SFML,SFMR,LSFM,SFMT,LF,UF,EF,TF,H5,TC,RC,TG,LFC	LHS2	
7. Diverse composition of vegetation	DC,LHS1,LHS2,SFML,SFMR,LSFM,SFMT,LF,UF,EF,TF,H5,TC,RC,TG,LFC		
8. Species present indicate maintenance of riparian soil moisture characteristics	DC,LHS1,SFML,SFMR,LSFM,SFMT,LF,UF,EF,TF,H5,TC,RC,TG,LFC	LHS2	
9. Streambank vegetation is comprised of those plants or plant communities that have root masses capable of withstanding high stream flows	DC,LHS1,SFML,SFMR,LSFM,LF,UF,EF,TF,H5,TC,RC,TG,LFC	LHS2,SFMT	
10. Riparian plants exhibit high vigor	DC,LHS1,SFML,SFMR,LSFM,SFMT,LF,UF,EF,TF,H5,TC,RC,TG,LFC	LHS2	
11. Adequate vegetative cover present to protect banks and dissipate energy during high flows	DC,SFML,SFMR,LSFM,SFMT,LF,UF,EF,TF,H5,TC,TG,LFC	LHS1,LHS2	
12. Plant communities in the riparian area are an adequate source of coarse and/or large woody debris	DC,LHS1,LHS2,SFML,SFMR,LSFM,SFMT,LF,UF,EF,TF,H5,TC,RC,TG,LFC		

Lotic Indicators	Yes	No	N/A
13. Floodplain and channel characteristics are adequate to dissipate energy	DC,SFMR,LSFM,SFMT,LF,UF,EF,TF,H5,RC,TG,LFC	LHS1,LHS2,SF ML	
14. Point bars are revegetating	DC,LHS1,LSFM,SFMT,LF,UF,EF,TF,H5,TC,LFC		LHS2,SFML,SFMR,RC,TG
15. Lateral stream movement is associated with natural sinuosity	DC,SFML,SFMR,LSFM,LSFM,SFMT,LF,UF,EF,TF,H5,TC,RC,TG,LFC	LHS1,LHS2	
16. System is vertically stable	DC,LHS1,LHS2,SFMR,LF,UF,EF,TF,H5,TC,RC,TG,LFC	SFML,LSFM,SF MT	
17. Stream is in balance with the water and sediment being supplied by the watershed	DC,LHS1,SFMR,LSFM,SFMT,LF,UF,EF,TF,H5,TC,RC,TG,LFC	LHS2,SFML	

C. Standard 4 (Native Plant Communities)

This Standard applies to those sites in which native species dominate the site. For easier presentation, this Standard is separated into the various ecological sites in which the native communities were found, and are presented with the ecological site descriptions. The cover values for this Standard are the total percent cover from up to three canopy layers for each point along the step-point transect. Therefore, if there was more than one vegetative layer, total canopy cover can be higher than 100%. Table 5 summarizes the ranking of each Native Plant Community Rangeland Health Indicator for each site.

1. Clayey 12 – 16” (Alkali sagebrush/Idaho fescue)

The Ecological Site Description for this site states that the visually dominant vegetation should be alkali sagebrush, bluebunch wheatgrass, and Idaho fescue. By weight, grasses should comprise 55 percent of the production, 15 percent forbs, and 35 percent shrubs.

The dominant potential natural grasses by weight for this site include Idaho fescue (*Festuca idahoensis*), bluebunch wheatgrass (*Pseudoroegneria spicata*), and Sandberg bluegrass (*Poa secunda*), with lesser amounts of Thurber needlegrass (*Stipa thurberiana*), bottlebrush squirreltail (*Elymus elymoides*), and oniongrass (*Melica bulbosa*).

Forbs in the potential natural plant community include Lupine (*Lupinus* spp.), phlox (*Phlox* spp.), and arrowleaf balsamroot (*Balsamorhiza sagittata*), with lesser amounts of agoseris (*Agoseris* spp.), Indian paintbrush (*Castilleja* spp.), biscuitroot (*Lomatium* spp.), buckwheat (*Eriogonum* spp.), and vetch (*Vicia* spp.).

The dominant shrub is alkali sagebrush (*Artemisia longiloba*), with lesser amounts of antelope bitterbrush (*Purshia tridentata*), and green rabbitbrush (*Chrysothamnus viscidiflorus*).

LH4

This site originated on private land, because of the difficulty of finding a large enough contiguous area of the same Ecological Site on BLM. However, this site does appear to be representative of this Ecological Site in the Lake Hills Pasture.

Cover data indicate that Sandberg's bluegrass (provides 36% cover), alkali sagebrush (18%), nineleaf biscuitroot (*Lomatium triternatum*) (8%), and matted buckwheat (*Eriogonum*

ovalifolium) (8%) are the dominant species on the site. Native perennial grasses contributed 38% cover, shrubs were 32%, perennial native forbs were 18%, and biological crust was 4%.

2. Loamy 12 – 16” (Mountain big sagebrush/bluebunch wheatgrass)

The Ecological Site Description for this site states that the visually dominant vegetation should be bluebunch wheatgrass, western needlegrass (*Stipa occidentalis*), and mountain big sagebrush. By weight, grasses should comprise 55 percent of the production, 20 percent forbs, and 25 percent shrubs.

The dominant potential natural grasses by weight for this site include bluebunch wheatgrass, western needlegrass, and Thurber needlegrass (*Stipa thurberiana*), with lesser amounts of bottlebrush squirreltail (*Elymus elymoides*), Sandberg bluegrass, basin wildrye (*Leymus cinereus*), prairie junegrass (*Koeleria cristata*), Idaho fescue, and sedges (*Carex* spp.).

Forbs in the potential natural plant community include Lupine and arrowleaf balsamroot, with lesser amounts of tapertip hawksbeard (*Crepis acuminata*), white hawkweed (*Hieracium albiflorum*), rosy pussytoes (*Antennaria microphylla*), longleaf phlox (*Phlox longifolia*), rockcress (*Arabis* spp.) milkvetch (*Astragalus* spp.), fleabane (*Erigeron* spp.), biscuitroot (*Lomatium* spp.), parsnipflowered buckwheat (*Eriogonum heracleoides*), and penstemon (*Penstemon* spp.).

The dominant shrub is mountain big sagebrush (*Artemisia tridentata* ssp. *vaseyana*), with lesser amounts of antelope bitterbrush and green rabbitbrush.

LH5

Cover data indicate that mountain big sagebrush (provides 26% cover), Sandberg’s bluegrass (12%), fewflower pea (*Lathyrus pauciflorus*) (9%), and bluebunch wheatgrass (8%) are the dominant species on the site. Native perennial grasses contributed 20% cover, shrubs were 39%, perennial native forbs were 33%, and annual forbs were 6%.

LH8

Cover data indicate that bluebunch wheatgrass (provides 26% cover), Sandberg’s bluegrass (23%), mountain big sagebrush (20%), silky lupine (*Lupinus holosericeus*) (16%), and pale agoseris (*Agoseris glauca*) (13%) are the dominant species on the site. Native perennial grasses contributed 55% cover, shrubs were 27%, perennial native forbs were 53%, and annual forbs were 6%.

FC1

Cover data indicate that bluebunch wheatgrass (provides 22% cover), Idaho fescue (18%), mountain big sagebrush (15%), and silky lupine, nineleaf biscuitroot, and green rabbitbrush (5% each), are the dominant species on the site. Native perennial grasses contributed 43% cover, shrubs were 25%, perennial native forbs were 23%, and annual forbs were 4%.

3. Loamy 12 – 16” (Mountain big sagebrush/ Idaho fescue)

The Ecological Site Description for this site states that the visually dominant vegetation should be mountain big sagebrush and Idaho fescue. By weight, grasses should comprise 50 percent of the production, 25 percent forbs and 30 percent shrubs.

The dominant potential natural grasses by weight for this site include bluebunch wheatgrass and Idaho fescue, with lesser amounts of Sandberg bluegrass, western needlegrass, prairie junegrass, and bottlebrush squirreltail.

Forbs in the potential natural plant community include Lupine, arrowleaf balsamroot, and milkvetch, with lesser amounts of tapertip hawksbeard, phlox, geranium (*Geranium* spp.), Indian paintbrush, buckwheat, and western yarrow (*Achillea millefolium*).

The dominant shrub is mountain big sagebrush, with lesser amounts of antelope bitterbrush, rabbitbrush, and mountain snowberry (*Symphoricarpos oreophilus*).

FC6

Cover data indicate that mountain big sagebrush (provides 46% cover), bluebunch wheatgrass (19%), arrowleaf balsamroot (13%), and antelope bitterbrush (12%) are the dominant species on the site. Native perennial grasses contributed 30% cover, shrubs were 59%, perennial native forbs were 31%, and annual grasses were 11%.

FC9

Cover data indicate that mountain big sagebrush (provides 36% cover), bluebunch wheatgrass (29%), Idaho fescue (15%), and silky lupine (8%) are the dominant species on the site. Native perennial grasses contributed 55% cover, shrubs were 43%, perennial native forbs were 23%, and annual forbs were 1%.

4. North Slope Clayey 16 – 20” (Low sagebrush/Idaho fescue)

The Ecological Site Description for this site states that the visually dominant vegetation should be low sagebrush and Idaho fescue. By weight, grasses should comprise 40 percent of the production, 25 percent forbs and 35 percent shrubs.

The dominant potential natural grasses by weight for this site include Idaho fescue and bluebunch wheatgrass, with lesser amounts of sedges, Thurber needlegrass, Sandberg bluegrass, and bottlebrush squirreltail.

Forbs in the potential natural plant community include Lupine and arrowleaf balsamroot, with lesser amounts of Penstemon, phlox, tapertip hawksbeard, agoseris, fleabane, sulfur buckwheat (*Eriogonum umbellatum*), and rosy pussytoes.

The dominant shrub is low sagebrush, with lesser amounts of alkali sagebrush.

LH3

Cover data indicate that Sandberg's bluegrass (provides 28% cover), low sagebrush (28%), bluebunch wheatgrass (8%), and pussytoes (6%) are the dominant species on the site. Native

perennial grasses contributed 42% cover, shrubs were 28%, perennial native forbs were 20%, and annual forbs were 4%.

5. North Slope Loamy 16 – 20” (Mountain big sagebrush/Idaho fescue)

The Ecological Site Description for this site states that the visually dominant vegetation should be Idaho fescue, bluebunch wheatgrass, and mountain big sagebrush. By weight, grasses should comprise 50 percent of the production, 30 percent forbs and 20 percent shrubs.

The dominant potential natural grasses by weight for this site include Idaho fescue, bluebunch wheatgrass, and prairie junegrass, with lesser amounts of basin wildrye (*Leymus cinereus*), Sandberg bluegrass, bottlebrush squirreltail, sedges (*Carex* spp.), columbia needlegrass (*Stipa columbiana*), oniongrass (*Melica bulbosa*), and Thurber needlegrass (*Stipa thurberiana*).

Forbs in the potential natural plant community include arrowleaf balsamroot, Lupine, tapertip hawksbeard, and geranium (*Geranium* spp.), with lesser amounts of buckwheat, aster, phlox, Indian paintbrush, milkvetch, oneflower sunflower (*Helianthella uniflora*), penstemon, stoneseed, onion (*Allium* spp.), and yarrow.

The dominant shrub is mountain big sagebrush, with lesser amounts of antelope bitterbrush, rabbitbrush, serviceberry (*Amelanchier* spp.), snowberry, wild rose (*Rosa* spp.), quaking aspen (*Populus tremuloides*), currant (*Ribes* spp.), chokecherry (*Prunus virginiana*), and mockorange (*Philadelphus lewisii*).

SB1

Cover data indicate that Idaho fescue (provides 35% cover), mountain big sagebrush (27%), bluebunch wheatgrass (14%), and slender buckwheat (6%) are the dominant species on the site. Native perennial grasses contributed 58% cover, shrubs were 33%, and perennial native forbs were 17%. Biological crust was found on 5% of the transect points.

SB4

Cover data indicate that bluebunch wheatgrass (provides 29% cover), Idaho fescue (25%), Sandberg's bluegrass (15%), and arrowleaf balsamroot (14%) are the dominant species on the site. Native perennial grasses contributed 70% cover, shrubs were 9%, perennial native forbs were 66%, and annual forbs were 2%. Biological crust was found on 2% of the transect points.

LH2

Cover data indicate that mountain big sagebrush (provides 22% cover), bluebunch wheatgrass and Idaho fescue (17%), Sandberg's bluegrass (14%), and rock buckwheat (13%) are the dominant species on the site. Native perennial grasses contributed 50% cover, shrubs were 32%, perennial native forbs were 42%, and annual forbs were 1%.

FC2

Cover data indicate that bluebunch wheatgrass and mountain big sagebrush (provide 22% cover, each); Idaho fescue (20%); sulphur buckwheat and antelope bitterbrush (12% each); and arrowleaf balsamroot (10%) are the dominant species on the site. Native perennial grasses

contributed 49% cover, shrubs were 36%, perennial native forbs were 45%, and annual forbs were 2%.

FC5

Cover data indicate that mountain big sagebrush (provides 40% cover), bluebunch wheatgrass (26%), oniongrass (15%), and willowherb (13%) are the dominant species on the site. Native perennial grasses contributed 63% cover, shrubs were 36%, perennial native forbs were 45%, and annual forbs were 7%.

6. North Slope Loamy 18 – 24” (Mountain big sagebrush/mountain snowberry/Idaho fescue)

The Ecological Site Description for this site states that the visually dominant vegetation should be mountain big sagebrush, deciduous shrubs, and grass. By weight, grasses should comprise 50 percent of the production, 25 percent forbs and 25 percent shrubs.

The dominant potential natural grasses by weight for this site include bluebunch wheatgrass and Idaho fescue, with lesser amounts of slender wheatgrass (*Agropyron caninum*), prairie junegrass, Sandberg bluegrass, big bluegrass (*Poa ampla*), Thurber needlegrass, California brome (*Bromus carinatus*), and Kentucky bluegrass (*Poa pratensis*).

Forbs in the potential natural plant community include Lupine, arrowleaf balsamroot, and alumroot (*Heuchera* spp.), with lesser amounts of tapertip hawksbeard, cinquefoil (*Potentilla* spp.), agoseris, Indian paintbrush, biscuitroot, hawkweed, penstemon, horse mint (*Agastache urticifolia*), geranium (*Geranium* spp.), and buckwheat.

The dominant shrubs are mountain big sagebrush and mountain snowberry, with lesser amounts of rabbitbrush, Woods rose (*Rosa woodsii*), chokecherry (*Prunus virginiana*), snowbush ceanothus (*Ceanothus velutinus*), and antelope bitterbrush.

SB5

Cover data indicate that Idaho fescue (provides 37% cover), mountain big sagebrush (16%), bluebunch wheatgrass (15%), and silky lupine (14%) are the dominant species on the site. Native perennial grasses contributed 63% cover, shrubs were 32%, and perennial native forbs were 40%.

FC10

Cover data indicate that mountain big sagebrush (provides 45% cover), bluebunch wheatgrass (26%), Idaho fescue (22%), willowherb (10%), and silky lupine (10%) are the dominant species on the site. Native perennial grasses contributed 58% cover, shrubs were 46%, and perennial native forbs were 39%, and annual forbs were 7%.

7. South Slope Clayey 12 – 16” (Low sagebrush/bluebunch wheatgrass)

The Ecological Site Description for this site states that the visually dominant vegetation should be low sagebrush with scattered grasses and forbs. By weight, grasses should comprise 30 percent of the production, 30 percent forbs and 40 percent shrubs.

The dominant potential natural grasses by weight for this site include Sandberg bluegrass, bottlebrush squirreltail, and bluebunch wheatgrass, with lesser amounts of Idaho fescue and sedges.

Forbs in the potential natural plant community include Hooker balsamroot (*Balsamorhiza hookeri*), Hood's phlox (*Phlox hoodii*), and mulesear (*Wyethia amplexicaulis*), with lesser amounts of longleaf phlox, owl clover, death camas, biscuitroot, lupine, and aster (*Aster* spp.).

The dominant shrub is low sagebrush, with lesser amounts of green rabbitbrush.

SB3

Cover data indicate that Sandberg's bluegrass (provides 12% cover), low sagebrush was the only shrub (5%), Hooker's balsamroot (5%), and bluebunch wheatgrass (4%) are the dominant species on the site. Native perennial grasses contributed 17% cover, perennial native forbs were 26%, and annual forbs were 2%.

SB6

Cover data indicate that low sagebrush (provides 31% cover), Sandberg's bluegrass (21%), matted buckwheat (9%), and bluebunch wheatgrass (8%) are the dominant species on the site. Native perennial grasses contributed 36% cover, shrubs were 31%, perennial native forbs were 25%, and annual forbs were 1%.

LH6

Cover data indicate that low sagebrush (provides 35% cover), Japanese brome (10%), and Sandberg's bluegrass (5%) are the dominant species on the site. Native perennial grasses contributed 7% cover, shrubs were 36%, perennial native forbs were 4%, and annual forbs were 3%.

8. South Slope Gravelly 12 – 16" (Mountain big sagebrush/bluebunch wheatgrass)

The Ecological Site Description for this site states that the visually dominant vegetation should be mountain big sagebrush and bluebunch wheatgrass. By weight, grasses should comprise 45 percent of the production, 15 percent forbs and 40 percent shrubs.

The dominant potential natural grasses by weight for this site include bluebunch wheatgrass, with lesser amounts of basin wildrye, Indian ricegrass (*Achnatherum hymenoides*), Sandberg bluegrass, bottlebrush squirreltail, Columbia needlegrass, and sedges.

Forbs in the potential natural plant community include Lupine, arrowleaf balsamroot, and tapertip hawksbeard, with lesser amounts of milkvetch, Hooker balsamroot (*Balsamorhiza hookeri*), phlox, geranium, Indian paintbrush, oneflower sunflower, deathcamas, and buckwheat.

The dominant shrubs are mountain big sagebrush and antelope bitterbrush, with lesser amounts of rabbitbrush, mountain snowberry, currant, chokecherry, and grey horsebrush (*Tetradymia canescens*).

SB2

Cover data indicate that mountain big sagebrush (provides 24% cover), cheatgrass (22%), bluebunch wheatgrass (14%), and Thurber's needlegrass (6%) are the dominant species on the site. Native perennial grasses contributed 30% cover, shrubs were 36%, and perennial native forbs were 2%.

LH1

Cover data indicate that cheatgrass (provides 32% cover), bluebunch wheatgrass (28%), antelope bitterbrush (24%), and mountain big sagebrush (16%) are the dominant species on the site. Native perennial grasses contributed 38% cover, shrubs were 40%, and perennial native forbs were 4%.

LH7

Cover data indicate that mountain big sagebrush (provides 33% cover), cheatgrass (15%), silky lupine and Sandberg's bluegrass (12%), and bluebunch wheatgrass (11%) are the dominant species on the site. Native perennial grasses contributed 24% cover, shrubs were 43%, annual grasses were 18%, perennial native forbs were 27%, and annual forbs were 4%.

FC8

Cover data indicate that mountain big sagebrush (provides 30% cover), antelope bitterbrush (20%), bluebunch wheatgrass (16%), and cheatgrass (16%) are the dominant species on the site. Native perennial grasses contributed 32% cover, shrubs were 50%, annual grasses were 19%, annual forbs were 2%, and perennial native forbs were 11%.

9. Fractured North Slope 16 – 22" (Mountain big sagebrush/Idaho fescue)

The Ecological Site Description for this site states that the visually dominant vegetation should be mountain big sagebrush, Idaho fescue, and various forbs. By weight, grasses should comprise 55 percent of the production, 25 percent forbs and 20 percent shrubs.

The dominant potential natural grasses by weight for this site include Idaho fescue and bluebunch wheatgrass, with lesser amounts of California brome, prairie junegrass, big bluegrass, Sandberg bluegrass, and slender wheatgrass.

The dominant forb in the potential natural plant community should be Lupine (*Lupinus* spp.), with lesser amounts of tapertip hawksbeard, Indian paintbrush, fleabane, rockcress, agoseris, buckwheat, and balsamroot.

The dominant shrub is mountain big sagebrush (*Artemisia tridentata vaseyana*), with lesser amounts of antelope bitterbrush, green rabbitbrush, and mountain snowberry.

FC3

Cover data indicate that Idaho fescue (provides 18% cover), one-flower sunflower (10%), mountain big sagebrush (8%), and sawleaf bush penstemon (*Penstemon fruticosus*) (6%) are the dominant species on the site. Native perennial grasses contributed 20% cover, shrubs were 10%, perennial native forbs were 28%, and annual forbs were 2%.

FC4

Cover data indicate that Idaho fescue (provides 22% cover), bluebunch wheatgrass (12%), mountain big sagebrush (12%), and Hood's phlox (6%) are the dominant species on the site. Native perennial grasses contributed 34% cover, shrubs were 15%, perennial native forbs were 34%, and annual forbs were 5%.

10. Fractured South Slope 12 – 16" (Mountain big sagebrush/bluebunch wheatgrass)

The Ecological Site Description for this site states that the visually dominant vegetation should be bluebunch wheatgrass and mountain big sagebrush. By weight, grasses should comprise 40 percent of the production, 25 percent forbs and 35 percent shrubs.

The dominant potential natural grass by weight for this site is bluebunch wheatgrass, with lesser amounts of Sandberg bluegrass, bottlebrush squirreltail, basin wildrye, and cheatgrass.

Forbs in the potential natural plant community include phlox and arrowleaf balsamroot, with lesser amounts of lupine, penstemon, fleabane, buckwheat, and milkvetch.

The dominant shrub is mountain big sagebrush, with lesser amounts of rabbitbrush, antelope bitterbrush, and grey horsebrush.

FC7

Cover data indicate that mountain big sagebrush (provides 20% cover), bluebunch wheatgrass (16%), Idaho fescue (8%), Hood's phlox (8%), and Sandberg's bluegrass (8%) are the dominant species on the site. Native perennial grasses contributed 36% cover, shrubs were 24%, and perennial native forbs were 24%.

Table 5: Native Plant Community Indicator Ratings

Standard 4: Native Plant Community (Summary)					
Indicator	Degree of Departure from Ecological Site Description and/or Ecological Reference Area(s)				
	Extreme	Moderate to Extreme	Moderate	Slight to Moderate	None to Slight
8. Soil Surface Resistance to Erosion				SB6	FC1,FC2,FC3,FC4,FC5,FC6,FC7,FC8,FC9,FC10,LH1,LH2,LH3,LH4,LH5,LH6,LH7,LH8,SB1,SB2,SB3,SB4,SB5,SB6
9. Soil Surface Loss or Degradation				LH4	FC1,FC2,FC3,FC4,FC5,FC6,FC7,FC8,FC9,FC10,LH1,LH2,LH3,LH5,LH6,LH7,LH8,SB1,SB2,SB3,SB4,SB5,SB6
11. Compaction Layer					FC1,FC2,FC3,FC4,FC5,FC6,FC7,FC8,FC9,FC10,LH1,LH2,LH3,LH4,LH5,LH6,LH7,LH8,SB1,SB2,SB3,SB4,SB5,SB6
12. Functional/Structural Groups				LH1,LH3,LH4,LH5,LH6,LH7,SB2	FC1,FC2,FC3,FC4,FC5,FC6,FC7,FC8,FC9,FC10,LH2,LH8,SB1,SB3,SB4,SB5,SB6
13. Plant Mortality/Decadence				LH5	FC1,FC2,FC3,FC4,FC5,FC6,FC7,FC8,FC9,FC10,LH1,LH2,LH3,LH4,LH6,LH7,LH8,SB1,SB2,SB3,SB4,SB5,SB6
14. Litter Amount				LH1	FC1,FC2,FC3,FC4,FC5,FC6,FC7,FC8,FC9,FC10,LH2,LH4,LH5,LH6,LH7,LH8,SB1,SB2,SB3,SB4,SB5,SB6
15. Annual Production					FC1,FC2,FC3,FC4,FC5,FC6,FC7,FC8,FC9,FC10,LH1,LH2,LH3,LH4,LH5,LH6,LH7,LH8,SB1,SB2,SB3,SB4,SB5,SB6
16. Invasive Plants	SB2	LH1	FC8,LH6,LH7	FC6,LH3	FC1,FC2,FC3,FC4,FC5,FC7,FC9,FC10,LH2,LH4,LH5,LH8,SB1,SB3,SB4,SB5,SB6
17. Reproductive Capability of Perennial Plants				SB2	FC1,FC2,FC3,FC4,FC5,FC6,FC7,FC8,FC9,FC10,LH1,LH2,LH3,LH4,LH5,LH6,LH8,SB1,SB3,SB4,SB5,SB6
<i>Rangeland Health Attributes</i>	Extreme	Moderate to Extreme	Moderate	Slight to Moderate	None to Slight
Standard 4 (Indicators 8, 9, 11-17)	1 Indicator	1 Indicator	3 Indicators	14 Indicators	198 Indicators
Overall Rating for Each Site			SB2	LH1,LH6,LH7	FC1,FC2,FC3,FC4,FC5,FC6,FC7,FC8,FC9,FC10,LH2,LH3,LH4,LH5,LH8,SB1,SB3,SB4,SB5,SB6
Overall Rating for Allotment					X

Allotment Summary for Standard 4 (Native Plant Community)

One indicator (<1%) was marked Extreme for the understory dominance of cheatgrass on one site. One indicator (<1%) was marked Moderate to Extreme, also for an abundance of cheatgrass. Three indicators (1%) were marked Moderate for the having areas of invasive annual grasses. Fourteen indicators (6%) were marked Slight to Moderate due to sagebrush decadence (1); reduced litter amounts (1); loss of topsoil (1); reduced organic matter in the soil (1); the presence of invasive annual grasses (2); the resultant reduction in reproductive capability (1); and reduction of one functional/structural group (7). One hundred ninety eight indicators (92%) were marked None to Slight.

One site was rated moderate and three sites were rated Slight to Moderate overall due to invasive annuals. Twenty sites were rated None to Slight. The overall rating of the assessed indicators for Standard 4 is None to Slight (refer to Appendix 1-1). This overall ranking is primarily a

result of the overall health, stability, and resiliency of the native plant communities in the Flat Top Allotment.

D. Standard 5 (Seedings) and Standard 6 (Exotic Plant Communities other than Seedings)

These Standards do not apply to the Flat Top Allotment.

E. Standard 7 (Water Quality)

A list of water quality limited streams (303(d) list) and the known problems leading to their inclusion is published by the State Department of Environmental Quality (DEQ) on a regular basis. The Shoshone BLM is currently using the 2002 Integrated Report to determine water quality within the Field Office.

Cold Spring Creek is on the list for unknown pollutant. According to the 2002 Integrated Report from the DEQ, they rely “heavily on biology to gauge narrative and numeric criteria. Since DEQ does not collect data to evaluate every possible numeric and narrative criteria, the assessor in many instances will not know the exact cause of the impairment, merely that impairment exists. As an example, an AU found to be not supporting its Aquatic Life Beneficial Use would be placed in Section 5, with the cause stated as ‘UNKNOWN’”.

About 1 mile of Cold Spring Creek flows through BLM land in the South Burgess Pasture. This stretch was not assessed for PFC, because it is listed as an intermittent stream.

F. Standard 8 (Threatened and Endangered Plants and Animals)

BLM Sensitive Plants

There are no federally listed plant species documented within the Flat Top Allotment. However, there are two Type 2 BLM Sensitive Species with potential habitat within the allotment and one Type 3 BLM Sensitive Species documented in the allotment.

Obscure Phacelia (*Phacelia inconspicua*)

Obscure phacelia, a BLM Type 2 Sensitive Species is an erect-stemmed annual that grows primarily on north- or east-aspects in sagebrush, aspen, or mountain shrub communities at approximately 5000 to 8000 ft elevation. This species flowers in June and July. It often grows in rocky or bare sites that are lacking in other vegetation, and in areas that are disturbed by deer or elk, or areas that hold snow drifts late into the season. Soils are often loose, cindery, or sandy and rich in organic matter. Associated species include snowberry, quaking aspen, chokecherry, big sagebrush, western waterleaf, annual pink phlox, and bedstraw.

Obscure phacelia is known from the National Park Service-managed area north of U.S. 20/26/93 in Craters of the Moon, and Pratt Butte and Big Southern Butte in the Idaho Falls Field Office. There is considerable habitat for this species in the foothills of the Pioneer Mountains and the Flat Top Allotment.

Threats to obscure phacelia include activities that cause permanent modification of the soil surface, e.g. mining activity or other types of excavation. This is an annual species that appears

to require some disturbance (e.g. wildlife trailing) or tolerates little competition from other plants.

Least Phacelia (*Phacelia minutissima*)

Least phacelia, a BLM Type 2 Sensitive Species, is a dwarf, branching annual that grows in ephemerally moist, bare-soil areas of riparian zones and meadows in sagebrush-steppe and lower montane forest at approximately 4000 to 8100 ft elevation. Many sites are seepage or snow accumulation sites. This species blooms in July. Associated species include skunk cabbage and quaking aspen.

Least phacelia is known from the Timmerman Hills near McHan Reservoir. There is considerable potential habitat throughout the northern half of the Shoshone Field Office, especially in areas abutting the Sawtooth National Forest.

Threats to least phacelia include activities that cause permanent modification of the soil surface, e.g. mining activity or other types of excavation. While it appears that this species requires some disturbance to reduce vegetative competition, it does not tolerate disturbance from heavy use.

Bugleg Goldenweed (*Haplopappus insecticuriis*)

Bug-leg goldenweed, a BLM Type 3 Sensitive Species, is a perennial yellow composite that occurs in gravelly to heavy clay soils in ephemerally moist herbaceous meadows, swales, and weak drainages in bottomlands or hillsides; saddles dominated by herbaceous vegetation, dryer edges of seeps, and occasionally on stony sites. These sites usually intergrade into dryer sagebrush communities or into the edges of conifer-aspen woodlands, with bugleg goldenweed occurring between the moist communities dominated by sedges or rushes and the uplands where shrubs are dominate. The elevational range of this species is approximately 4500 to 7500 feet. Populations occur in both undisturbed and disturbed communities with various levels of competition. Numerous sites have past as well as on-going disturbance, including road shoulders, fence lines, pastures, corrals, and abandoned fields and road right-of-ways. Bugleg goldenweed blooms in July and August. Associated species include northern mule's-ears, Gairdner's yampah, camas lily, checker-mallow, sego lily, western yarrow, aster, lupine, cinquefoil, Navarretia, tarweed, Great Basin wildrye, bluebunch wheatgrass, bottlebrush squirreltail, oatgrass, bluegrass, Idaho fescue, mountain big sagebrush, early low (alkali) sagebrush, low sagebrush, and rabbitbrush.

Bugleg goldenweed is endemic to the Camas Prairie, Bennett Hills, and the foothills of the Soldier, Smoky, Boulder, and Pioneer Mountains. Several populations of bugleg goldenweed have been documented in the Flat Top Allotment.

Shallow disturbances such as scraping may be tolerated but deep disturbance (excavation for pipelines, cable burial, mining, right-of-way maintenance, trail or road construction, etc.) will kill plants. This species tolerates livestock grazing. Other threats include competition with exotic species and sod-forming grasses.

BLM Sensitive Animals

Type 1 Federally Listed Species are listed by the Fish and Wildlife Service or National Marine Fisheries Service as threatened or endangered, or they are proposed for listing under the Endangered Species Act (ESA). The Type 1 animal species which have been documented in the allotment are the Columbia spotted frog (*Rana luteiventris*), and the gray wolf (*canis lupus*).

The BLM lists additional animals as BLM Sensitive Species in Idaho. Those BLM Sensitive Species with available information that are documented to occur in or near the allotment are discussed below. Additional BLM Sensitive animal species are listed in Appendix 3.

Columbia Spotted Frog (*Rana luteiventris*)

The US Fish and Wildlife Service (USFWS) lists the Columbia spotted frog as a Type 1 candidate species, those that should be considered in early planning decisions to avoid listing. The USFWS advises an evaluation of potential effects on candidate species that may occur in the project area. Frogs are an important indicator of wetland health, due to their sensitivity to water quality (Thompson, 2004). The Columbia spotted frog uses marshy ponds and lakes or slow moving streams (Nussbaum, 1983). In 2005, there were 13 individuals documented in the allotment during a survey, and one was sighted on private land in a small side stream in the Cold Spring Creek drainage during the field assessment.

Gray Wolf (*Canis lupus*)

Gray wolves are listed by USFWS as Type 1 threatened species, but are managed under the ESA's 2005 and 2008 experimental, nonessential population regulations. Wolves have been documented in the Flat Top Allotment. The most recent sighting was in the summer of 2008, when a pack was observed in the Friedman Creek drainage.

Yellow-billed Cuckoo (*Coccyzus americanus*)

The US Fish and Wildlife Service (USFWS) also lists the yellow-billed cuckoo as a Type 1 candidate species. In 2005, an intensive survey for both historic and likely locations for cuckoos was completed (Reynold and Hinkley, 2005). Although there were several confirmed recordings in Idaho, only one area (Stanton Crossing) was confirmed within the Shoshone Field Office boundary. The Yellow-billed cuckoo prefers open woods orchards, and streamside willow and alder groves (Shirley, 1983). These habitats are common in the Flat Top Allotment, especially along the Little Wood River and its larger tributaries.

Northern Leopard Frog (*Rana pipiens*) Type 2

The Northern leopard frog, a BLM Type 2 Sensitive Species, is normally found in well vegetated marshes or ponds, though they can occasionally be found in wet meadows or grassy areas (Nussbaum, 1983). In a survey in 2005, a single individual was reported within the Flat Top Allotment.

Bald Eagle (*Haliaeetus leucocephalus*) Type 2

The bald eagle was recently removed from the endangered species list by the USFWS. Based on its potential to be re-listed, the Service advises agencies evaluate potential effects within project areas, and it is currently managed as a BLM Type 2 Sensitive Species. There are several CDC

observations surrounding the allotment, but none occur within its bounds. However, the bald eagle is likely to use the Little Wood River drainage for foraging and nesting.

Pygmy Rabbit (*Brachylagus idahoensis*) Type 2

Pygmy rabbits, a BLM Type 2 Sensitive Species, are a sagebrush obligate. A 2003 study (Rachlow) indicates a mid level of pygmy rabbit habitat potential. The six habitat priority rankings were based primarily on elevation, slope, soil depth, and soil clay content. This species requires deep loamy soils to dig their burrows, depends solely on sagebrush for winter food, and is thought to be affected by fire. In the 2003 study, there was a possible observation of a pygmy rabbit about 1 mile south of the allotment.

Greater Sage-Grouse (*Centrocercus urophasianus*) Type 2

Greater sage-grouse, a BLM Type 2 Sensitive Species, require large areas of contiguous sagebrush with perennial grass and forb understory to survive and there is considerable knowledge of their habitat requirements in comparison with other sagebrush obligate species. Sagebrush habitats which contain the structural components and habitat diversity necessary to meet the life cycle needs of sage-grouse are also likely to provide suitable habitat conditions for other sagebrush obligate species.

Much of the lower elevation areas of the Flat Top Allotment are identified as Key sage-grouse habitat. Key habitat is defined as areas of generally intact sagebrush that provide sage-grouse habitat during some portion of the year including winter, spring, summer, late brood-rearing, fall, transition sites from winter to spring, spring to summer, and summer/fall to winter. Key habitat may or may not provide adequate nesting, early brood-rearing, and winter cover due to site potential variables, such as elevation, snow depth, lack of early season forbs, limited herbaceous cover, or small sagebrush patch size. None of which are necessarily an indication of rangeland health; they are merely indicators of habitat suitability.

There are five inactive leks in the Flat Top Allotment. There are eleven additional inactive leks and six active sage-grouse leks within five miles of the allotment boundary. Leks are considered active if there has been documented sage-grouse activity within the past five years. Each upland site was assessed for its suitability of sage-grouse breeding, late brood rearing, and winter habitat, and each riparian site was assessed for its late brood rearing habitat. The allotment provides suitable sage-grouse breeding, late brood rearing, and winter habitat in some areas (refer to Tables 6, 7, 8, and 9).

Four sites were determined unsuitable for breeding habitat based on either a slope that is too steep, elevation that is too high, or both. Attributes for marginal breeding habitat ratings include steep slopes (FC7, SB5); sagebrush too tall (SB1, SB5) or too short (SB3); sagebrush cover too heavy (LH5, LH6, SB1) or too light (LH1, SB3); herbaceous height too short (LH5, SB3); and forb cover too low (LH1, LH6, SB2); or a combination of the variables. Twelve sites were determined to be suitable breeding habitat.

Eight upland sites were determined to be marginal late brood rearing habitat. The reasoning for identifying marginal late brood rearing habitat include steep slopes (FC3, FC4, FC5, FC7, SB5); dryness of the site resulting in less succulent forbs (FC8, LH1); and lack of preferred forbs

(SB6). Two sites were determined to be unsuitable late brood rearing habitat due to elevation (FC10); short sagebrush growth form (LH6); and dryness of the site (SB2). Four riparian sites were rated as marginal for a combination of minor erosion (DC, FCS1, FCS4), leading to spotty distribution of preferred forbs (FCS1) and invading upland plant species (DC, FCS4, SFML). Twenty-one riparian sites and thirteen upland sites were determined to be suitable late brood rearing habitat.

Twenty one sites were identified unsuitable or marginal for sage-grouse winter habitat based on the expected snowfall at the site's elevation, the aspect, or the growth form of the sagebrush. Two sites were determined to be suitable sage-grouse winter habitat.

Additional Wildlife

The Idaho Department of Fish and Game (IDFG) has identified those areas within the state that provide important habitat for mule deer, elk, and antelope. The northern portions of both the Burgess and the Lake Hills pastures have areas identified as crucial habitat for both deer and elk.

Potential habitat exists for many additional BLM sensitive species (Appendix 3), migratory songbirds, as well as IDFG 'species of greatest conservation need' though the extent of their use of the allotment is unknown. For more information about IDFG 'species of greatest conservation need' go to http://fishandgame.idaho.gov/cms/tech/CDC/cwcs_table_of_contents.cfm.

Table 6: Sage-grouse Habitat Assessment Worksheet – Breeding Habitat

Habitat Indicator	Suitable Habitat	Marginal Habitat	Unsuitable Habitat
Average Big Sagebrush Canopy Cover	FC2,FC7,LH1,LH2,LH4,LH8,S B2, SB5,SB6	FC1,FC4,FC5,FC6, FC8,FC9,FC10,LH3, LH5,LH6,LH7,SB1	FC3,SB3,SB4
Average Big Sagebrush Height	FC1,FC2,FC3,FC4,FC6,FC8, FC9,FC10,LH2,LH3,LH4,LH6, LH7,LH8,SB4	FC5,FC7,LH1,LH5, SB1,SB2,SB3,SB5, SB6	
Big sagebrush growth form	FC1,FC2,FC4,FC8,FC9,FC10, LH2,LH3,LH4,LH6,LH7,LH8, SB1,SB2,SB3,SB4,SB5,SB6	FC3,FC5,FC6,FC7, LH5	LH1
Average herbaceous grass and forb height	FC1,FC2,FC3,FC4,FC5,FC6, FC7,FC8,FC9,FC10,LH1,LH2, LH3,LH6,LH7,LH8,SB1,SB2, SB4,SB5,SB6	LH4,LH5,SB3	
Average perennial grass canopy cover	FC1,FC2,FC3,FC4,FC5,FC6, FC7,FC8,FC9,FC10,LH1,LH2, LH3,LH4,LH5,LH6,LH7,LH8, SB1,SB2,SB3,SB4,SB5,SB6		
Average forb canopy cover	FC1,FC2,FC3,FC4,FC5,FC6, FC9,FC10,LH2,LH3,LH4,LH5, LH8,SB3,SB4,SB5,SB6	FC7,FC8,SB1	LH1,LH6,SB2
Forb richness (relative to site potential and site guides)	FC1,FC2,FC3,FC4,FC5,FC6, FC7,FC8,FC9,FC10,LH2,LH3, LH4,LH5,LH7,LH8,SB1,SB3, SB4,SB5,SB6	LH1	LH6,SB2
Overall Site Evaluation	FC1,FC2,FC6,FC8,FC9,LH2, LH3,LH4,LH7,LH8,SB4,SB6	FC7,LH1,LH5,LH6, SB1,SB2,SB3,SB5	FC3,FC4,FC5,FC10
Comments: FC2-May be too steep for nesting FC3,FC7-Too steep~60-70% slope FC4,FC5,FC10-Too steep and too high of elevation FC6-Nesting could occur here with lekking on top FC8,FC9,LH7-Good nesting area LH5-38% shrub cover overall-very thick relatively tall growth form & grass & forbs short LH6-Heavy sagebrush cover and few forbs SB2-2% total per forb cover (all layers) and some preferred forbs present so marginal SB4-Good lek site other than slope SB5-Tall sagebrush, 30% canopy & steep slope SB6-Borderline on sage height, but good lek site and adjacent to good nesting			

Table 7: Sage-grouse Habitat Assessment Worksheet – Late Brood Rearing

Habitat Indicator	Suitable Habitat	Marginal Habitat	Unsuitable Habitat
<i>Riparian and Wet Meadow Communities:</i>			
Riparian and wet meadow plant community	LHS1,LHWM,LHP1,SBS1,SBS2,IL,SBP1,FCS1,FCS2,FCS3,LFC,SMFR,LSFM,SFMT,LF,UF,TF,EF,H5,TC,RC,TG	DC,FCS4,LHS2,SFML	
Riparian and wet meadow stability	LHWM,LHP1,SBS1,SBS2,IL,SBP1,FCS2,LFC,SMFR,LF,UF,TF,EF,H5,TC,RC	DC,LHS1,FCS1,FCS3,FCS4,LHS2,SFML,LSFM,SFMT,TG	
Forb availability in uplands and wetland areas	LHS1,LHWM,LHP1,SBS1,SBS2,IL,SBP1,FCS2,FCS3,FCS4,LHS2,LFC,SFML,SMFR,LSFM,SFMT,LF,UF,TF,EF,H5,TC,RC,TG	DC,FCS1	
Proximity of sagebrush cover	DC,LHS1,LHWM,LHP1,SBS1,SBS2,IL,SBP1,FCS1,FCS2,FCS3,FCS4,LHS2,LFC,SFML,SMFR,LSFM,SFMT,LF,UF,TF,EF,H5,TC,RC,TG		
Overall Riparian/Wet Meadow Site Evaluation	LHS1,LHWM,LHP1,SBS1,SBS2,IL,SBP1,FCS2,FCS3,LFC,SMFR,LSFM,SFMT,LF,UF,TF,EF,H5,TC,RC,TG	DC, FCS1, FCS4, SFML,	
<i>Upland Sagebrush Communities</i>			
Forb availability	FC1,FC2,FC3,FC4,FC5,FC6,FC7,FC9,FC10,LH2,LH3,LH4,LH5,LH7,LH8,SB1,SB3,SB4,SB5	FC8,LH1,SB6	LH6,SB2
Overall Upland Site Evaluation	FC1,FC2,FC6,FC9,LH2,LH3,LH4,LH5,LH7,LH8,SB1,SB3,SB4	FC3,FC4,FC5,FC7,FC8,LH1,SB5,SB6	FC10,LH6,SB2
Comments: LHS1-Some evidence of past incision but rip area recovering & habitat overall is suitable FC3,FC4,FC5,FC7,SB5-Once chicks are large enough to traverse slopes okay; creek bottoms more suitable FC8-Plenty of forbs, but dry site, so marginal FC10-Elevation too high LH1-Marginal, due to dryness of site-forbs may senesce by late brood rearing. LH6-Adjacent sites good for brood rearing; this site more of a lekking site SB2-Few forbs present and would not be succulent during late brood rearing			

Table 8: Sage-grouse Habitat Assessment Worksheet – Winter Habitat

Habitat Indicator	Suitable Habitat	Marginal Habitat	Unsuitable Habitat
Sagebrush canopy cover	FC1,FC2,FC4,FC7,FC8, LH1,LH2,LH3,LH5,LH7, LH8,SB1,SB2,SB5,SB6	FC3,FC5,FC6,FC9,FC10, LH4,LH6,SB3,SB4	
Sagebrush height (availability during the winter)	FC2,FC3,FC5,FC6,FC7,FC8, FC9,FC10,LH1,LH2,LH5, LH7,LH8,SB1,SB2, SB5	FC1,FC4,LH3, SB4	LH4,LH6,SB3,SB6
Overall Site Evaluation	FC2,SB2	FC1,FC6,FC7,FC8,LH1, LH2,LH5,LH7,LH8, SB4,SB6	FC3,FC4,FC5,FC9,FC10, LH4,LH6,SB1,SB3,SB5
Comments: LH2-Probably too much snow for suitable winter habitat. FC1,LH3,LH4,LH6-Snow depth & short-medium sagebrush height likely preclude winter use most years FC2,SB5-Snow depth & north face may preclude winter use FC3,FC7,FC8,LH2-Too much snow; high elevation FC4,FC5-Too high elevation & too steep FC6,SB6-Fairly deep snow but could use ridge tops FC9,FC10,LH5,LH8-Snow depth would be too deep LH1-Elevation/snow LH7-High elevation, but on a south facing slope, so may be less snow than other areas SB1-Site is only a portion of landscape-mosaic includes early low sage which is somewhat sparser, but snow is probably too deep for winter. SB3-Low sage and very short; probably exposed by wind, but steepness & elevation limit suitability SB4-North slope, but may be used some years			

Table 9: Forb Abundance Form for Sage-grouse Evaluations

Sage-grouse Preferred Forbs:	None	Rare	Sparse	Common	Abundant
Broomrape (<i>Orobanch</i> spp.)	FC1,FC2,FC3,FC4,FC5,FC6, FC7,FC8,FC9,FC10,LH1,LH2, LH3,LH4,LH5,LH6,LH7,LH8, SB1,SB2,SB3,SB4,SB5,SB6				
Composites:					
Daisies (<i>Erigeron</i> and <i>Aster</i> spp.)	LH1,LH3,LH5,LH6,LH7,LH8, SB2,SB5,SB6	FC3,FC4,FC 9,SB1	FC1,FC2,FC5,FC 6,FC7,FC8,FC10, LH2,SB3,SB4	LH4	
Dandelion, Mt. (<i>Agoseris</i> spp.)	FC3,FC4,FC5,FC7,FC6,FC10, SB2,SB3	SB5,SB6	FC2,FC3,FC9,LH 1,LH2,LH6,SB1	FC8,LH3, LH4,LH4, LH7,SB4	FC1,LH5,LH8
Hawksbeard (<i>Crepis</i> spp.)	FC6,FC7,LH2,SB2,SB3	FC8,LH6,S B5	FC3,FC9,FC10,L H1,LH5,LH7,SB1 ,SB6	FC1,FC2,FC4, LH3,SB4	FC5,LH8
Microsteris (<i>Microseris</i> spp.)	FC2,FC7,LH1,LH2,LH7,SB1, SB2,SB3,SB4,SB6	FC3,LH5	FC1,FC6,FC8,FC 9,FC10,LH3,LH6, SB5	FC4,FC5,LH4	LH8
Prickly lettuce (<i>Lactuca</i> <i>serriola</i>)	FC2,FC3,FC4,FC5,FC6,FC7, FC8,FC9,LH2,LH3,LH4,LH5, LH7,LH8,SB1,SB3,SB5,SB6	FC1,FC10,S B4	LH1,LH6,SB2		
Salsify (<i>Tragopogon</i> <i>dubius</i>)	FC2,FC3,FC4,FC5,FC6,FC9, LH2,LH3,LH4,LH5,LH6,LH7, LH8,SB3,SB5, SB6	FC1,FC8,FC 10,LH1,SB1 ,SB4	SB2		

Sage-grouse Preferred Forbs:	None	Rare	Sparse	Common	Abundant
Dandelion, C. (<i>Taraxacum officinale</i>)	FC1,FC2,FC3,FC4,FC5,FC6,FC7,FC8,FC9,FC10,LH1,LH3,LH4,LH5,LH6,LH7,LH8,SB1,SB2,SB3,SB4,SB5,SB6	LH2			
Desert-parsley (<i>Lomatium</i> and <i>Cymopterus</i> spp.)	FC6,LH1,LH6,SB2,SB5	FC4,FC5,FC7,FC9,FC10,SB4	FC2,FC3,LH2,LH3,LH8,SB1	FC1,FC8,LH4,LH7,SB3	LH5
Everlasting (<i>Antennaria</i> spp.)	FC8,LH1,LH5,LH6,LH7,LH8,SB2	FC6,SB4	FC1,FC2,FC7,FC10,SB1,SB5	FC3,FC5,FC9,LH2,LH3,LH4,SB3,SB6	FC4
Groundsmoke (<i>Gayophytum</i> spp.)	FC1,FC2,FC3,FC4,FC5,FC6,FC7,FC8,FC10,LH1,LH2,LH3,LH4,LH5,LH6,LH7,LH8,SB1,SB2,SB3,SB5,SB6			FC9	
Knotweed (<i>Polygonum</i> spp.)	FC1,FC2,FC3,FC6,FC10,LH1,LH2,LH4,LH5,LH6,SB1,SB2,SB3,SB5,SB6	FC8,FC9,LH3,LH7,LH8	FC4	FC5,FC7	
Legumes (other than <i>Lupinus</i> spp.)					
Clover (<i>Trifolium</i> spp.)	FC2,FC3,FC4,FC6,FC7,FC8,FC9,FC10,LH1,LH2,LH3,LH5,LH6,LH7,SB1,SB2,SB3,SB4,SB6	FC1,SB5		LH4	LH8
Bird's foot tre-foil (<i>Lotus</i> spp.)	FC1,FC2,FC3,FC4,FC5,FC6,FC7,FC8,FC9,FC10,LH1,LH2,LH3,LH4,LH5,LH6,LH7,LH8,SB1,SB2,SB3,SB4,SB5,SB6				
Sweetvetch (<i>Hedysarum</i> spp.)	FC1,FC2,FC3,FC4,FC5,FC6,FC7,FC8,FC9,FC10,LH1,LH2,LH3,LH4,LH5,LH6,LH7,LH8,SB1,SB2,SB3,SB4,SB5,SB6				
Vetch (<i>Vicia</i> spp.)	FC1,FC2,FC3,FC4,FC5,FC6,FC7,FC8,FC9,FC10,LH1,LH2,LH4,LH6,LH7,LH8,SB1,SB2,SB3,SB5			LH3,SB4	LH5
Sweet clover (<i>Melilotus</i> spp.)	FC1,FC2,FC3,FC4,FC5,FC6,FC7,FC8,FC9,FC10,LH1,LH2,LH3,LH4,LH5,LH6,LH7,LH8,SB1,SB2,SB3,SB4,SB5,SB6				
Milkvetch (<i>Astragalus</i> spp.)	FC2,FC3,FC4,FC5,FC6,FC7,FC8,FC9,LH1,LH2,LH3,LH4,LH5,LH6,LH7,LH8,SB1,SB2,SB3,SB4,SB6	FC1,FC10,SB5			
Lupine (<i>Lupinus</i> spp.)	LH1,LH4,SB1,SB2,SB3,SB6	FC8,LH6	FC3,FC4,LH5,SB4,SB5	FC5,FC7,FC10,LH3	FC1,FC2,FC6,FC9,LH2,LH7,LH8
Alfalfa (<i>Medicago</i> spp.)	FC1,FC2,FC3,FC4,FC5,FC6,FC7,FC8,FC9,FC10,LH1,LH2,LH3,LH4,LH5,LH6,LH7,LH8,SB1,SB2,SB3,SB4,SB5,SB6				

Sage-grouse Preferred Forbs:	None	Rare	Sparse	Common	Abundant
Peppergrass (<i>Lepidium</i> spp.)	FC1,FC2,FC3,FC4,FC5,FC7,FC9, LH1,LH2,LH3,LH4,LH5,LH6, LH7,LH8,SB1,SB2,SB3,SB4, SB5,SB6	FC8,FC10	FC6		
Phlox (<i>Phlox</i> spp.)		SB6	FC6,LH6,SB1, SB2,SB3,SB4, SB5	FC3,FC9,LH1, LH3,LH4,LH7	FC1,FC2,FC4,FC5, FC7,FC8,FC10, LH2,LH5,LH8
Prairie star flower (<i>Lithophragma</i> spp.)	FC1,FC2,FC3,FC4,FC5,FC6,FC7, FC8,FC9,FC10,LH1,LH2,LH3, LH5,LH6,LH7,LH8,SB1,SB2, SB3,SB4,SB5,SB6		LH4		
Yarrow (<i>Achillea millefolium</i>)	FC7,FC8,LH1,LH3,LH4,LH6, LH8,SB1,SB2,SB3,SB6		FC1,FC6,FC10, LH5,LH7,SB4	FC2,FC3,FC4, FC5,SB5	FC9,LH2

IV. SUMMARY OF ALLOTMENT STUDIES:

A. Actual Use

Grazing use in the Flat Top Allotment is managed under the Sun Valley Grazing Environmental Impact Statement and the Flat Top Allotment Management Plan of 1984. Prior to the 1985 grazing season, there were 1675 cattle and 2665 sheep AUMs permitted in the allotment. After the 1984 Final Decision, there were 3255 cattle and 1000 sheep AUMs permitted. Average Actual use from 1977 to 1984 was 82% for cattle use, 13% for sheep use, and 51% of the overall AUMs used. From 1985 to 2007, the average actual use was 44% for cattle, 43% for sheep, and 44% overall. A tabular summary of actual use in the allotment for 1977 - 2007 is in Appendix 4.

B. Trend Studies

Trend studies conducted in the Flat Top Allotment include four 3x3 foot range trend plots that were established in 1976, along with one set of four nested frequency transects that was established in 1983, two in 1984, and one in 1987. The range trend plots are designed to show the percent cover of perennial species found within the 3x3 foot plot. The nested frequency data shown is the percent frequency of occurrence of each species along a transect.

1. Friedman Creek Pasture

Two trend plots were located in the Friedman Creek Pasture. The first is in the southern portion of the pasture, near the South Fork of Muldoon Creek and transect FC-2. Data was collected in the trend plot in 1976, 1981, 1987, and 1990 and are summarized in table 10. Bluebunch wheatgrass and Idaho fescue seemed to have decreased, and sagebrush increased in the area from 1976 to 1990. In 1976 and 1981, data was collected at the trend plots late in the year, so the appearance of some forbs over the course of the study does not lead to any conclusions. Overall, the area has transitioned from a grass-dominated to a shrub-dominated community through normal succession, with no apparent trend.

**Table 10: Friedman Creek Pasture Trend Plot 1 Annual Summary
(Percent Composition)**

Species	1976	1981	1987	1990
Bluebunch wheatgrass	61	30	12	12
Idaho fescue	30	43	35	13
Sandberg's bluegrass	9	27	16	27
Longleafed phlox	-	-	25	9
Arrowleaf balsamroot	-	-	-	3
Mountain big sagebrush	-	-	12	34
Antelope bitterbrush	-	-	-	1

Data was collected for the nested frequency transects in 1984, 1987, 1990, and 1993 and are summarized in Table 11. This data indicates some fluctuation in the forb component and a slight increase in sagebrush cover, but a relatively static grass component over the course of the study. This indicates a static trend.

**Table 11: Friedman Creek Pasture Trend Plot 1 Nested Frequency Annual Summary
(Percent Frequency of Occurrence)**

Species	1984	1987	1990	1993
Idaho fescue	59	53	50	59
Thurber needlegrass	1	0	0	0
Sandberg bluegrass	70	75	74	74
Bluebunch wheatgrass	70	75	74	74
Prairie junegrass	1	6	0	0
Bottlebrush squirreltail	8	1	9	19
Fleabane	23	26	0	4
Buckwheat	42	35	21	26
Lupine	24	21	9	12
Ragwort	6	20	20	9
Arrowleaf balsamroot	10	5	5	0
Blue-eyed Mary	3	1	0	0
Bird's beak	5	3	15	45
Wild onion	4	0	0	1
Rockcress	16	18	0	0
Mountain big sagebrush	33	49	42	47
Low sagebrush	13	0	3	7
Green rabbitbrush	5	1	1	0
Antelope bitterbrush	18	11	15	11

The second trend plot in the Friedman Creek Pasture is located less than a mile north of the confluence of Trail Creek and Friedman Creek. Data was collected in the trend plot in 1976, 1981, 1987, and 1990 and are summarized in table 12. Bluebunch wheatgrass appears to have decreased as sagebrush increased between 1976 and 1990. This indicates a natural successional progression, with no trend apparent.

**Table 12: Friedman Creek Pasture Trend Plot 2 Annual Summary
(Percent Composition)**

Species	1976	1981	1987	1990
Idaho Fescue	23	45	31	24
Sandberg's bluegrass	3	6	7	5
Bluebunch wheatgrass	35	36	26	6
Thurber's needlegrass	13	6	1	-
Mountain big sagebrush	1	6	34	65

Data were collected for the nested frequency transects in 1984, 1987, 1990, and 1993 and are summarized in Table 13. The nested frequency data indicates that Idaho fescue and sagebrush have increased over the course of the study with a decrease in Thurber's needlegrass. The other grasses have been relatively static, with minor fluctuations in the forb component. Considering that this is a mountain big sagebrush/Idaho fescue Ecological Site, the increase in Idaho fescue and mountain big sagebrush with the decrease in Thurber's needlegrass indicates an upward trend at this study site.

**Table 13: Friedman Creek Pasture Trend Plot 2 Nested Frequency Annual Summary
(Percent Frequency of Occurrence)**

Species	1984	1987	1990	1993
Idaho fescue	23	71	82	90
Bottlebrush squirreltail	29	25	5	20
Thurber's needlegrass	81	58	0	0
Bluebunch wheatgrass	48	31	56	56
Sandberg's bluegrass	69	81	81	86
Mountain brome	11	0	0	1
Great basin wildrye	1	0	0	4
Prairie junegrass	1	21	0	0
Hood's phlox	1	0	0	0
Silverleaf phacelia	1	0	0	0
Longleafed phlox	48	53	41	46
Buckwheat	4	6	13	2
Rockcress	16	21	0	0
Lupine	14	19	20	9
Fleabane	3	0	0	4
Wooly pussytoes	1	1	0	0
Bird's beak	1	0	2	9
Brewer's navarretia	1	0	0	0
Antelope bitterbrush	13	18	20	29
Mountain big sagebrush	36	31	42	60

2. Lake Hills Pasture

The trend plot in the Lake Hills Pasture is located just south of Campbell Reservoir. Data was collected in the trend plot in 1976, 1979, 1982, 1987, and 1991 and are summarized in table 14. Thurber's needlegrass increased between 1976 and 1991, while other species decreased. Most

notable is the steady increase in sagebrush, followed by its disappearance between 1987 and 1991. As shown through photographs (located at the Shoshone Field Office), this was the growth and death of a single sagebrush plant, followed by the establishment of a new seedling. The trend at this site is not apparent.

**Table 14: Lake Hills Pasture Trend Plot Annual Summary
(Percent Composition)**

Species	1976	1979	1982	1987	1991
Thurber's needlegrass	5	30	17	9	71
Bluebunch wheatgrass	32	24	23	5	24
Sandberg's bluegrass	1	14	23	10	-
Idaho fescue	9	16	2	-	-
Longleafed phlox	2	-	-	-	5
Lupine	51	-	6	1	-
Mountain big sagebrush	-	16	29	50	trace
Grey horsebrush	-	-	-	25	-
Bottlebrush squirreltail	-	-	-	-	Trace

Data were collected for the nested frequency transects in 1987, 1991, and 1995 and are summarized in Table 15. The nested frequency data indicates an increase in Idaho fescue and many opportunistic species, along with a decrease in Thurber's needlegrass and sagebrush. A decrease in Thurber's needlegrass and sagebrush with an increase in opportunistic species, such as Japanese brome, indicates a downward trend. However, an increase in the frequency of Idaho fescue and other desirable forbs, such as fleabane and knotweed (sage-grouse preferred forbs), indicates an upward trend. Considering the conflicting indicators, the trend at this site cannot be determined at this time.

**Table 15: Lake Hills Pasture Trend Plot Nested Frequency Annual Summary
(Percent Frequency of Occurrence)**

Species	1987	1991	1995
Sandberg's bluegrass	83	65	44
Bluebunch wheatgrass	73	67	64
Thurber's needlegrass	31	21	12
Idaho fescue	13	15	27
Bottlebrush squirreltail	4	4	4
Japanese brome	0	0	15
Knotweed	0	0	61
Pussytoes	4	7	1
Longleafed phlox	29	13	25
Rockcress	16	0	0
Lupine	41	16	34
Buckwheat	26	22	26
Yarrow	11	1	6
Bird's beak	0	0	93
Fleabane	0	0	7

Wild onion	0	0	27
Salsify	0	0	1
Mountain big sagebrush	35	32	16
Grey horsebrush	5	0	0
Antelope bitterbrush	1	0	0

3. South Burgess Pasture

The trend plot in the South Burgess Pasture is located in the Cold Spring Creek drainage, about a mile north of sit SB-5. Data was collected in the trend plot in 1976, 1980, 1983, 1987, and 1990 and are summarized in table 16. Bluebunch wheatgrass appears to have decreased as Columbia needlegrass increased between 1976 and 1990. Lupine also has appeared and become a major part of the community. Other species remained relatively static. The trend at this site is not apparent.

**Table 16: South Burgess Pasture Trend Plot Annual Summary
(Percent Composition)**

Species	1976	1980	1983	1987	1990
Bluebunch wheatgrass	61	86	37	19	20
Columbia needlegrass	24	9	22	23	41
Bottlebrush squirreltail	5	5	11	9	7
Great Basin wildrye	10	-	-	-	-
Lupine	-	-	20	49	31
Bird's beak	-	-	10	-	-
Sego lily	-	-	-	-	1

Data were collected for the nested frequency transects in 1983, 1987, and 1990 and are summarized in Table 17. The nested frequency data indicates an increase in the mid-sized bunchgrasses and sagebrush, with a reduction in Great Basin wildrye. All indications show a relatively static trend over the course of the study with a natural successional procession.

**Table 17: South Burgess Pasture Trend Plot Nested Frequency Annual Summary
(Percent Frequency of Occurrence)**

Species	1983	1987	1990
Bluebunch wheatgrass	38	16	46
Western needlegrass	31	24	63
Japanese brome	31	64	59
Great Basin wildrye	29	16	1
Bottlebrush squirreltail	3	1	2
Sedge	3	4	2
Thistle	3	0	2
Salsify	38	38	55
Knotweed	43	0	0
Lupine	21	23	21
Prickly lettuce	11	21	20
Yarrow	8	6	11

Wild onion	13	0	2
Bird's beak	8	0	0
Buckwheat	1	0	0
Rockcress	3	0	0
Fireweed	1	0	0
Silver sagebrush	5	0	0
Mountain big sagebrush	10	11	20
Antelope bitterbrush	1	0	1

C. Utilization Studies

Utilization mapping has been conducted in the Flat Top Allotment periodically, since 1977. These maps show typical use patterns with heavier use areas concentrated around water sources. Utilization becomes increasingly lighter beyond the drainage bottoms and flats, and the more remote areas of the allotment. The original utilization maps and transect data are located in the Flat Top Allotment Studies File at the Shoshone BLM Field Office.

V. LITERATURE CITED:

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Appendix 1-1 2005

Qualitative Assessment Worksheet: Indicators of Rangeland Health

Degree of Departure from Ecological Site Description and/or Ecological Reference Area(s)					
Indicator	Extreme	Moderate to Extreme	Moderate	Slight to Moderate	None to Slight
1. Rills	Rill formation is severe and well defined throughout most of the site.	Rill formation is moderately active and well defined throughout most of the site.	Active rill formation is slight at infrequent intervals; mostly in exposed areas.	No recent formation of rills; old rill have blunted or muted features.	Current or past formation of rills as expected for the site.
2. Water Flow Patterns	Water flow patterns extensive and numerous; unstable with active erosion; usually connected.	Water flow patterns more numerous and extensive than expected; deposition and cut areas common; occasionally connected.	Number and length of water flow patterns nearly match what is expected for the site; erosion is minor with some instability and deposition.	Number and length of water flow patterns match what is expected for the site; some evidence of minor erosion. Flow patterns are stable and short.	Matches what is expected for the site; minimal evidence of past or current soil deposition or erosion.
3. Pedestals and/or Terracettes (Wind and Water)	Abundant active pedestalling and numerous terracettes. Many rocks and plants are pedestalled; exposed plant roots are common.	Moderate active pedestalling; terracettes common. Some rocks and plants are pedestalled with occasional exposed roots.	Slight active pedestalling; most pedestals are in flow paths and interspaces and/or on exposed slopes. Occasional terracettes present.	Active pedestalling or terracette formation is rare; some evidence of past pedestal formation, especially in water flow patterns and on exposed slopes.	Current or past evidence of pedestalled plants or rocks as expected for the site. Terracettes absent or uncommon.
4. Bare Ground	Much higher than expected for the site. Bare areas are large and generally connected.	Moderately to much higher than expected for the site. Bare areas are large and occasionally connected.	Moderately higher than expected for the site. Bare areas are of moderate size and sporadically connected.	Slightly to moderately higher than expected for the site. Bare areas are small and rarely connected.	Amount and size of bare areas match that expected for the site.
5. Gullies	Common with indications of active erosion and downcutting; vegetation is infrequent on slopes and/or bed. Nickpoints and headcuts are numerous and active.	Moderate in number to common with indications of active erosion; vegetation is intermittent on slopes and/or bed. Headcuts are active; downcutting is not apparent.	Moderate in number with indications of active erosion; vegetation is intermittent on slopes and/or bed. Occasional headcuts may be present.	Uncommon, vegetation is stabilizing the bed and slopes; no signs of active headcuts, nickpoints, or bed erosion.	Match what is expected for the site; drainages are represented as natural stable channels; vegetation common and no signs of erosion.
6. Wind-Scoured, Blowout, and/or Depositional Areas	Extensive.	Common.	Occasionally present.	Infrequent and few.	Match what is expected for the site.
7. Litter Movement (wind or water)	Extreme; concentrated around obstructions. Most size classes of litter have been displaced.	Moderate to extreme; loosely concentrated near obstructions. Moderate to small size classes of litter have been displaced.	Moderate movement of smaller size classes in scattered concentrations around obstructions and in depressions.	Slightly to moderately more than expected for the site with only small size classes of litter being displaced.	Matches that expected for the site with a fairly uniform distribution of litter.
8. Soil Surface Resistance to Erosion	Extremely reduced throughout the site. Biological stabilization agents including organic matter and biological crusts virtually absent.	Significantly reduced in most plant canopy interspaces and moderately reduced beneath plant canopies. Stabilizing agents present only in isolated patches.	Significantly reduced in at least half of the plant canopy interspaces, or moderately reduced throughout the site.	Some reduction in soil surface stability in plant interspaces or slight reduction throughout the site. Stabilizing agents reduced below expected.	Resistance of soil surface to erosion matches that expected for the site. Surface soil is stabilized by organic matter decomposition products and/or a biological crust.

Appendix 1-1 continued 2005
Qualitative Assessment Worksheet: Indicators of Rangeland Health

Degree of Departure from Ecological Site Description and/or Ecological Reference Area(s)					
Indicator	Extreme	Moderate to Extreme	Moderate	Slight to Moderate	None to Slight
9. Soil Surface Loss or Degradation	Soil surface horizon absent. Soil structure near surface is similar to, or more degraded, than that in subsurface horizons. No distinguishable difference in subsurface organic matter content.	Soil loss or degradation severe throughout site. Minimal differences in soil organic matter content and structure of surface and subsurface layers.	Moderate soil loss or degradation in plant interspaces with some degradation beneath plant canopies. Soil structure is degraded and soil organic matter content is significantly reduced.	Some soil loss has occurred and/or soil structure shows signs of degradation, especially in plant interspaces.	Soil surface horizon intact. Soil structure and organic matter content match that expected for site.
10. Plant Community Composition & Distribution Relative to Infiltration & Runoff	Infiltration is severely decreased due to adverse changes in plant community composition and/or distribution. Adverse plant cover changes have occurred.	Infiltration is greatly decreased due to adverse changes in plant community composition and/or distribution. Detrimental plant cover changes have occurred.	Infiltration is moderately reduced due to adverse changes in plant community composition and/or distribution. Plant cover changes negatively affect infiltration.	Infiltration is slightly to moderately affected by minor changes in plant community composition and/or distribution. Plant cover changes have only a minor effect on infiltration.	Infiltration and runoff are not affected by any changes in plant community composition and distribution. Any changes in infiltration and runoff can be attributed to other factors (e.g. compaction).
11. Compaction Layer	Extensive; severely restricts water movement and root penetration.	Widespread; greatly restricts water movement and root penetration	Moderately wide-spread, moderately restricts water movement and root penetration.	Rarely present or is thin and weakly restrictive to water movement and root penetration.	Matches that expected for the site; none to minimal, not restrictive to water movement and root penetration.
12. Functional/Structural Groups	Number of F/S groups greatly reduced and/or Relative dominance of F/S groups has been dramatically altered and/or Number of species within F/S groups dramatically reduced.	Number of F/S groups reduced and/or one dominant group and/or one or more sub-dominant group replaced by F/S groups not expected for the site and/or Number of species within F/S groups significantly reduced.	Number of F/S groups moderately reduced and/or One or more subdominant F/S groups replaced by F/S groups not expected for the site and/or Number of species within F/S groups moderately reduced.	Number of F/S groups slightly reduced and/or Relative dominance of F/S groups has been modified from that expected for the site and/or number of species within F/S slightly reduced.	F/S groups and number of species in each group closely match that expected for the site.
13. Plant Mortality/Decadence	Dead and/or decadent plants are common.	Dead plants and/or decadent plants are somewhat common.	Some dead and/or decadent plants are present.	Slight plant mortality and/or decadence.	Plant mortality and decadence match that expected for the site.
14. Litter Amount	Largely absent or dominant relative to site potential and weather.	Greatly reduced or increased relative to site potential and weather.	Moderately more or less relative to site potential and weather.	Slightly more or less relative to site potential and weather.	Amount is what is expected for the site potential and weather.
15. Annual Production	Less than 20% of potential production for the site based on recent weather.	20-40% of potential production for the site based on recent weather.	40-60% of potential production for the site based on recent weather.	60-80% of potential production for the site based on recent weather.	Exceeds 80% of potential production for the site based on recent weather.
16. Invasive Plants	Dominate the site.	Common throughout the site.	Scattered throughout the site.	Present primarily in disturbed areas within the site.	If present, composition of invasive species matches that expected for the site.
17. Reproductive Capability of Perennial Plants	Capability to produce seed or vegetative tillers is severely reduced relative to recent climatic conditions.	Capability to produce seed or vegetative tillers is greatly reduced relative to recent climatic conditions.	Capability to produce seed or vegetative tillers is moderately reduced relative to recent climatic conditions.	Capability to produce seed or vegetative tillers is slightly limited relative to recent climatic conditions.	Capability to produce seed or vegetative tillers is not reduced relative to recent climatic conditions.

Appendix 1-2 Standard Checklist For Lotic Riparian

Yes	No	N/A	Hydrologic		Yes	No	N/A	Vegetative		Yes	No	N/A	Soils-Erosion Deposition
			1. Floodplain above bankfull inundated in “relatively frequent” events					6. There is diverse age-class distribution of riparian wetland vegetation (recruitment for maintenance/recovery)					13. Flood plain and channel characteristics (i.e., rocks overflow channel, coarse and/or large woody material) are adequate to dissipate energy
			2. Where beaver dams are present they are active and stable					7. There is diverse composition of riparian-wetland vegetation (for maintenance/recovery)					14. Point bars are revegetating with riparian-wetland vegetation
			3. Sinuosity, width/depth ratio, and gradient are in balance with the landscape setting (i.e., landform, geology, and bioclimatic region)					8. Species present indicate maintenance of riparian soil moisture characteristics					15. Lateral stream movement is associated with natural sinuosity
			4. Riparian-wetland area is widening or has achieved potential extent					9. Streambank vegetation is comprised of those plant or plant communities that have root masses capable of withstanding high streamflow events					16. System is vertically stable
			5. Upland watershed is not contributing to riparian degradation					10. Riparian-wetland plants exhibit high vigor					17. Stream is in balance with the water and sediment being supplied by the watershed (i.e. no excessive erosion or deposition)
								11. Adequate riparian-wetland vegetative cover present to protect banks and dissipate energy during high flows					
								12. Plant communities are an adequate source of coarse and/or large woody material (for maintenance/recovery)					

Standard Checklist for Lentic Riparian

Yes	No	N/A	Hydrologic		Yes	No	N/A	Vegetative		Yes	No	N/A	Soils-Erosion Deposition
			1. Riparian-wetland area is saturated at or near the surface or inundated in “relatively frequent” events					8. Diverse age-class distribution (recruitment for maintenance or recovery)					16. Accumulation of chemicals affecting plant productivity/composition is not apparent
			2. Fluctuation of water levels is not excessive					9. Diverse composition of vegetation (for maintenance/recovery)					17. Saturation of soils (i.e., ponding, flooding frequency and duration) is sufficient to compose and maintain hydric soils
			3. Riparian-wetland zone is enlarging or has achieved potential extent					10. Species present indicate maintenance of riparian-wetland soil moisture characteristics					18. Underlying geologic structure/soil material/permafrost is capable of restricting water percolation
			4. Upland watershed is not contributing to riparian-wetland degradation					11. Vegetation is comprised of those plants or plant communities that have root masses capable of withstanding wind events, wave flow events, or overland flows(e.g., storm events, snowmelt)					19. Riparian-wetland is in balance with water and sediment being supplied by the watershed (i.e., no excessive erosion or deposition)
			5. Water quality is sufficient to support riparian-wetland degradation					12. Riparian-wetland plants exhibit high vigor					20. Islands and shoreline characteristics (i.e., rocks, course and/or large woody debris) adequate to dissipate wind and wave event energies
			6. Natural surface or subsurface flow patterns are not altered by disturbance (i.e., hoof action, dam, dikes, trails, roads, rills, gullies, drilling activities)					13. Adequate vegetative cover present to protect shorelines/soil surface and dissipate energy during high wind and wave events or overland flows					
			7. Structure accommodates safe passage of flows (e.g., no headcut affecting dam or spillway)					14. Frost or abnormal hydrologic heaving is not present					
								15. Favorable microsite conditions (i.e., woody debris, water temperature, etc.) is maintained by adjacent site characteristics					

Standard 8 Sage-grouse Habitat Assessment Worksheet - Breeding Habitat

Habitat Indicator	Suitable Habitat	Marginal Habitat	Unsuitable Habitat
Average Sagebrush Canopy Cover	$\geq 15\%$ but $\leq 25\%$	10-15% or $>25\%$	$<10\%$
Average Sagebrush Height			
Mesic Site	15-30"	10-14" or $> 30"$	$< 10"$
Arid Site	12-30"	10-11" or $> 30"$	$< 10"$
Sagebrush Growth Form	Spreading form, few, if any, dead branches for most plants	Mix of spreading and columnar growth forms present	Tall, columnar growth form with dead branches for most plants
Average Grass and Forb Height	$\geq 7"$	5 - $<7"$	$< 5"$
Average Perennial Grass Canopy Cover			
Mesic Site	$\geq 15\%$	5 - $< 15\%$	$< 5\%$
Arid Site	$\geq 10\%$	5 - $< 10\%$	$< 5\%$
Average Forb Canopy Cover			
Mesic Site	$\geq 10\%$	5 - $< 15\%$	$< 5\%$
Arid Site	$\geq 5\%$	5 - $< 10\%$	$< 3\%$
Preferred Forb Abundance and Diversity	Forbs common with at least a few preferred species present	Forbs common but only 1 or 2 preferred species present	Forbs rare to sparsely present

Standard 8 Sage-grouse Habitat Assessment Worksheet - Late Brood-rearing

Indicator	Suitable Habitat	Marginal	Unsuitable Habitat
Riparian and Wet Meadow Communities:			
Riparian and wet meadow plant community	Mesic or wetland plant species dominate wet meadow or riparian area	Xeric plant species invading wet meadow or riparian area	Xeric plant species along water's edge or near center of wet meadow
Riparian and wet meadow stability	No erosion evident; some bare ground may be evident but vegetative cover dominates the site	Minor erosion occurring and bare ground may be evident but vegetative cover dominates the site	Major erosion evident; large patches of bare ground
Forb availability in uplands and wetland areas	Succulent, green forbs are readily available in terms of distribution and plant structure	Succulent, green forbs are available though distribution is spotty or plant structure limits effective use	Succulent, green forbs are not available
Proximity of sagebrush cover	Sagebrush cover is adjacent to brood-rearing area (< 100 yards)	Sagebrush cover is in close proximity (100 - 300 yards) of brood-rearing areas	Sagebrush cover is unavailable (> 300 yards).
Upland Sagebrush Communities:			
Forb availability	Succulent, green forbs are readily available in terms of distribution and plant structure	Succulent, green forbs are available though distribution is spotty or plant structure limits effective use	Succulent, green forbs are scarce or not available despite favorable growing conditions

Standard 8 Sage-grouse Habitat Assessment Worksheet - Winter Habitat

Habitat Indicator	Suitable Habitat	Marginal Habitat	Unsuitable Habitat
Sagebrush canopy cover	10-30%	5- 9% or $>30\%$	$< 5\%$
Sagebrush height (availability during the winter)	Generally tall or a diversity of sagebrush heights present relative to species and site potential	Some tall plants but generally more moderate to short plants relative to species and site potential	Poor height diversity with generally short plants relative to species and site potential

Appendix 1-3 - continued

Site Forb Abundance Form for Sage-grouse Evaluations (5/23/01)

Sage-grouse Preferred Forbs:	None	Rare	Sparse	Common	Abundant	Other Plants	Wildlife
Broomrape (<i>Orobanch</i> spp.)						Shrubs	
Composites:							
Daisies (<i>Erigeron</i> and <i>Aster</i> spp.)							
Dandelion, Mt. (<i>Agoseris</i> spp.)							
Hawksbeard (<i>Crepis</i> spp.)							
Microsteris (<i>Microseris</i> spp.)						Grasses	
Prickly lettuce (<i>Lactuca serriola</i>)							
Salsify (<i>Tragopogon dubius</i>)							
Dandelion, C. (<i>Taraxacum officinale</i>)							
Desert-parsley (<i>Lomatium</i> and <i>Cymopterus</i> spp.)							
Everlasting (<i>Antennaria</i> spp.)							
Groundsmoke (<i>Gayophytum</i> spp.)						Other Forbs	
Knotweed (<i>Polygonum</i> spp.)							
Legumes (other than <i>Lupinus</i> spp.)							
Clover (<i>Trifolium</i> spp.)							
Bird's foot tre-foil (<i>Lotus</i> spp.)							
Sweetvetch (<i>Hedysarum</i> spp.)							
Vetch (<i>Vicia</i> spp.)							
Sweet clover (<i>Melilotus</i> spp.)							
Milkvetch (<i>Astragalus</i> spp.)							
Lupine (<i>Lupinus</i> spp.)							
Alfalfa (<i>Medicago</i> spp.)							
Peppergrass (<i>Lepidium</i> spp.)							
Phlox (<i>Phlox</i> spp.)							
Prairie star flower (<i>Lithophragura</i> spp.)							
Yarrow (<i>Achillea millifolium</i>)							
Noxious Weeds							
Invasive Annuals							
Comments on Abundance/Diversity							

Sagebrush Form (spreading/columnar/mixed) [circle one]

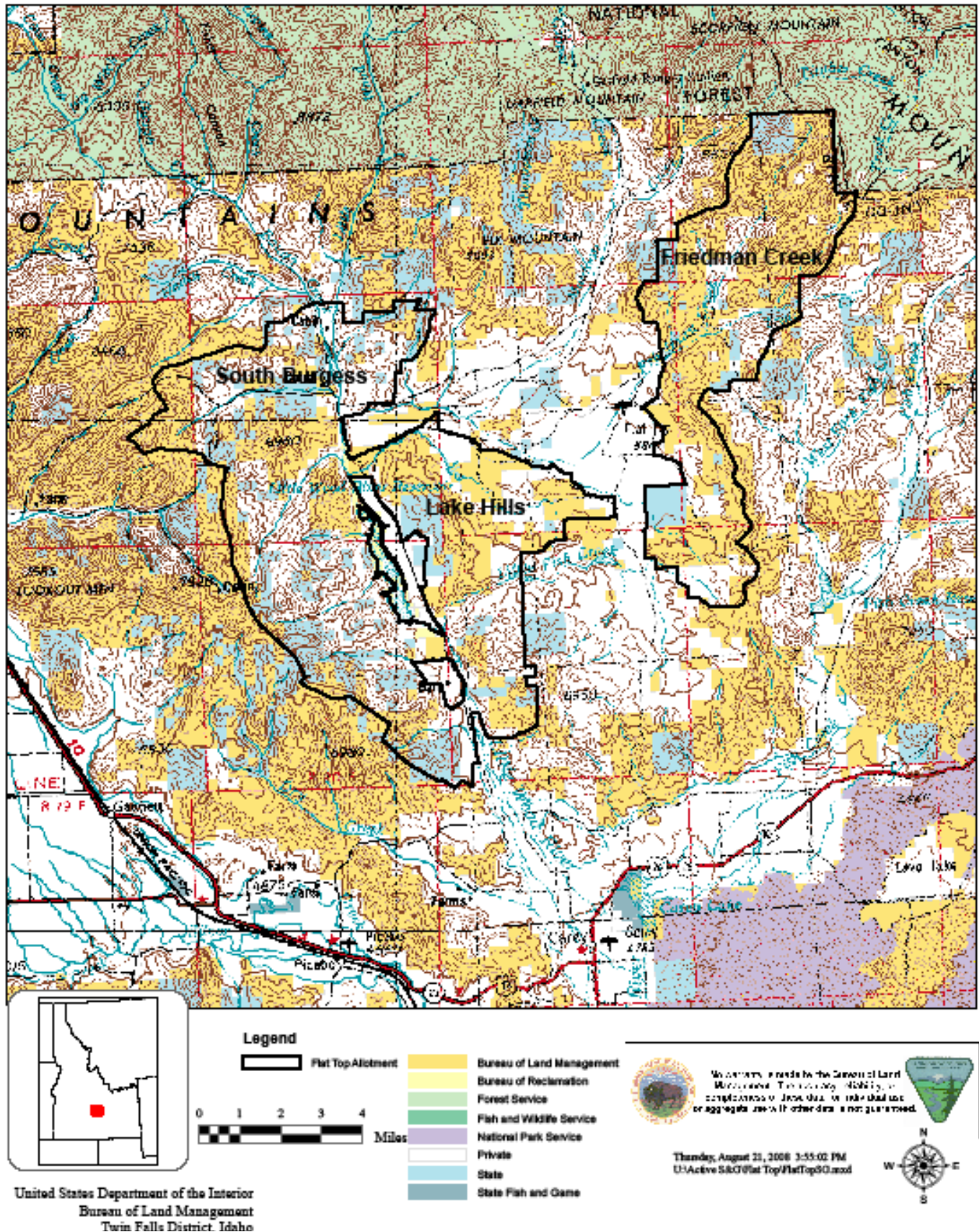
Sagebrush condition _____

Shrubs species composition _____% _____% _____%

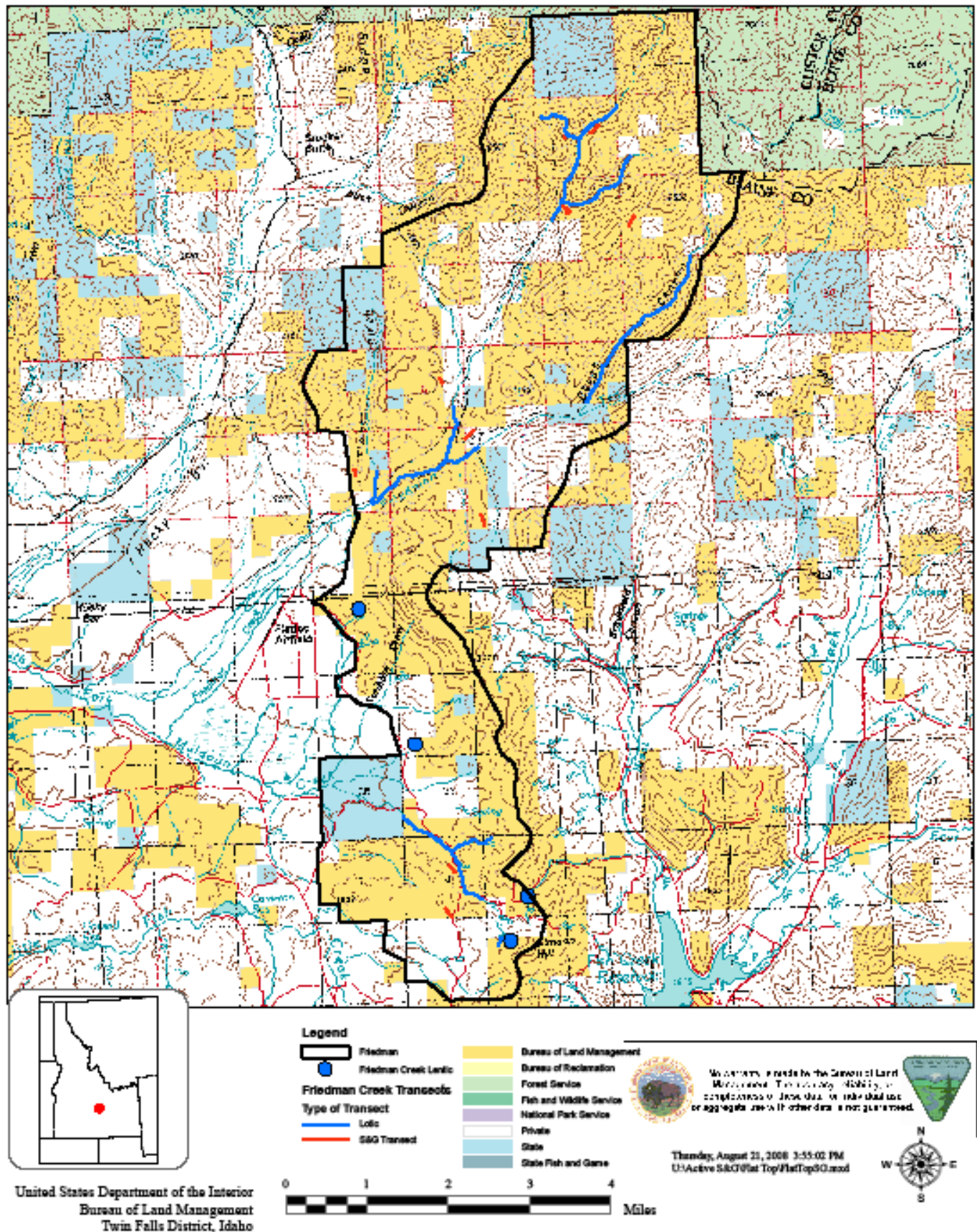
Sage-grouse sign (GPS sage-grouse nest sites, or brood locations) Easting _____ Northing _____

Site Summary	Suitable	Marginal	Unsuitable
Circle one of the following	Forbs are common with at least a few preferred species present	Forbs are common but only 1 or 2 preferred species present	Forbs are rare to sparsely present

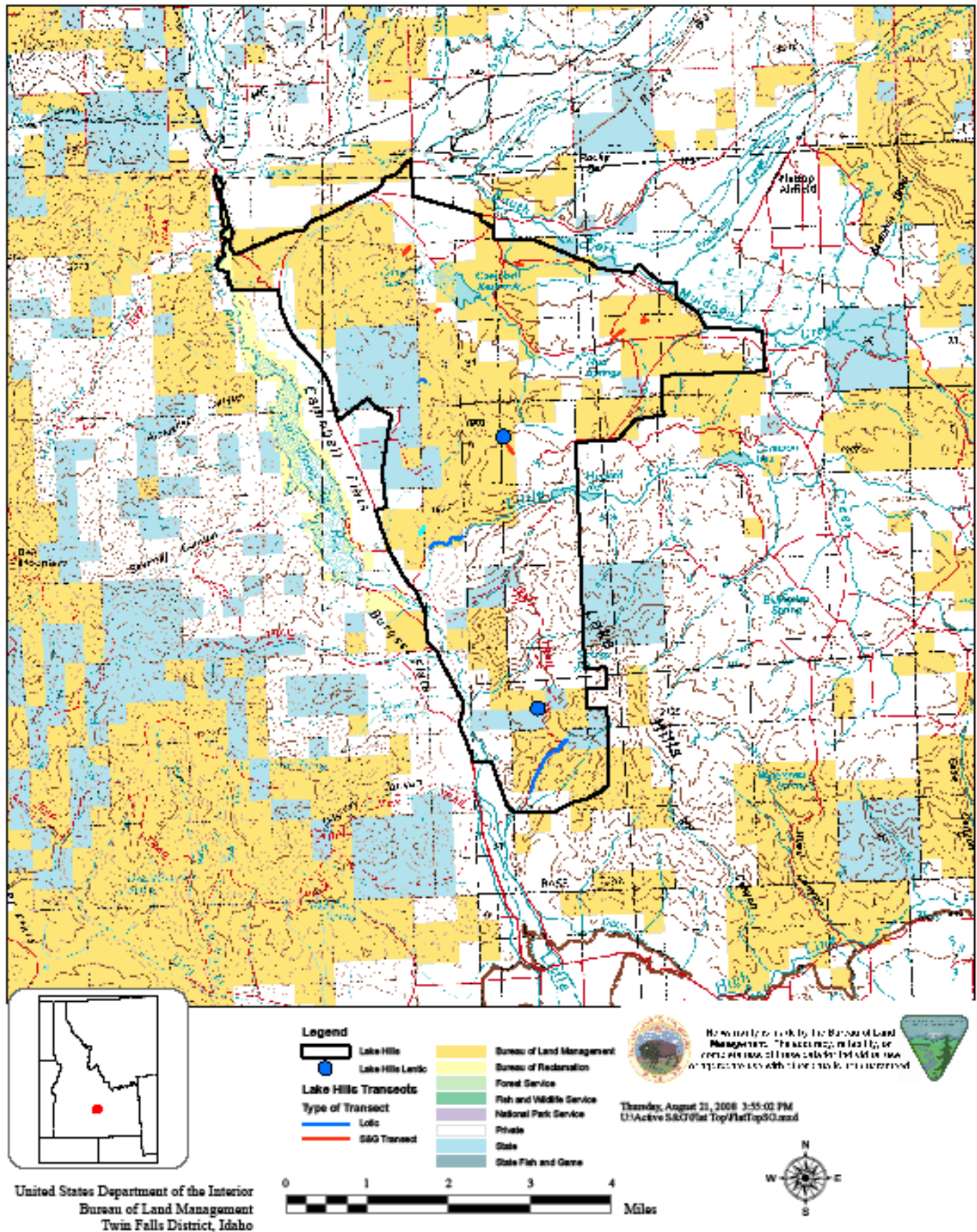
FLAT TOP ALLOTMENT



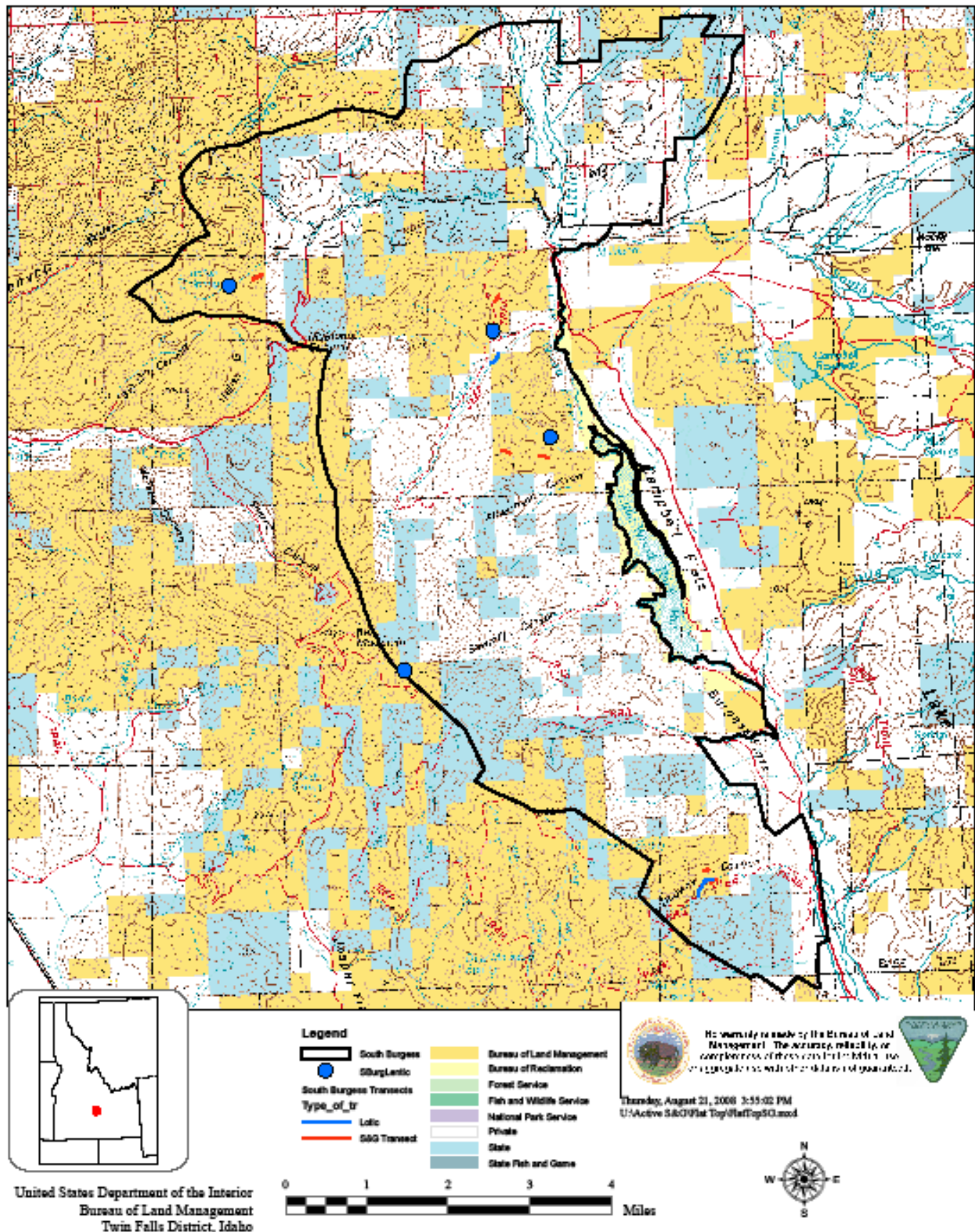
FRIEDMAN CREEK PASTURE



LAKE HILLS PASTURE



SOUTH BURGESS PASTURE



Appendix 3: Federally Listed (USFWS) and BLM Sensitive Species

Federally Listed and BLM Sensitive Animal Species that may occur in the project area		
Common Name	Scientific Name	General Habitat Use
Type 1-Threatened (T), Endangered (E), or Candidate (C)		
Gray Wolf	<i>Canis lupus</i>	Forest, Sagebrush, Riparian
Yellow-billed Cuckoo (C)	<i>Coccyzus americanus</i>	Riparian
Columbia Spotted Frog (C)	<i>Rana luteiventris</i>	Riparian
Type 2-Rangewide/Globally Imperiled Species		
Greater Sage-grouse	<i>Centrocercus urophasianus</i>	Sagebrush, Riparian
Canada Lynx	<i>Lynx canadensis</i>	Forest
Bald Eagle	<i>Haliaeetus leucocephalus</i>	Forest, Sagebrush, Riparian
Pygmy Rabbit	<i>Brachylagus idahoensis</i>	Sagebrush
Boreal Toad	<i>Bufo boreas boreas</i>	Riparian
Northern Leopard Frog	<i>Rana pipiens</i>	Riparian
Type 3-Regional/State Imperiled Species		
Townsend's Big-eared Bat	<i>Plecotus townsendii</i>	Sagebrush, Grassland, Cave
Fringed Myotis	<i>Myotis thysanodes</i>	Sagebrush, Grassland, Cave
Fisher	<i>Martes pennanti</i>	Forest, Riparian
Wolverine	<i>Gulo gulo luscus</i>	Forest, Riparian
Prairie Falcon	<i>Falco mexicanus</i>	Sagebrush, Grassland
Peregrine Falcon	<i>Falco peregrinus anatum</i>	
Northern Goshawk	<i>Accipiter gentilis</i>	Forest, Grassland, Sagebrush, Riparian
Ferruginous Hawk	<i>Buteo regalis</i>	Forest, Grassland, Sagebrush, Riparian
Mountain Quail	<i>Oreotyx pictus</i>	Forest, Grassland, Sagebrush, Riparian
Flammulated Owl	<i>Otus flammeolus</i>	Forest, Grassland, Sagebrush, Riparian
Lewis's Woodpecker	<i>Melanerpes lewis</i>	Forest
Willow Flycatcher	<i>Empidonax trailii</i>	Forest, Riparian
Grasshopper Sparrow	<i>Ammodramus savannarum</i>	Grassland, Sagebrush
Loggerhead Shrike	<i>Lanias ludovicianus</i>	Sagebrush
Brewer's Sparrow	<i>Spizella breweri</i>	Sagebrush
Sage Sparrow	<i>Amphispiza belli</i>	Sagebrush
Common Garter Snake	<i>Sonora semiannulata</i>	Forest, Riparian
Western Toad	<i>Bufo boreas</i>	Forest, Riparian

Federally Listed and BLM Sensitive Animal Species that may occur in the project area		
Type 4-Idaho Peripheral Species		
California Myotis	<i>Myotis californicus</i>	Sagebrush, Grassland, Cave
White-faced Ibis	<i>Plegadis chihi</i>	Grassland, Riparian
Virginia's Warbler	<i>Vermivora virginiae</i>	Forest, Grassland, Sagebrush, Riparian
Black-throated Sparrow	<i>Amphispiza bilineata</i>	Grassland, Sagebrush, Riparian
<p>Type 1-Threatened, Endangered, and Proposed Species -These species are listed by the Fish and Wildlife Service or National Marine Fisheries Service as threatened or endangered, or they are proposed for listing under the Endangered Species Act.</p> <p>Type 2- Range-wide/Globally Imperiled Species -These are species designated as FWS candidate or are ranked by the Natural Heritage program network as globally rare to critically imperiled.</p> <p>Type 3-Regional/State Imperiled Species -These are species that are in danger of becoming extirpated from Idaho in the foreseeable future if factors contributing to their decline, or habitat degradation or loss, continue.</p> <p>Type 4-Peripheral Species -These are species that are in danger of becoming extirpated from Idaho and (a) may be local endemics with currently low threat levels or (b) peripheral, rare species in Idaho.</p>		

Appendix 4: Actual Use Summary

Year	Type of Animal	Grazing Use Period	Number of Livestock	Active Preference (AUMs)	AUMs Used	Percent of Active Use
1977	Cattle	04/28 – 11/04	1061	1675	2314	138%*
	Sheep	05/01 – 11/04	6600	2665	250	9%
	Horses	04/29 – 11/15	23	0	83	-*
	Total			4340	2647	61%
1978	Cattle	05/08 – 11/20	1029	1675	2119	127%*
	Sheep	05/22 – 11/16	6720	2665	330	12%
	Horses	05/08 – 11/20	25	0	112	-*
	Total			4340	2561	59%
1979	Cattle	05/04 – 11/16	1248	1675	2136	128%*
	Sheep	05/17 – 07/15	6650	2665	354	13%
	Horses	05/01 – 11/30	20	0	96	-*
	Total			4340	2586	60%
1980	Cattle	05/09 – 11/20	923	1675	1788	107%*
	Sheep	05/12 – 08/05	6225	2665	299	11%
	Horses	05/14 – 11/20	20	0	86	-*
	Total			4340	2173	50%
1981	Cattle	04/08 – 11/13	1030	1675	1750	104%*
	Sheep	05/11 – 07/31	6550	2665	363	14%
	Horses	05/01 – 11/20	20	0	92	-*
	Total			4340	2205	51%
1982	Cattle	04/26 – 11/01	1028	1675	1366	82%
	Sheep	05/14 – 07/25	5725	2665	338	13%
	Horses	07/16 – 11/01	10	0	4	-*
	Total			4340	1708	39%
1983	Cattle	06/06 – 10/15	825	1675	1225	73%
	Sheep	05/17 – 11/15	4925	2665	372	14%
	Horses	-	0	0	0	-
	Total			4340	1597	37%
1984	Cattle	05/04 – 09/30	1123	1675	1575	94%
	Sheep	05/18 – 11/12	4660	2665	459	17%
	Horses	-	0	0	0	-
	Total			4340	2034	47%
1985	Cattle	05/27 – 10/14	1394	3255	1904	58%
	Sheep	05/14 – 07/17	5360	1000	535	54%
	Horses	-	0	0	0	-
	Total			4255	2439	57%
1986	Cattle	05/14 – 09/30	1047	3255	1715	53%
	Sheep	05/07 – 11/18	4900	1000	503	50%
	Horses	-	0	0	0	-
	Total			4255	2218	52%
1987	Cattle	04/30 – 09/21	1659	3255	2068	64%
	Sheep	04/27 – 09/08	5205	1000	737	74%
	Horses	06/03 – 10/31	26	0	48	-*
	Total			4255	2853	67%

Year	Type of Animal	Grazing Use Period	Number of Livestock	Active Preference (AUMs)	AUMs Used	Percent of Active Use
1988	Cattle	05/20 – 09/26	1543	3255	1784	55%
	Sheep	05/10 – 06/15	4100	1000	477	48%
	Horses	04/27 – 09/20	25	0	28	-*
	Total			4255	2289	54%
1989	Cattle	04/24 – 09/10	1163	3255	1450	45%
	Sheep	05/14 – 11/14	4210	1000	589	59%
	Horses	06/21 – 10/10	12	0	14	-*
	Total			4255	2053	48%
1990	Cattle	05/15 – 10/08	1287	3255	1643	50%
	Sheep	05/01 – 11/10	4980	1000	1009	101%
	Horses	07/07 – 11/02	15	0	15	-*
	Total			4255	2667	63%
1991	Cattle	05/01 – 10/04	1723	3255	2108	65%
	Sheep	05/12 – 10/21	4550	1000	399	40%
	Horses	06/15 – 10/04	15	0	27	-*
	Total			4255	2534	60%
1992	Cattle	04/20 – 10/10	1402	3255	1811	56%
	Sheep	04/27 – 10/24	4500	1000	532	53%
	Horses	05/04 – 10/31	16	0	42	-*
	Total			4255	2385	56%
1993	Cattle	05/05 – 11/05	1853	3255	1821	56%
	Sheep	05/18 – 11/10	4105	1000	406	41%
	Horses	08/07 – 11/05	15	0	23	-*
	Total			4255	2250	53%
1994	Cattle	05/13 – 11/11	1478	3255	1891	58%
	Sheep	05/08 – 10/26	3735	1000	437	44%
	Horses	05/01 – 11/31	16	0	32	-*
	Total			4255	2360	55%
1995	Cattle	06/06 – 10/27	1669	3255	1495	46%
	Sheep	05/21 – 11/05	3690	1000	462	46%
	Horses	05/30 – 09/30	10	0	19	-*
	Total			4255	1976	46%
1996	Cattle	06/06 – 09/20	735	3255	851	26%
	Sheep	05/10 – 11/18	4375	1000	575	58%
	Horses	06/29 – 10/18	15	0	28	-*
	Total			4255	1454	34%
1997	Cattle	05/27 – 10/10	2263	3255	1688	52%
	Sheep	05/12 – 10/18	4430	1000	491	49%
	Horses	08/02 – 10/31	25	0	29	-*
	Total			4340	2208	52%
1998	Cattle	05/23 – 09/30	2189	3255	1242	38%
	Sheep	05/16 – 10/17	5765	1000	748	75%
	Horses	-	0	0	0	-
	Total			4255	1990	47%
1999	Cattle	05/08 – 09/17	3317	3255	1819	56%
	Sheep	05/21 – 10/18	3885	1000	229	23%
	Horses	-	0	0	0	-
	Total			4255	2048	48%

Year	Type of Animal	Grazing Use Period	Number of Livestock	Active Preference (AUMs)	AUMs Used	Percent of Active Use
2000	Cattle	06/06 – 11/17	771	3255	847	26%
	Sheep	05/09 – 11/08	3910	1000	335	34%
	Horses	-	0	0	0	-
	Total			4255	1182	28%
2001	Cattle	05/12 – 10/12	719	3255	1053	32%
	Sheep	05/12 – 10/06	4185	1000	318	32%
	Horses	-	0	0	0	-
	Total			4255	1371	32%
2002	Cattle	05/24 – 10/11	798	3255	1137	35%
	Sheep	05/12 – 10/18	3205	1000	245	25%
	Horses	-	0	0	0	-
	Total			4255	1382	32%
2003	Cattle	05/17 – 09/23	968	3255	922	28%
	Sheep	05/18 – 10/15	5180	1000	182	18%
	Horses	09/13 – 10/15	10	0	9	-*
	Total			4255	1113	26%
2004	Cattle	05/22 – 09/28	935	3255	1056	32%
	Sheep	05/05 – 10/17	4270	1000	253	25%
	Horses	-	0	0	0	-
	Total			4255	1309	31%
2005	Cattle	05/28 – 09/09	934	3255	837	26%
	Sheep	05/16 – 10/16	3560	1000	245	25%
	Horses	-	0	0	0	-
	Total			4255	1082	25%
2006	Cattle	05/29 – 09/22	686	3255	944	29%
	Sheep	05/17 – 10/17	3760	1000	205	21%
	Horses	08/12 – 09/01	12	0	3	-*
	Total			4255	1152	27%
2007	Cattle	05/15 – 10/26	808	3255	1009	31%
	Sheep	05/05 – 09/23	5046	1000	575	58%
	Horses	-	0	0	0	-
	Total			4255	1584	37%

* AUMs were converted to cattle or horse use on a Temporary Non-Renewable basis.