

## **SID BUTTE 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). Standards 2 and 3 do not apply to the Sid Butte Allotment.

A separate assessment form is used to evaluate Standard 6 (Exotic Plant Communities, Other Than Seedings), where applicable. In the case of the Sid Butte 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). Standard 7 also does not apply to the Sid Butte Allotment.

The Natural Resource Conservation Service’s 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**

<b>Field Office:</b> Shoshone			<b>Watershed Names/Numbers:</b> Lake Walcott/17040209 Upper Snake-Rock/17040212		
<b>Allotment Name/Number:</b> Sid Butte/80708					
<b>Public Land (Acres)</b>			<b>Streams on Public Land (miles):</b>		
<b>Upland:</b> 43,078	<b>Riparian:</b> 0	<b>Total:</b> 43,078	0 Miles		
<b>Date(s) of Field Assessment:</b> 5/6/2008 – 5/9/2008			<b>Name of Permittee(s):</b> Alicia Dredge Flat Top Grazing Association Denis Kowitz Lava Lake Land and Livestock, LLC Pres Co Livestock Association		
<b>Assessment Participants (Name &amp; Discipline or Interest):</b> Dan Patten, Rangeland Management Specialist Gary Wright, Wildlife Biologist Danelle Nance, Natural Resource Specialist-Botany Milt Ward, Permittee Representative					

**II. ALLOTMENT PROFILE**

What is currently the Sid Butte Allotment was originally a portion of the “Star Lake Unit.” In 1957, the Star Lake Unit was separated into the Milner Unit—the portion south and west of the Milner-Gooding Canal—and the Star Lake Unit—the portion east and north of the Milner-Gooding Canal.

Prior to 1960, livestock use in the Star Lake Unit was primarily by sheep, amounting to 33,606 AUMs and over 30 permittees spread over 157,634 acres. In the 1960s, permits began to change hands, being bought up by a few permittees. Along with those transfers were applications for conversion from sheep use to cattle use. Because of these conversions, the Grazing Advisory Board recommended a reduction in permitted AUMs of 38%, accounting for the differences in available forage for sheep and cattle.

The Star Lake Unit went through several reductions in size throughout its history. In 1970, the Star Lake Unit was divided into Star Lake East (currently the Sid Butte Allotment) and Star Lake West (the current Star Lake Allotment). The Star Lake East portion was approximately 45,000

acres in size. The BLM has also gone through land disposals by Desert Land Entry and other programs further reducing the two allotments by 19,634 acres. In 1992, the Wilson Allotment was absorbed into the Sid Butte Allotment, adding a fifth pasture. The current size of the Sid Butte Allotment is 44,736 BLM acres.

The south end of the Sid Butte Allotment is approximately 7 miles west of Paul, Idaho, and the northwest corner is about 13 miles east of Dietrich (see Map 1 in Appendix 2). The allotment is bordered on the north by farm ground and Highway 26, and is otherwise surrounded by farm ground. It is currently divided into 5 separate pastures, one of which is nearly four miles south of the rest of the allotment. Cattle grazing is permitted from April 1 to December 31 with a total active preference of 2,736 AUMs. Sheep grazing is permitted from April 1 to June 15 with 2,328 active AUMs and from November 1 to December 31 with 1,931 active AUMs.

The soils on public land within this allotment range from blowing sand dunes to clay loams, all with rock outcrops. According to the NRCS ecological site descriptions, the major ecological sites in this allotment include the following:

Loamy 8 – 12” (Basin big sagebrush/bluebunch wheatgrass)

Loamy 8 – 10” (Wyoming big sagebrush/Thurber needlegrass)

Loamy 10 – 12” (Wyoming big sagebrush/bluebunch wheatgrass/Thurber needlegrass)

The Sid Butte Allotment has a long history of wildfires, but the first recorded wildfire within the allotment was in 1962. There have been 71 fires in the allotment over the years, amounting to over 56,000 acres. Map 2 in Appendix 2 shows the areas of the allotment that have been burned at least once, and how many times each area has burned. Table A2-1 in Appendix 2 lists all of the fires that have occurred within the allotment since 1962. Since some of the fires may overlap, the total burned acreage is higher than the total allotment acreage.

Sandberg bluegrass (*Poa secunda*), cheatgrass (*Bromus tectorum*), and crested wheatgrass (*Agropyron cristatum*) are the most dominant species in the allotment. Three-tip sagebrush and Wyoming Big sagebrush are the dominant shrubs in the allotment. Rush skeletonweed (*Chondrilla juncea*) and diffuse knapweed (*Centaurea diffusa*), both noxious weeds, were found in the allotment during the field assessment, but they were not common.

### **III. IDAHO RANGELAND HEALTH STANDARDS ASSESSMENT**

The field assessment consisted of evaluating the ecological sites found in key use 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. 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 transect is located and the number of the transect (e.g. NE1 refers to the Northeast Pasture, transect 1).

**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					NE1,NE2,SE1,SE2,SE3, NW1,NW2,NW3,NW4, SW1,SW2,SW3,W1
2. Water Flow Patterns			NE1	NE2,SW3,W1	SE1,SE2,SE3,NW1,NW2, NW3,NW4,SW1,SW2
3. Pedastals and/or Terracettes (Wind & Water)			NE1,NE2, W1	SE2,NW2, SW1,SW3	SE1,SE3,NW1,NW3, NW4,SW2
4. Bare Ground			NE1,NW4,S W3	NE2,SE3, NW1	SE1,SE2,NW2,NW3, SW1,SW2,W1
5. Gullies					NE1,NE2,SE1,SE2,SE3, NW1,NW2,NW3,NW4, SW1,SW2,SW3,W1
6. Wind-scoured, Blowout, and/or Depositional Areas					NE1,NE2,SE1,SE2,SE3, NW1,NW2,NW3,NW4, SW1,SW2,SW3,W1
8. Soil Surface Resistance to Erosion			NE1,NW1	NE2,SE3,NW2, NW3,NW4, SW3,W1	SE1,SE2,SW1,SW2
9. Soil Surface Loss or Degradation			NE1,W1	NE2,SE3,NW1, NW2,NW3, SW1,SW3	SE1,SE2,NW4,SW2
10. Plant Community Composition & Distribution Relative to Infiltration & Runoff		W1	NE1,NW4, SW3	SE1,SE3,NW2, SW1	NE2,SE2,NW1,NW3, SW2
11. Compaction Layer			W1	NE1,SE1,NW2, NW4,SW3	NE2,SE2,SE3,NW1, NW3,SW1,SW2
17. Reproductive Capability of Perennial Plants			SE1,NW4	SE3	NE1,NE2,SE2,NW1, NW2,NW3,SW1,SW2, SW3,W1
<i>Rangeland Health Attributes</i>	<b>Extreme</b>	<b>Moderate to Extreme</b>	<b>Moderate</b>	<b>Slight to Moderate</b>	<b>None to Slight</b>
<b>Standard 1 (Indicators 1-6, 8-11, &amp; 17)</b>		1 Indicator	17 Indicators	34 Indicators	91 Indicators
<b>Overall Rating for Site</b>			W1	NE1,NW1, NW2,NW4, SW3	NE2,SE1,SE2,SE3,NW3, SW1,SW2
<b>Overall Rating for Allotment</b>				<b>X</b>	

Much of this standard relies on the overall ground cover within the allotment. Field measurements found that vascular plants provided 51% of the cover on average for those sites evaluated in this allotment, litter was 21%, rock was 2%, bare ground was 23%, and biological crust was 3%. The main watershed issue encountered in the allotment was the lack of mid-sized bunchgrasses that would be expected for the ecological sites leading to an alteration the plant community composition and distribution relative to infiltration and runoff. Another prominent

issue was evidence of past soil loss. There was some evidence of water flow patterns and plant pedestaling.

### **Allotment Summary for Standard 1 (Watersheds):**

The overall rating of this allotment for Standard 1 is slight to moderate (refer to Appendix 1-1). Ninety-one indicators (64%) were marked none to slight, thirty-four indicators (24%) were marked slight to moderate, seventeen indicators (13%) were marked moderate and one indicator (<1%) was marked moderate to extreme. These indicators and their ratings suggest that this allotment is physically stable with little active erosion and has most of the proper characteristics to minimize the effects of water runoff and wind erosion.

**B. Standard 2 (Riparian Areas and Wetlands) & Standard 3 (Stream Channel/Floodplain)**  
These Standards do not apply to the Sid Butte Allotment.

### **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 and Standard 5 (Seedings) 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%.

#### **1. Loamy 8 – 12” (Basin big sagebrush/bluebunch wheatgrass)**

The Natural Resources Conservation Service (NRCS) site description for this site states that the visually dominant vegetation should be basin big sagebrush (*Artemisia tridentata tridentata*) and bluebunch wheatgrass (*Pseudoroegneria spicata*). By weight, grasses should be 55-65 percent of the total, forbs 10-15 percent, and shrubs 20-30 percent of annual production.

The dominant potential natural grasses by weight for this site include bluebunch wheatgrass, with lesser amounts of thickspike (*Elymus lanceolatus*) or western (*Pascopyrum smithii*) wheatgrass.

Forbs in the potential natural plant community include arrowleaf balsamroot (*Balsamorhiza sagittata*) and lupine (*Lupinus* spp.). The dominant shrub is basin big sagebrush, with lesser amounts of Wyoming big sagebrush (*Artemisia tridentata wyomingensis*), and rabbitbrush (*Chrysothamnus* spp.).

#### *SE1*

Cover data indicate that Sandberg bluegrass (provides 25% cover), cheatgrass (24%), and thickspike wheatgrass, bluebunch wheatgrass, and dryland sedge (*Carex douglasii*) (1% each) were the dominant grasses on this site. The dominant shrubs were basin big sagebrush (7% cover) and three-tip sagebrush (*Artemisia tripartita*) (2%). Forbs provided 15% cover.

Native perennial grasses contributed 28% cover, annual grasses provided 26% cover, perennial forbs were 3%, and annual forbs were 12%. Shrub cover was 10% and biological crust was found on 1% of the transect.

NW2

Cover data indicate that Sandberg bluegrass (provides 32% cover), cheatgrass (5%), and crested wheatgrass (2%) are the dominant grasses on the site. The shrubs present included three-tip sagebrush (8%), Wyoming big sagebrush (4%), and rabbitbrush (2%). Forbs provided 12% cover and biological crust was found on 10% of the transect.

## **2. Loamy 10 – 12” (Wyoming big sagebrush/bluebunch wheatgrass/Thurber needlegrass)**

The Natural Resources Conservation Service (NRCS) site description for this site states that the visually dominant vegetation should be bluebunch wheatgrass and Wyoming big sagebrush. By weight, grasses should be 45-55 percent of the total, forbs 10-15 percent, and shrubs 25-35 percent.

The dominant potential natural grasses by weight for this site include bluebunch wheatgrass and Thurber needlegrass (*Achnatherum thurberianum*), with lesser amounts of Great Basin wildrye (*Leymus cinereus*), bottlebrush squirreltail (*Elymus elemoides*), Sandberg’s bluegrass, Indian ricegrass (*Achnatherum hymenoides*), and foxtail wheatgrass (*Pseudelymus saxicola*).

Forbs in the potential natural plant community include arrowleaf balsamroot, tapertip hawksbeard (*Crepis acuminata*), lupine, and phlox (*Phlox* spp.). The dominant shrubs are Wyoming big sagebrush, and rabbitbrush.

SW1

Cover data indicate that Sandberg bluegrass (provides 31% cover), cheatgrass (15%), and thickspike wheatgrass (2%) were the dominant grasses on this site. The dominant shrubs encountered on the transect included basin big sagebrush (provides 7% cover), Wyoming big sagebrush (4%), and rabbitbrush (2%). Forbs amounted to about 8% cover.

Native perennial grasses contributed 33% cover, annual grasses provided 16% cover, annual forbs were 6%, perennial forbs were 2%, and shrub cover was 13%. Biological crust was found on 11% of the transect.

## **3. Loamy 8 – 10” (Wyoming big sagebrush/Thurber needlegrass)**

The Natural Resources Conservation Service (NRCS) site description for this site states that the visually dominant vegetation should be stunted Wyoming big sagebrush and Thurber needlegrass. By weight, grasses should comprise 40-50 percent of the production, 5-15 percent forbs and 30-40 percent shrubs.

The dominant potential natural grasses by weight for this site include Thurber needlegrass, bottlebrush squirreltail, and Sandberg bluegrass.

Forbs in the potential natural plant community include arrowleaf balsamroot, tapertip hawksbeard (*Crepis acuminata*), lupine, and phlox, among others, though all listed show only a trace present. The dominant shrubs are Wyoming big sagebrush, and rabbitbrush.

WI

Cover data indicate that Sandberg bluegrass (provides 24% cover), cheatgrass (20%), and thickspike wheatgrass (4%) are the dominant grasses on this site. Wyoming big sagebrush (8%) was the only shrub encountered on the transect. Mustard was the only forb encountered at 6% cover.

Native perennial grasses contributed 28% cover, annual grasses provided 20% cover, and biological crust was found on 8% of the transect.

**Table 3: 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				NW2, W1	SE1, SW1
9. Soil Surface Loss or Degradation			W1	NW2, SW1	SE1
11. Compaction Layer			W1	SE1, NW2	SW1
12. Functional/Structural Groups		W1	SE1, NW2	SW1	
13. Plant Mortality/Decadence			SE1	SW1	NW2, W1
14. Litter Amount					SE1, NW2, SW1, W1
15. Annual Production		W1	SE1	NW2, SW1	
16. Invasive Plants		SE1, W1		SW1	NW2
17. Reproductive Capability of Perennial Plants			SE1		NW2, SW1, W1
<i>Rangeland Health Attributes</i>	<b>Extreme</b>	<b>Moderate to Extreme</b>	<b>Moderate</b>	<b>Slight to Moderate</b>	<b>None to Slight</b>
<b>Standard 4 (Indicators 8, 9, 11-17)</b>		4 Indicators	7 Indicators	11 Indicators	14 Indicators
<b>Overall Rating for Each Site</b>			W1	SE1, NW2, SW1	
<b>Overall Rating for Allotment</b>				<b>X</b>	

**Table 4: Species Observed in Native Sites (not a comprehensive list)**

Shrubs	Forbs	
Basin big sagebrush	Annual agoseris	Lava aster
Green rabbitbrush	Beckwith's violet	Longleaf phlox
Rubber rabbitbrush	Blue eyed Mary	Low larkspur
Threetip sagebrush	Blue penstemon	Lupine
Wyoming big sagebrush	Broom snakeweed	Mountain dandelion
<b>Grasses</b>	Bur buttercup	Nineleaf biscuitroot
Bluebunch wheatgrass	Common dandelion	Prickly pear cactus
Bottlebrush squirreltail	Death camas	Salsify
Cheatgrass	Desert biscuitroot	Shaggy fleabane
Great Basin wildrye	Douglas's dusky maiden	Spring draba
Sandberg bluegrass	False dandelion	Stoneseed
Sixweeks fescue	Freckled milkvetch	Tumble mustard
Thickspike wheatgrass	Globemallow	Wild onion
Thurber's needlegrass	Hawksbeard	Woodland star
Western wheatgrass	Hoary tansyaster	Woolypod milkvetch
	Hood's phlox	

#### **Allotment Summary for Standard 4 (Native Plant Community)**

Four indicators (11%) were marked moderate to extreme for the lack of mid-sized bunchgrasses and forbs, the resultant reduction in site productivity, and the presence of invasive species. Seven indicators (19%) were marked moderate due to the same reasons, plus sagebrush decadence and soil compaction or loss. Eleven indicators (31%) were marked slight to moderate due to the same reasons. Fourteen indicators (39%) were marked none to slight. The overall rating for the assessed indicators for Standard 4 is slight to moderate (refer to Appendix 1-1). This overall ranking is primarily a result of mid-sized bunchgrasses being replaced by invasive species. This has resulted in other problems, such as reduced annual production and soil resistance to erosion.

#### **D. Standard 5 (Seedings)**

This Standard is designed to assess the health of those sites that are dominated by seeded species or were seeded at one time. Nine sites were evaluated in the Sid Butte Allotment for this Standard.

##### *NE1*

This site was located in a 1954 fire rehabilitation seeding called the Sid Butte Reseeding #3. This seeding was a crested wheatgrass seeding. Cover data indicate that Sandberg's bluegrass (13% cover), cheatgrass (12%), and crested wheatgrass (8%) were the dominant grasses on the site. Wyoming big sagebrush has re-established on the site and provided 8% cover. Total grass cover was 34%. Shrub cover amounted to 10%. Forbs provided 4% cover, and biological crust provided 10% cover.

##### *NE2*

This site was located in a 1953 fire rehabilitation seeding called the Sid Butte Reseeding #2. This seeding was also a crested wheatgrass seeding. Cover data indicate that Sandberg's bluegrass (18% cover), crested wheatgrass (13%), and cheatgrass (11%) were the dominant grasses on the site. This site burned in another wildfire in 2003, so the Wyoming big sagebrush that had re-established on the site is no longer present. Total grass cover was 44% and forbs provided 2% cover.

##### *SE2*

This site was located in a fire rehabilitation seeding from 1965, called the Kimama Butte Fire Rehabilitation Seeding. The project involved plowing and seeding after the Kimama Butte Fire. Included in the seeding mixture were crested wheatgrass and cereal rye. Cover data indicate that crested wheatgrass (provides 16% cover), Sandberg bluegrass (12%), and bluebunch wheatgrass (2%) were the dominant grasses on this site. The dominant shrubs encountered on the transect included three-tip sagebrush (8%) and rabbitbrush (7%). Forbs provided 13% cover.

Native perennial grasses contributed 14% cover, annual grasses provided 1% cover, annual forbs were 10%, perennial forbs were 3%, and shrub cover was 18%.

##### *SE3*

This site was located in a fire rehabilitation seeding from 2006, called the Reunion Fire Rehabilitation. The seed mixture included Siberian wheatgrass (*Agropyron fragile*), crested

wheatgrass, tall wheatgrass (*Thinopyrum ponticum*), big bluegrass (*Poa ampla*), and sainfoin (*Onobrychis viciifolia*). Cover data indicate that Sandberg's bluegrass (provides 30% cover), cheatgrass (28%), and western wheatgrass (2%) were the dominant grasses on the site. Forbs provided 8% cover, primarily mustard (*Sisymbrium* spp.) with 1% arrowleaf balsamroot.

#### NW1

This site was located in a fire rehabilitation crested wheatgrass seeding from 1971, called the Sid South Fire Rehabilitation Seeding. This same area burned again in 1979 and in 2002. Cover data indicate that crested wheatgrass was the dominant overall species in the area (34% cover). Other species were noted during the site visit, but none fell on a transect point.

#### NW3

This site was located in a 2001 fire rehabilitation seeding called the Sid Butte Seeding. The transect spans two different fires from 2000 called the Sid Butte Fire and the Hidden Valley Fire. The area also burned in 1966. The seed mixture from the rehabilitation efforts included Siberian wheatgrass, crested wheatgrass, tall wheatgrass, big bluegrass, and sainfoin. Cover data indicate that cheatgrass (provides 28% cover), Sandberg's bluegrass (7%), Siberian wheatgrass (6%), and Snake River wheatgrass (4%) were the dominant grasses on the site. Wyoming big sagebrush (4%) was the only other plant species encountered on the transect. Biological crust also provided 2% cover.

#### NW4

This site was located in a 2006 fire rehabilitation seeding called the 4WD Fire Rehabilitation. The seed mixture included Siberian wheatgrass, crested wheatgrass, tall wheatgrass, big bluegrass, and sainfoin. Cover data indicate that Sandberg's bluegrass (26% cover), cheatgrass (16%), and Siberian wheatgrass (5%) were the dominant grasses on the site. Total seeded grass cover was 8%. Forbs provided 9% cover, primarily by mustard, phlox, and Hooker's balsamroot. Biological crust also provided 1% cover.

#### SW2

Similar to site NW4, this site was located in the 4WD Fire Rehabilitation Seeding, and had the same seed mixture. Cover data indicate that Sandberg's bluegrass (28% cover), cheatgrass (10%), and Siberian wheatgrass (7%) were the dominant grasses on the site. Total seeded grass cover was 10%. Forbs provided 6% cover.

#### SW3

As with site SE2, this site was located in the Kimama Butte Fire Rehabilitation Seeding, and had the same seed mixture. Cover data indicate that Sandberg bluegrass (15%), cheatgrass (9%), and crested wheatgrass (4%) were the dominant grasses on this site. The dominant shrubs encountered on the transect included three-tip sagebrush (13%) and Wyoming big sagebrush (4%). Forbs provided 10% cover.

**Table 5: Seeding Community Indicator Ratings**

Standard 5: Seeding 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			NE1, NW1	NE2, SE3, NW3, NW4, SW3	SE2, SW2
9. Soil Surface Loss or Degradation			NE1	NE2, SE3, NW1, NW3, SW3	SE2, NW4, SW2
11. Compaction Layer				NE1, NW4, SW3	NE2, SE2, SE3, NW1, NW3, SW2
12. Functional/Structural Groups			NE1, SE3, NW4, SW3	SE2, NW3	NE2, NW1, SW2
13. Plant Mortality/Decadence				SW3	NE1, NE2, SE2, SE3, NW1, NW3, NW4, SW2, SW3
14. Litter Amount				NE1, SE3, NW1, NW4	NE2, SE2, NW3, SW2, SW3
15. Annual Production			NW4	NE1, SE3, SW3	NE2, SE2, NW1, NW3, SW2
16. Invasive Plants		SE3	NE2, NW3	NE1, SE2, NW4, SW3	NW1, SW2
17. Reproductive Capability of Perennial Plants			NW4	SE3	NE1, NE2, SE2, NW1, NW3, SW2, SW3
<i>Rangeland Health Attributes</i>	<b>Extreme</b>	<b>Moderate to Extreme</b>	<b>Moderate</b>	<b>Slight to Moderate</b>	<b>None to Slight</b>
<b>Standard 5 (Indicators 8, 9, 11-17)</b>		1 Indicator	11 Indicators	28 Indicators	42 Indicators
<b>Overall Rating for Each Site</b>				NE1, SE3, NW4, SW3	NE2, SE2, NW1, NW3, SW2,
<b>Overall Rating for Allotment</b>				<b>X</b>	

**Table 6: Species Observed in Seeded Sites (not a comprehensive list)**

<b>Shrubs</b>	<b>Forbs</b>	
Basin big sagebrush	Alfalfa	Hood's phlox
Green rabbitbrush	Annual agoseris	Hooker's balsamroot
Rubber rabbitbrush	Beckwith's violet	Lava aster
Threetip sagebrush	Bird's-foot trefoil	Longleaf phlox
Wyoming big sagebrush	Blue eyed Mary	Low larkspur
<b>Grasses</b>	Blue penstemon	Lupine
Bottlebrush squirreltail	Broom snakeweed	Nineleaf biscuitroot
Cheatgrass	Bur buttercup	Prickly pear cactus
Crested wheatgrass	Clasping pepperweed	Rockcress
Great Basin wildrye	Common dandelion	Rosy pussytoes
Sandberg bluegrass	Death camas	Russian thistle
Siberian wheatgrass	Desert biscuitroot	Sainfoin
Sixweeks fescue	Desert combleaf	Salsify
Snake River wheatgrass	Diffuse knapweed	Shaggy fleabane
Tall wheatgrass	Douglas's dusky maiden	Spring draba
Thickspike wheatgrass	Fernleaf biscuitroot	Stoneseed
Thurber's needlegrass	Flatspine stickseed	Tumble mustard
Western wheatgrass	Freckled milkvetch	Western tansymustard
	Globemallow	Wild onion
	Groundsmoke	Woodland star
	Hawksbeard	Woodypod milkvetch
	Hoary tansyaster	

**Allotment Summary for Standard 5 (Seedings)**

One indicator (1%) was marked moderate to extreme for the abundance of invasive species. Eleven indicators (13%) were marked moderate due to the lack of mid-sized bunchgrasses and forbs, the resultant reduction in site productivity, the presence of invasive species, and soil loss. Twenty-eight indicators (34%) were marked slight to moderate due to the same reasons and sagebrush decadence and a compaction layer. Forty-two indicators (52%) were marked none to slight. The overall rating for the assessed indicators for Standard 4 is slight to moderate (refer to Appendix 1-1). This overall ranking is primarily a result of mid-sized bunchgrasses being replaced by invasive species. This has resulted in other problems, such as reduced annual production and soil resistance to erosion.

**E. Standard 6 (Exotic Plant Communities, Other than Seedings)**

This Standard does not apply to the Sid Butte Allotment because it has no plant communities dominated by non-seeded exotic species.

**F. 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 on a regular basis. The Shoshone BLM is currently using the 1998 303(d) list. There are no 303(d) listed streams in the Sid Butte Allotment, therefore this Standard does not apply.

## **G. Standard 8 (Threatened and Endangered Plants and Animals)**

There is no federally listed plant or animal species known or suspected to occur on the allotment. The BLM lists some additional plants and animals as BLM Sensitive Species in Idaho. The BLM Sensitive Species which may occur in the allotment are discussed below. We have also identified the migratory Bird Species of Conservation Concern that may use habitat on the allotment for one or more of their life-cycle needs.

### **1. BLM Sensitive Plants**

#### *Astragalus atratus* var. *inseptus* (mourning milkvetch)

Mourning milkvetch is a small, wiry, perennial milkvetch that occurs on thin, clay or clay-loam soil over basalt that is wet in spring but dries out later in the season. It occurs at approximately 4000 to 6000 ft elevation and blooms in May and June. This taxon is often found in early low (alkali) sagebrush (*Artemisia longiloba*) communities. Associated species include early low (alkali) sagebrush, Wyoming big sagebrush, threetip sagebrush, tapertip onion, lava aster, Sandberg's bluegrass, lesser rushy milkvetch, specklepod milkvetch, woolly-pod milkvetch, Blepharipappus, Beckwith's violet, annual sunflower, Thurber's needlegrass, and bluebunch wheatgrass.

Mourning milkvetch is endemic to the northern edge of the Snake River Plain in Blaine, Camas, Lincoln, and Gooding Counties. Its range includes the Timmerman Hills, Bennett Hills, Black Butte Hills, Sonners Flat, Macon Flat, and south to the area around Kinzie Butte.

Threats include early-season livestock grazing during wet/muddy conditions; soil-disturbing activities including road/trail construction, pipeline construction, mining activity, and high-intensity livestock use (such as around trough sites); and conversion of habitat to weedy species (cheatgrass, medusahead wildrye).

The Sid Butte Allotment is slightly south of the known range for mourning milkvetch. There are no recorded populations in the allotment; however, potential habitat may exist.

#### *Astragalus oniciformis* (Picabo milkvetch)

Picabo milkvetch is a wiry, diffuse, perennial milkvetch that occurs on deep, stable sandy soils overlying basalt, with flat to rolling topography, at approximately 3500 to 5000 ft elevation. This species tends to occur in areas where competing vegetation is sparse. It flowers May to July. Associated species include Wyoming big sagebrush, Basin big sagebrush, threetip sagebrush, thickspike wheatgrass, Indian ricegrass, and needle-and-thread grass.

Picabo milkvetch is endemic to the northern edge of the Snake River Plain, from Gooding east to the eastern boundary of Craters of the Moon National Monument, and the lower foothills of the Pioneer Mountains near Picabo.

Threats include soil-disturbing activities including road/trail construction, pipeline construction, and high-intensity livestock use (such as around trough sites) and competition with weedy species.

The Sid Butte Allotment is slightly south of the known range for Picabo milkvetch. There are no recorded populations in the allotment; however, potential habitat may exist.

## **2. BLM Sensitive Animals**

The BLM Sensitive animals that may occur on the allotment during all or a portion of the year are: bald eagle, prairie falcon, ferruginous hawk, loggerhead shrike, greater sage grouse, Brewer's sparrow, gray wolf, pygmy rabbit, Townsend's big-eared bat and western toad. Expected use of habitat conditions on the allotment by the Sensitive animal species varies from incidental foraging activities to year-long use.

The presence of bald eagle in the allotment area would most likely occur during the winter. Bald eagles may make incidental use within the allotment boundary while wintering on the Little Wood River or Mid-Snake River drainages. The prairie falcon and ferruginous hawk may use the allotment during the spring, summer and early fall while in search of prey. Loggerhead shrike are known to nest and raise young on the allotment. The Brewer's sparrow, sage sparrow and pygmy rabbit are primarily or exclusively associated with big sagebrush. The Brewer's sparrow and sage sparrow would use the sagebrush vegetation community on the allotment for nesting, brood-rearing and foraging habitat. Pygmy rabbit may occur on a year-round basis in areas containing a mature big sagebrush overstory. Sightings of gray wolves north of the allotment during the winter of 2003 increases the likelihood that wolves may occur further south in the Shoshone Field Office area. Wolves may follow migrating big game animals through the allotment during years with especially heavy snowfall but the probability of wolves occurring in the allotment is remote. The Townsend's big-eared bat would use the shrub habitat for foraging activities during the spring, summer and fall. Western toads would be expected to occur where the allotment borders areas under irrigation and on lands adjacent to surface water ponds.

Records at the Shoshone Field Office show there are no greater sage-grouse leks on public land in the Sid Butte Allotment, nor are there any records of historic or active leks occurring within five miles of the allotment. The current Idaho Greater Sage-grouse Habitat Map indicates that the habitat on public land in the allotment is primarily comprised of Sagebrush Limited habitat with small areas identified as Shrub-steppe Area Needing Rehabilitation. Vegetation communities in the Limited sage-grouse habitat classification support a plant understory that is generally acceptable in terms of plant composition and community structure, but sagebrush cover is lacking. This allotment provides a mosaic of habitat conditions ranging from suitable to unsuitable for all three major stages of sage grouse development. Information collected during the survey effort for the allotment indicates that the forbs preferred by sage grouse were common enough to determine that the allotment provides marginal habitat for sage grouse during the nesting and brood-rearing periods (refer to Tables 7, 8, 9, and 10). Sage grouse may use these sites during summer, late brood-rearing, or fall, depending on forb and sagebrush availability. Sage-grouse have been observed utilizing habitat on public land in the general vicinity of the allotment during the late brood-rearing period. The Wilson Pasture is unclassified with respect to sage-grouse habitat.

**Migratory Birds-** The Sid Butte Allotment is likely to provide suitable habitat conditions for four migratory bird species of conservation concern that are not listed as Idaho BLM Sensitive species. The four affected land bird species are the Swainson's hawk, western burrowing owl,

long-billed curlew, and grasshopper sparrow. All four of these bird species prefer herbaceous plant communities with little or no shrub overstory for a number of their life-cycle needs.

**Table 7: Sage Grouse Habitat Assessment Worksheet – Breeding Habitat**

Habitat Indicator	Suitable Habitat	Marginal Habitat	Unsuitable Habitat
Average Big Sagebrush Canopy Cover	SW3	NE1, SE2, NW2, SW1	NE2, SE1, SE3, NW1, NW3, NW4, SW2, W1
Average Big Sagebrush Height	SE1, SE2, NW2, NW3, SW3, W1	NE1, SW1	NE2, SE3, NW1, NW4, SW2
Big sagebrush growth form	NE1, SE1, SE2, NW2, NW3, SW3, W1		NE2, SE3, NW1, NW4, SW1, SW2
Average herbaceous grass and forb height	NW1	SE2, NW3	NE1, NE2, SE1, SE3, NW2, NW4, SW1, SW2, SW3, W1
Average perennial grass canopy cover	NE1, NE2, SE1, SE2, SE3, NW1, NW2, NW3, NW4, SW1, SW2, SW3, W1		
Average forb canopy cover		SE1, SE2, NW2, NW4, SW3	NE1, NE2, SE3, NW1, NW3, SW1, SW2, W1
Forb richness (relative to site potential and site guides)	NE2, SE1, SE2, NW2	SE3, NW3, NW4, SW1, SW2, SW3	NE1, NW1, W1
Overall Site Evaluation	SE2	SE1, NW2, SW1, SW3	NE1, NE2, SE3, NW1, NW3, NW4, SW2, W1
Overall Allotment Evaluation	<b>X</b>		
<p><b>Comments:</b> NE1-Poor preferred forb presence, low herbaceous height partially due to low spring moisture.            NE2-Site burned in 2006. Old Agcr seeding with some native grasses            SE1-Grazed by sheep prior to measurements. Site contains areas with more shrub canopy and herbaceous cover providing some suitable nesting conditions            SE2-Perennial grass height is low due to less than normal spring moisture. Would likely be more suitable under a normal spring moisture regime.            SE3-Area burned in 2006 and seeded. Currently dominated by exotic annual herbaceous species            NW1-Recently burned. Some sagebrush re-establishing            NW2-Sagebrush a combination of Artrw &amp; Artr4. Re-establishing in a past Agcr seeding. Some areas of more dense sagebrush across the site. Sheep have grazed through the transect area, but current use appears to be fairly light.            NW4-Site seeded in fall of 2006. A few sagebrush seedlings sited near transect.            SW2-Burned in summer 2006. Drilled Fall 2006.            SW3-Site a mixture of Artr4 and Artrw. Site appears to be at the low end of marginal.            W1-Lack of adequate mid height grass cover and presence of few preferred forbs coupled with 8% sagebrush cover</p>			

**Table 8: 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			
Riparian and wet meadow stability			
Forb availability in uplands and wetland areas			
Proximity of sagebrush cover			
<b>Overall Riparian/Wet Meadow Site Evaluation</b>			
<i>Upland Sagebrush Communities</i>			
Forb availability	SE1, SE2, SE3, NW2	NE2, NW3, NW4, SW1, SW2, SW3	NE1, NW1, W1
<b>Overall Upland Site Evaluation</b>	SE2	NE2, SE1, SE3, NW2, NW3, SW1, SW2, SW3	NE1, NW1, NW4, W1
<b>Overall Allotment Evaluation</b>		<b>X</b>	
<p><b>Comments:</b> NE2-Burned in 2006. Lack of shrub cover in burn likely limits use by sage-grouse.            SE1-Site downgraded to marginal due to likely reduction of succulent preferred forbs during late brood rearing period            SE3-Poor sage-grouse cover            NW1-Recently burned. Some sagebrush re-establishing            NW2-Preferred forbs are currently readily available but may be less available during late brood rearing. Old seeding that has had sagebrush re-establish. Forb composition is fairly high and diverse.            NW3-Preferred forbs will be less available during late brood rearing. Adjacent farms may have some preferred forbs.            NW4-Large expanse of herbaceous vegetation with no mature shrubs            SW1-Site is on the lower end of marginal due to spotty distribution and less than desired occurrence or the preferred forbs.            SW2-Site burned summer 2006. Drill seeded Fall 2006. Patches of Artrw provide cover value for sage grouse if foraging on the site</p>			

**Table 9: Sage Grouse Habitat Assessment Worksheet – Winter Habitat**

Habitat Indicator	Suitable Habitat	Marginal Habitat	Unsuitable Habitat
Sagebrush canopy cover	NE1, SE2, NW2, SW1	SE1, W1	NE2, SE3, NW1, NW3, NW4, SW2, SW3
Sagebrush height (availability during the winter)	NE1, SE1, SE2, NW2, NW3, SW1, W1	SW3	NE2, SE3, NW1, NW4, SW2
<b>Overall Site Evaluation</b>	NE1, SE1, SW1	SE2, NW2, SW3, W1	NE2, SE3, NW1, NW3, NW4, SW2,
<b>Overall Allotment Evaluation</b>		<b>X</b>	
<p><b>Comments:</b> NE2-Burned in 2006            SE2-Site is a mixture of big and three-tip sagebrush. Caused lowering value to marginal            SE3-Site burned in 2006. Currently primary cover is brte and sial.            NW1-Recently burned. Some sagebrush re-establishing            NW2-Sagebrush is a combination of preferred &amp; non-preferred species. Was downgraded to marginal because Artrw is smaller percentage of sagebrush cover.            NW4-burned by wildfire in summer 2006, seeded fall 2006.            SW3-Site a mixture of Artr4 and Artrw</p>			

**Table 10: Forb Abundance Form for Sage Grouse Evaluations**

Species	Rare	Sparse	Common
<b>Sage Grouse Preferred Forbs:</b>			
Broomrape ( <i>Orobancha</i> spp.)			
Composites:			
Daisies ( <i>Erigeron</i> and <i>Aster</i> spp.)	SW1	NE1	NE2, NW2
Dandelion, C. ( <i>Taraxacum officinale</i> )	NW2	W1	
Dandelion, Mt. ( <i>Agoseris</i> spp.)		NW3	SE1
Hawksbeard ( <i>Crepis</i> spp.)	SW3	NE2, SE1, SE2, SE3, SW1	
Microsteris ( <i>Microseris</i> spp.)			
Prickly lettuce ( <i>Lactuca scariola</i> )		SW2	
Salsify ( <i>Tragopogon dubius</i> )		SE1, SE3, NW3, W1	
Desert-parsley ( <i>Lomatium</i> and <i>Cymopterus</i> spp.)		NE1, NW3, SW3, W1	NE2, SE1, SE2, SE3, NW2, NW4, SW1, SW2
Everlasting ( <i>Antennaria</i> spp.)		NE1	
Groundsmoke ( <i>Gayophytum</i> spp.)			
Knotweed ( <i>Polygonum</i> spp.)		NW4	
Legumes (other than <i>Lupinus</i> spp.)	NW2		
Alfalfa ( <i>Medicago</i> spp.)		SW2	
Bird's foot tre-foil ( <i>Lotus</i> spp.)			
Clover ( <i>Trifolium</i> spp.)			
Sweet clover ( <i>Melilotus</i> spp.)			
Sweetvetch ( <i>Hedysarum</i> spp.)			
Vetch ( <i>Vicia</i> spp.)			
Milkvetch ( <i>Astragalus</i> spp.)		NE1, NE2, SE1, SE2, SE3, NW2, NW3, NW4, SW1, SW3	
Peppergrass ( <i>Lepidium</i> spp.)		SW2	SE3
Phlox ( <i>Phlox</i> spp.)		SE3, NW3, SW1, SW2, W1	NE1, NE2, SE1, SE2, NW2, NW4, SW3
Prairie star flower ( <i>Lithophragura</i> spp.)	SW1	SW3, W1	SE1, SE2, SE3, NW2, NW3
Yarrow ( <i>Achillea millifolium</i> )			
Site Summary	<b>Suitable</b> (Forbs are common with at least a few preferred species present)	<b>Marginal</b> (Forbs are common but only 1 or 2 preferred species present)	<b>Unsuitable</b> (Forbs are rare to sparsely present)
	NE1, SE1, SE2, SE3, NW2	NW3, NW4, SW1, SW2, SW3	NE2, NW1

#### **IV. SUMMARY OF ALLOTMENT STUDIES:**

Tables associated with the allotment studies are in Appendix 3.

##### **A. *Actual Use***

Grazing use in the Sid Butte Allotment is managed under the Monument Resource Area Management Framework Plan (MFP) and the Sid Butte Allotment Management Plan of 1999. A summary of actual use in the allotment for 1974 - 2008 is in Appendix 3, Table A3-1.

##### **B. *Trend Studies***

Trend studies conducted in the Sid Butte Allotment include four 3x3 foot range trend plots, along with four sets of four nested frequency transects. 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 the transects. The species listed in the following tables are the most dominant.

Trend Plot 1 is located in the Northeast Pasture in the area of the Kimama Butte Fire Rehab Seeding. The trend plot was established the year of the Kimama Butte Fire, and data was collected in the trend plot in 1973, 1974, 1980, 1986, 1990, 2001, and 2007 and are summarized in table A3-2. Data was collected for the nested frequency transects in 1986, 1990, 2001, and 2007 and are summarized in Table A3-3. After the initial establishment of a bitterbrush plant, the plot was dominated by that plant until it died 17 years later. After that, crested wheatgrass and Sandberg's bluegrass were released from this competition and are now dominant. This tends to be the natural course of succession, so the trend at this site appears to be static from the photo plot. The nested frequency study shows an increase in annual forbs and decrease of perennial forbs, along with an offsetting increase in sagebrush, confirming the static trend shown in the photo plot.

Trend Plot 2 is located in the Northwest Pasture in the area of the Kimama North Fire Rehabilitation area. This particular area was seeded with bitterbrush after the fire. Data was collected in the trend plot in 1973, 1974, 1983, 1987, 1991, 2001, and 2007 and are summarized in table A3-4. Data were collected for the nested frequency transects in 1983, 1987, 1991, 2001, and 2007 and are summarized in Table A3-5. The sparseness of plants in the photo point makes determining trend difficult. However, the current trend at this site appears to be downward, due to the disappearance of some of the mid-sized bunchgrasses in the nested frequency transects.

Trend Plot 3 is located in the Southeast Pasture in the area of the Kimama Butte Fire Rehab Seeding. The trend plot was established the year of the Kimama Butte Fire, and data was collected in the trend plot in 1973, 1974, 1980, 1986, 1990, 2001, and 2007 and are summarized in table A3-6. Data was collected for the nested frequency transects in 1984, 1988, 2001, and 2007 and are summarized in Table A3-7. The trend at this site appears to be downward. Crested wheatgrass has declined since 1981, with no desirable plant taking its place. The nested frequency transects do show an increase in Wyoming big sagebrush cover to coincide with that decline, but the photo plot does not.

Trend Plot 4 is located in the Southwest Pasture in the area of the Kimama Butte Fire Rehab Seeding and the area of the 4WD Fire, but was read before the seeding efforts. The trend plot

was established the year of the Kimama Butte Fire, and data was collected in the trend plot in 1974, 1978, 1982, 1986, 1989, 2001, and 2007 and are summarized in table A3-8. Data was collected for the nested frequency transects in 1986, 1989, 1995, and 2007 and are summarized in Table A3-9. The trend at this site cannot be determined, due to the 2007 4WD fire. Prior to the 4WD Fire, the trend appeared to be static to slightly upwards. Crested wheatgrass was declining, but the major species increasing to replace the crested wheatgrass was Wyoming big sagebrush.

### **C. Utilization Studies**

Utilization mapping has been conducted in the Sid Butte Allotment periodically, since 1978. These maps show typical use patterns with heavy use areas concentrated around water sources and seedings. The utilization patterns have changed somewhat due to development of a well and pipeline system for watering livestock. Some of the downward trends that have been observed began with the development of this system, and the establishment of the watering sites all within ½ mile of the trend sites.

## **V. LITERATURE CITED:**

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