

Rangeland Health Assessment

South Camas Allotment (01043)

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General Allotment Information

The South Camas Allotment (01043) is located on the east site of Bennett Mountain Road near Bennett Mountain summit, approximately 18 miles north of Glens Ferry, Idaho (Map 1). Land ownership is comprised of approximately 962 acres of public BLM-administered, 548 acres of public US Forest Service-administered lands, 39 acres of State, and 236 acres of private land, totaling 1,785 acres. These figures represent the most current and accurate estimates of allotment acreages, based on existing fence lines.

The allotment area is located within the Snake River Plain B-11, US Department of Agriculture Major Land Resource Area (USDA, 2006). Common soil types consist of Elkcreek-Demast complex, Gaib-Bittercreek-Simonton association, Simonton-Bauscher loam, and Broad Canyon-Grousecreek associaton. The Loamy 12-16” ecological site accounts for approximately 90% of the area and is associated with all of the soil types except the Broad Canyon-Grousecreek association [ecological sites are named by their general soil type and precipitation (inches); actual precipitation at nearby Anderson Dam and Glens Ferry varied (Figure 1)]. The dominant plant community for this ecological site is comprised of mountain big sagebrush with Idaho fescue and bluebunch wheatgrass.

The BLM fire database indicated that no wildfires have occurred on public lands in this allotment since 1957.

Livestock Grazing Management

The South Camas Allotment was created through an agreement initiated in the mid to late 1980s. The permitted use period is July 1 through August 15, annually, with a total permitted livestock use of 76 Animal Unit Months (AUMs; Table 1).

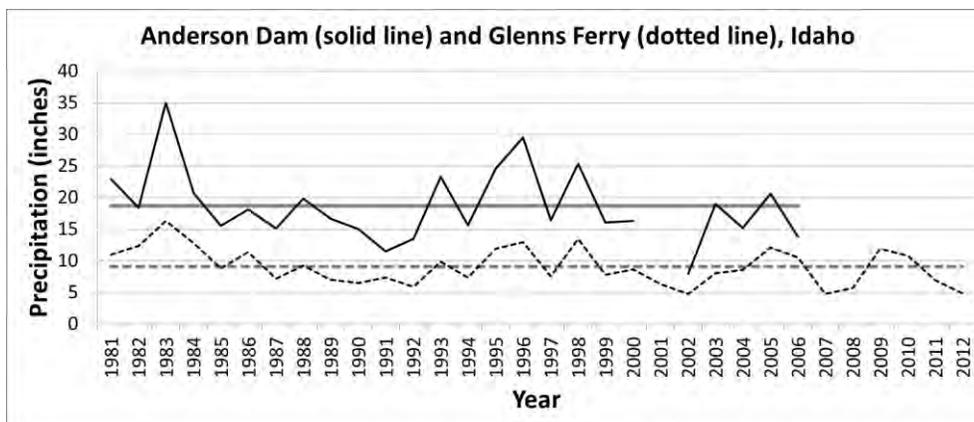


Figure 1. Annual and mean precipitation at Anderson Dam and Glens Ferry, Idaho (Source: National Climate Data Center).

Table 1. Authorized use summary, South Camas Allotment, Elmore County, Idaho.

Authorization Number	Livestock		Season of Use		% Public Land	Authorized AUMs		
	Kind	Number	Begin	End		Active	Suspended	Permitted
1101784	Cattle	50	07/01	08/15	100	76	0	75

Based on actual use reports submitted by the authorized livestock operator or annual authorizations, annual use ranged from 30 to 83 animal unit months (AUMs) between 1997 and 2013 (Table 2). The current grazing permit allows livestock numbers to vary annually, provided the authorized period of use and AUMs are not exceeded. Information in the file does not explain why actual use AUMs were reported to exceed permitted AUMs in 1999.

Table 2. Actual use between 1997 and 2013, South Camas Allotment, Elmore County, Idaho.

Grazing Year	Use Period		AUMs
	On Date	Off Date	
1997	07/01	08/15	68
1998	07/01	08/15	76
1999	07/01	08/15	83
2000	06/30	08/15	77
2001	07/01	08/15	76
2002	07/01	08/15	58
2003	07/01	08/15	76
2004	07/01	08/15	76
2005	07/01	08/15	76
2006	07/01	08/15	76
2007	07/02	08/15	44
2008	07/01	08/31	51
2009	07/11	08/15	30
2010	07/25	08/15	22
2011	07/01	08/15	76
2012	07/12	08/15	58
2013	07/01	08/15	Non-Use

Idaho Standards for Rangeland Health

In 2004, the BLM conducted four field assessments in the South Camas Allotment (see Map for locations) using *Interagency Technical Reference 1734-6, Interpreting Indicators of Rangeland Health ver. 3*. The Elmore County Soil Survey (USDA-SCS, 1991) was used to identify ecological site descriptions, based on mapped soils and landforms, which were verified with field visits. Natural resources within this allotment were assessed according to the Idaho Standards for Rangeland Health, as adopted by Idaho BLM in 1997.

Rangeland health field assessments used a variety of indicators to help determine rangeland health. However, no single indicator provided sufficient information to determine rangeland health and only those indicators appropriate to a particular site were used. Therefore, not all indicators were given equal weight from in different locations. For example, indicators #1-Rills and #6-Wind-scoured Blowouts/Deposition would not occur on a site with flat terrain and a gravelly soil surface. These indicators would be rated “none to slight” by default; but, would not be given the same weight as more applicable indicators for that site, e.g. #4-Bare Ground and #10-Plant Community Composition Relative to Infiltration and Runoff, when determining overall attribute ratings for the site. In rangeland health field assessments, “none to slight” and “slight to moderate” categories reflected the normal range of variability expected for the ecological site. However, “moderate”, “moderate to extreme”, and “extreme” categories reflected a significant departure from expected conditions for the ecological site.

Standard 1: Watershed

Rangeland Health Field Assessments, indicating the state of the rangeland in 2004, and long-term monitoring of the plant community and other watershed health indicators from 1989 to 2011 were used to assess the state and trend of watershed conditions (Map 1). These data sets indicated that the watershed was relatively well protected from degradation, though moderate trampling and pedestalling occurred.

Rangeland Health Field Assessment

Twelve of the 17 rangeland health indicators (1-11 and 14) relate to soil stability and hydrologic function (Table 3). The number in the range of departure columns represents the number of assessments with the indicator rating in that category. For example, the indicator for the ability of the soil surface to resist erosion (#8) rated in the “slight to moderate” range of departure from expected conditions for the ecological site at two sites, etc.

Of the 48 indicator units relating to watershed health in this allotment, three were rated in the “moderate” range of departure from expected conditions for the ecological site (Table 3, Appendix 1). These three indicator units occurred at one assessment location (B-204A), in the north central portion of the allotment (Map 1). Field notes from this location describe sparse herbaceous vegetation in the shrub interspaces. At the other three assessment locations, all 12 indicators relating to soil stability and hydrologic function were rated within the normal range of variability for the ecological site.

Table 3. Watershed indicators of rangeland health, South Camas Allotment, Elmore County, Idaho.

Indicators of Soil Site Stability and Hydrologic Functioning	Range of Departure				
	Extreme	Moderate to Extreme	Moderate	Slight to Moderate	None to Slight
1-Rills					4
2-Water Flow Patterns				4	
3-Pedestals/Terracettes				1	3
4-Bare Ground			1	2	1
5-Gullies					4
6-Wind Scoured blowouts/depositions					4
7-Litter Movement				2	2
8-Soil Surface Resistance to Erosion			1	2	1
9-Soil Surface Loss or Degradation			1	1	2
10-Plant Community Composition and Distribution Relative to Infiltration and Runoff				4	
11-Compaction Layer					4
14-Litter Amount				2	2
Total Indicator Units = 48 (12 indicators x 4 locations)	0	0	3	18	27

Long-term vegetation monitoring

Basal cover of persistent vegetation (stems of perennial grasses, perennial forbs, shrubs, and trees) and bare ground were quantified in three locations (02S09E25A, 02S09E25B, and 02S09E24; Map 1) in 1989 and 2011 using the point cover method. In all three locations the area occupied by stems increased (Figure 2), but bare ground between these stems also increased (Figure 3). The result of greater basal area cover would be increased infiltration and decreased runoff. In contrast, the result of greater bare ground would be decreased infiltration and increased runoff. Individual species trends were also important in considering watershed protection and they demonstrated good protection from excessive runoff. At these elevations, it would be expected that the canopy would be dense and the understory lightly populated by a diverse array of perennial grasses, as is the case here (see Standard 4: Native Plant Communities).

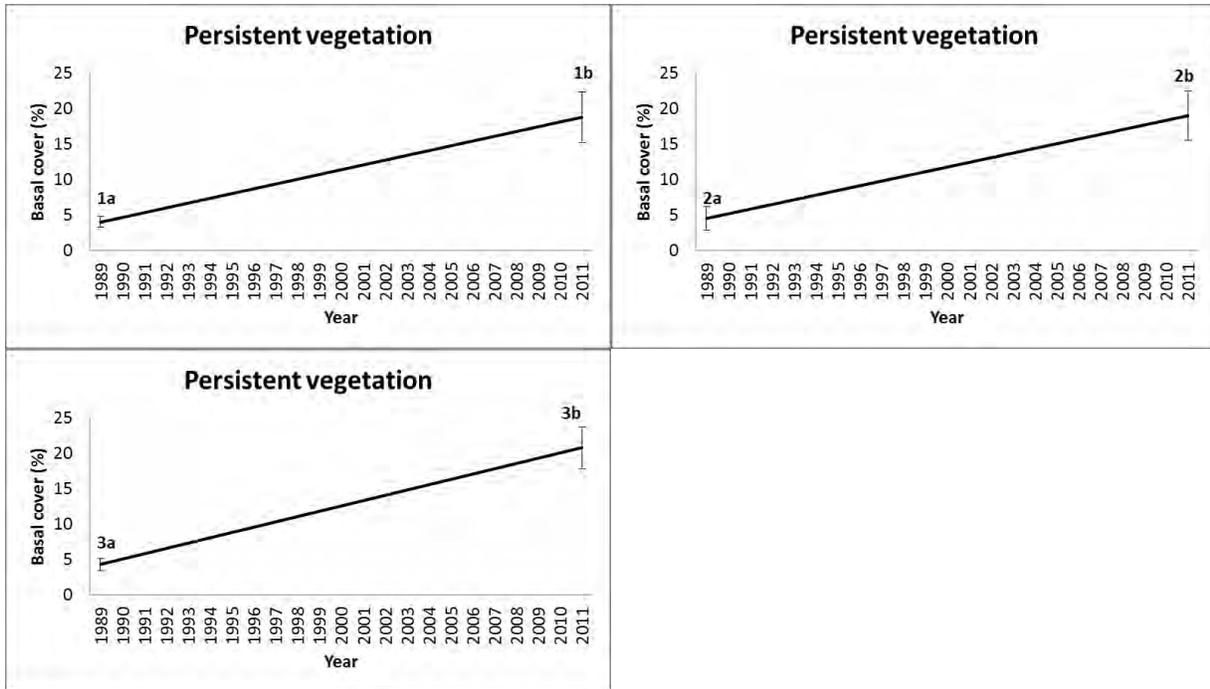


Figure 2. Basal cover of persistent vegetation in the South Camus Allotment, Elmore County, Idaho, in 02S09E25A (1), 02S09E25B (2), and 02S09E24 (3). Different letters above error bars indicate significant differences ($P < 0.1$).

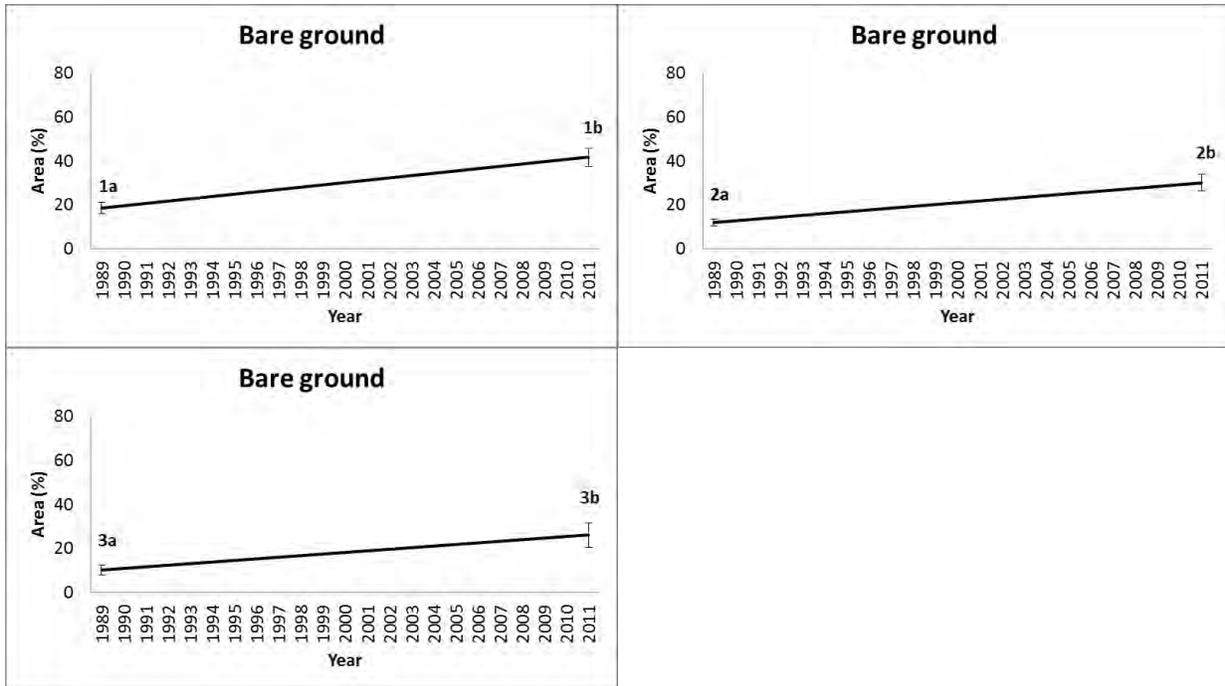


Figure 3. Bare ground in the South Camus Allotment, Elmore County, Idaho, in 02S09E25A (1), 02S09E25B (2), and 02S09E24 (3). Different letters above error bars indicate significant differences ($P < 0.1$).

Standard 2: Riparian Areas and Wetlands/Standard 3: Stream Channel and Floodplains

Perennial stream segments were examined and rated for functioning condition. Ephemeral (flowing naturally only in direct response to precipitation) and intermittent (naturally has a period of zero flow for at least one week during most years) streams are examined to determine if flow regimes validate delineations on National Wetlands Inventory maps (1996). Such streams are rated for functioning condition if obligate hydric vegetation is present. Obligate hydric vegetation are plant species that are dependent on available water, either as standing surface water or saturated soil, and do not persist in environments where substrates become seasonally dry.

Evaluations of Standards 2 and 3 are based on field inventories and examinations of streams and springs from 2009 (Map 1). To assess stream and spring health, interagency technical references (TR-1737-15, 1998 and TR-1737-16, 1999) were applied which uses five general categories to rate the biological (plant life) and hydrological (physical) functioning condition of streams (lotic) or wetlands (lentic). Categories include: proper functioning condition (PFC); functioning-at-risk (FAR) with an upward trend; FAR with static trend; FAR with downward trend; and non-functioning (NF). Streams are reported by stream segment identification number, and springs are reported by name.

Elements of Standards 2 (e.g., vegetation that provides stream shading) and 3 (e.g., streambank stability and channel form) directly affect water quality (e.g., water temperature, sedimentation); therefore, Standards 2, 3, and 7 (Water Quality) and presence of redband trout were summarized in one table. Functioning condition ratings of stratified stream segments are discussed in this section. Water quality assessments for each stream are discussed in Standard 7: Water Quality. Fish are discussed in Standard 8: Threatened and Endangered Species.

Stream Conditions

Approximately 0.3 miles of stream were in PFC (Table 4, Map 1). There was no variance in stream functioning condition ratings between Standards 2 and 3 on either segment.

Table 4: Stream name, segment ID, segment length, and functioning condition ratings summaries for streams, South Camas Allotment, Elmore County, Idaho.

Stream Segment	Segment I.D.	Flow Regime ¹	PFC ²	FAR ²	Total Stream Miles	H2O quality met?	Redband Trout Present? ³
Little Canyon Creek	LCANYO-024.6	P	0.2		0.2	Y	Y
Sheep Creek tributary	SHEEPTR001.0	P	0.1		0.1	Y	N
Total			0.3	0	0.3		
Percent of Total			100%	0%	100%		

¹ P = perennial flow regime I = intermittent flow regime

² PFC (PFC), FAR (functional-at-risk), NF- non-functioning

³ Y = yes, N = no, S = seasonal occupation only

Little Canyon Creek

The 0.2 mile segment of Little Canyon Creek was rated in PFC. This segment had a dense and diverse assemblage of woody plant species representing the mountain alder/quaking aspen/redosier dogwood plant community type(s). Adequate root mass was present to stabilize

stream banks in the decomposed granite soil. Deep-rooted rushes and sedges, including small fruit bullrush and beaked sedge, were present and occupy most suitable sites along this stream segment. Width-depth ratios, pool frequency, and sinuosity were within normal ranges, and active bank erosion was within the natural range ($\leq 15\%$ active erosion) for the substrate and stream type.

Sheep Creek Tributary

A <0.1 mile perennial segment of a Sheep Creek tributary occurs in the allotment’s eastern portion on public land was rated in PFC (Map 1). This reach is mostly lentic as the water is impounded behind a series of four active and stable beaver dams. Dense sedges and rushes occupy the stream banks, and healthy Geyer’s and coyote willows are present. The section is a designated water gap, and the allotment boundary fence specifically encompasses this segment to provide a water source for livestock.

Standard 4: Native Plant Communities

Rangeland Health Field Assessments, indicating the state of the rangeland in 2004, and long-term monitoring of the plant community and other watershed health indicators from 1989 to 2011 were used to assess the state and trend of watershed conditions (Map 1). These data sets indicated that the native plant community is healthy in this allotment even though moderate trampling has occurred. As expected in a diverse high foothills shrub community, shrub and native ruderal grass frequencies are decreasing or static, as individual shrubs take up more space and the canopy closes.

Rangeland Health Assessment

All four rangeland health field assessments were conducted in native plant communities (Map 1). Nine of the 17 rangeland health indicators (8, 9 and 11-17) relate to biotic integrity (Table 5). The number in the range of departure columns represents the number of assessments with the indicator rating in that category (see Standard 1 for explanation).

Table 5. Native plant community rangeland health indicators, South Camas Allotment, Elmore County, Idaho.

Indicators of Biotic Integrity	Range of Departure				
	Extreme	Moderate to Extreme	Moderate	Slight to Moderate	None to Slight
8-Soil Surface Resistance to Erosion			1	2	1
9-Soil Surface Loss or Degradation			1	1	2
11-Compaction Layer					4
12-Functional/Structural Groups				2	2
13-Plant Mortality/Decadence				2	2
14-Litter Amount				2	2
15-Annual Production				1	3
16-Invasive Plants				1	3
17-Reproductive Capability of Perennial Plants				2	2
Total Indicator Units = 36 (9 indicators x 4 locations)	0	0	2	13	21

Of the 36 indicator units for biotic integrity in native plant communities in this allotment, two were rated in the “moderate” range of departure from expected conditions for the ecological site

(Table 5, Appendix 1). These two indicator units occurred at one assessment location (B-204A), which is in the allotment's north central portion. Field comments for this location describe sparse vegetation in the shrub interspaces. At the other three locations, all biotic integrity indicators were rated within the normal range of variability.

Long-term vegetation monitoring

Three nested plot frequency transects were surveyed in 1989 and 2011. They were located at 6,300-6,500 feet elevation in the Loamy 8-12" mountain big sagebrush Idaho fescue-bluebunch wheatgrass ecological site (Map 1). Repeat photographs were taken in 1989 and 2011 at 02S09E25A and 02S09E25B, and in 1989, 2004 and 2011 at 02S09E24.

Mountain big sagebrush, yellow rabbitbrush, and rubber rabbitbrush were the key shrub species. Mountain big sagebrush frequency decreased in 02S09E25A and was static in 02S09E25B and 02S09E24 (Figure 4). Yellow rabbitbrush frequency was static in all three locations, and rubber rabbitbrush was only found in 02S09E25B, where its frequency decreased (Figure 5).

Two large bunchgrasses species occurred; basin wildrye was in all three trend locations and bluebunch wheatgrass was in 02S09E25B. The frequencies for these species were static, where basin wildrye had frequencies <10% (Figure 6) and bluebunch wheatgrass frequency was ~60% (Figure 7).

Several medium grasses and grass-like species occurred including mountain brome, needlegrasses, oniongrass, sedges, Idaho fescue, squirreltail, and Junegrass. Mountain brome was present in all three locations. Its frequency decreased in 02S09E25A (from 25% to 7%) and 02S09E24 (from 83% to 55%), and was static in 02S09E25B (at ~40%) (Figure 8). Western needlegrass and needle-and-thread frequencies were analyzed together in 02S09E25A, because it was likely that one was mistaken for the other in one of the years. Its frequency increased from 57% to 78%; whereas, western needlegrass had static and lower frequencies in the other two locations (Figure 9). Oniongrass was found in all three locations, but it had a very low frequency in 02S09E25B. Its frequency decreased in 02S09E25A from 83% to 44% and was statistically static at 39-67% in 02S09E24 (Figure 10). Sedge was in all three locations. It was present at static trace frequency in 02S09E25B, while it declined in the other two locations [from 45% to 15% in 02S09E25A, and from 20% to 9% in 02S09E24 (Figure 11)]. Idaho fescue had static frequencies of 40% in 02S09E25B, and <20% in 02S09E25A and 02S09E24 (Figure 12). Squirreltail frequency declined from 24% to 14% in 02S09E25A and had a static 4% frequency in 02S09E24 (Figure 13). Squirreltail was not detected in 02S09E25B. Junegrass frequency increased in 02S09E25A, from 7% to 10%, and was static in 02S09E24 at 12-17% (Figure 14). It was not detected in 02S09E25B.

The small native bunchgrass, Sandberg bluegrass, had static low frequencies in 02S09E25B (~5%) and 02S09E24 (its mean frequency dropped from 25% to 4%, but this was not a statistically significant difference). It was extirpated from 02S09E25A after only one occurrence was detected in 1989 (Figure 15).

Cheatgrass was the only exotic annual grass species detected. Its frequency was 6-7% in 02S09E25B (Figure 16).

Repeat photographs showed shrub growth, a breakdown of woody biomass and various amounts of trampled vegetation between shrubs. 02S09E24 had extensive trampling between shrubs in August 1989 and September 2004, and less trampling in July 2011. 02S09E25A also had heavily trampled vegetation between shrubs in August 1989 and July 2011. 02S09E25B had a moderate amount trampling between shrubs in both August 1989 and July 2011.

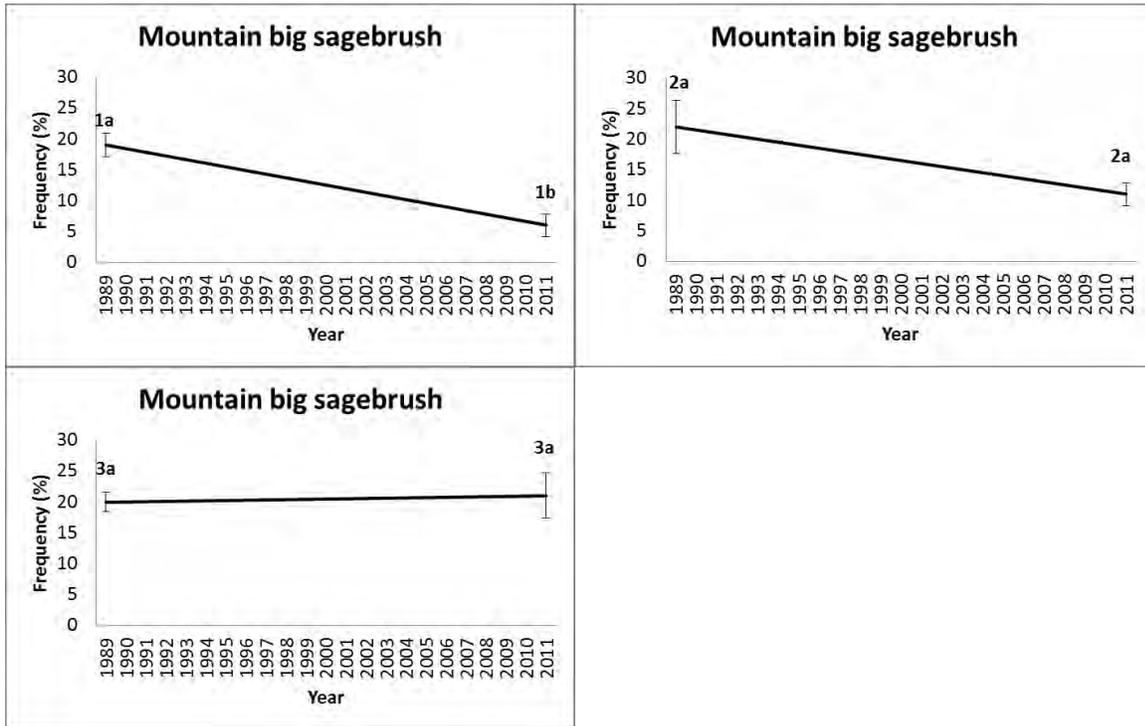


Figure 4. Mountain big sagebrush frequency in the South Camas Allotment, Elmore County, Idaho, in 02S09E25A (1), 02S09E25B (2), and 02S09E24 (3). Different letters above error bars indicate significant differences ($P < 0.1$).

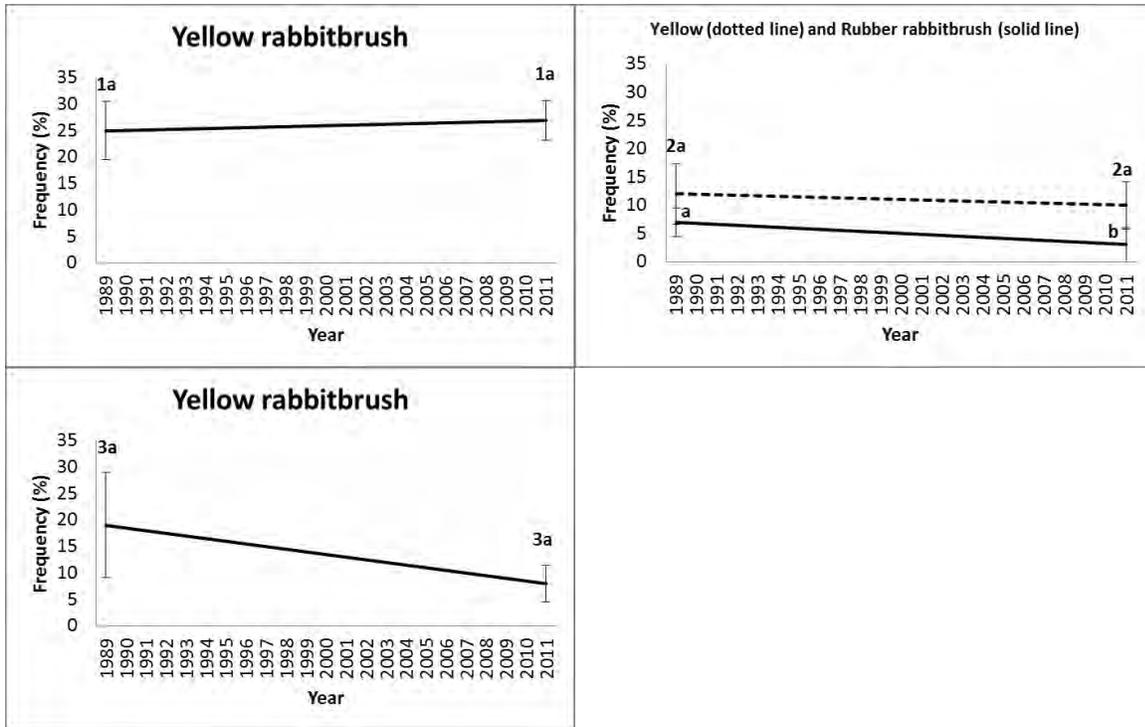


Figure 5. Rabbitbrush frequency in the South Camus Allotment, Elmore County, Idaho, in 02S09E25A (1), 02S09E25B (2), and 02S09E24 (3). Different letters by error bars indicate significant differences ($P < 0.1$).

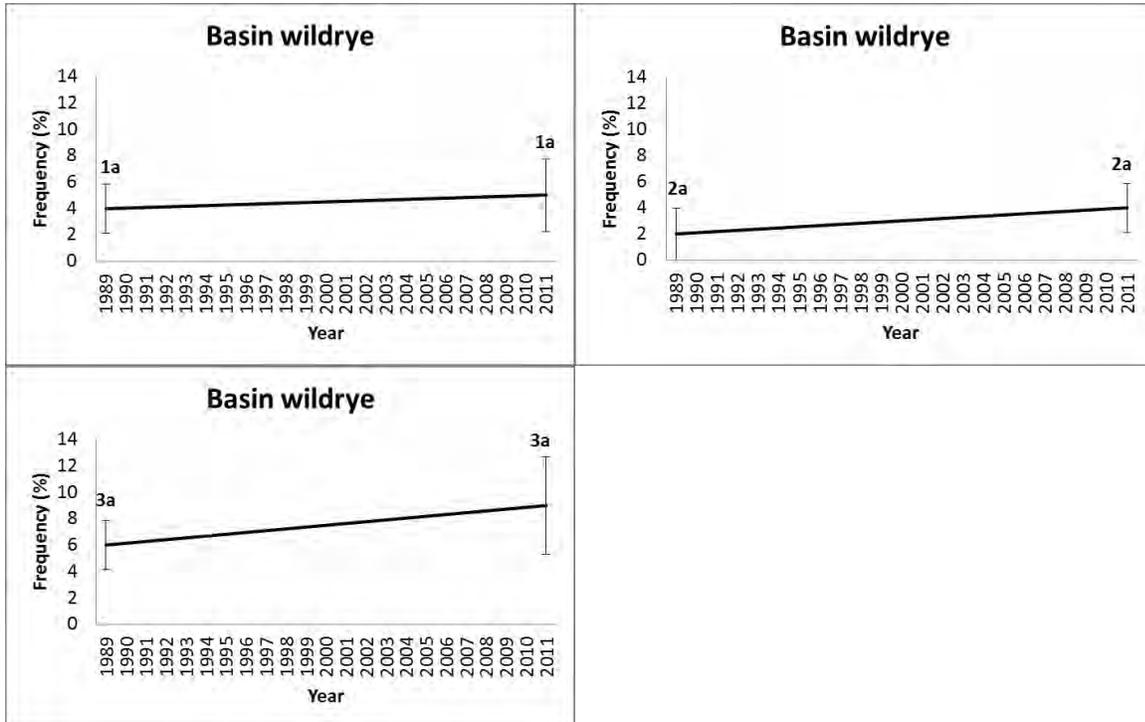


Figure 6. Basin wildrye frequency in the South Camus Allotment, Elmore County, Idaho, in 02S09E25A (1), 02S09E25B (2), and 02S09E24 (3). Different letters above error bars would indicate significant differences ($P < 0.1$).

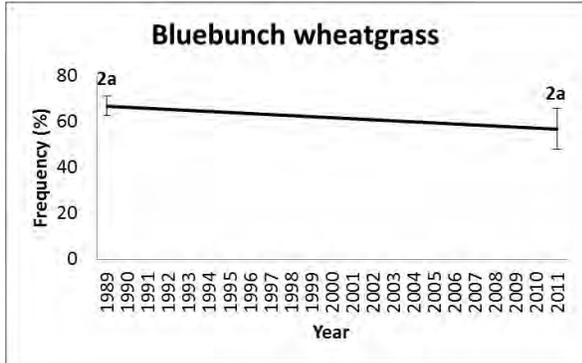


Figure 7. Bluebunch wheatgrass frequency in the South Camus Allotment, Elmore County, Idaho, in 02S09E25B (2). Bluebunch wheatgrass was not detected in 02S09E25A or 02S09E24. Different letters above error bars would indicate significant differences ($P < 0.1$).

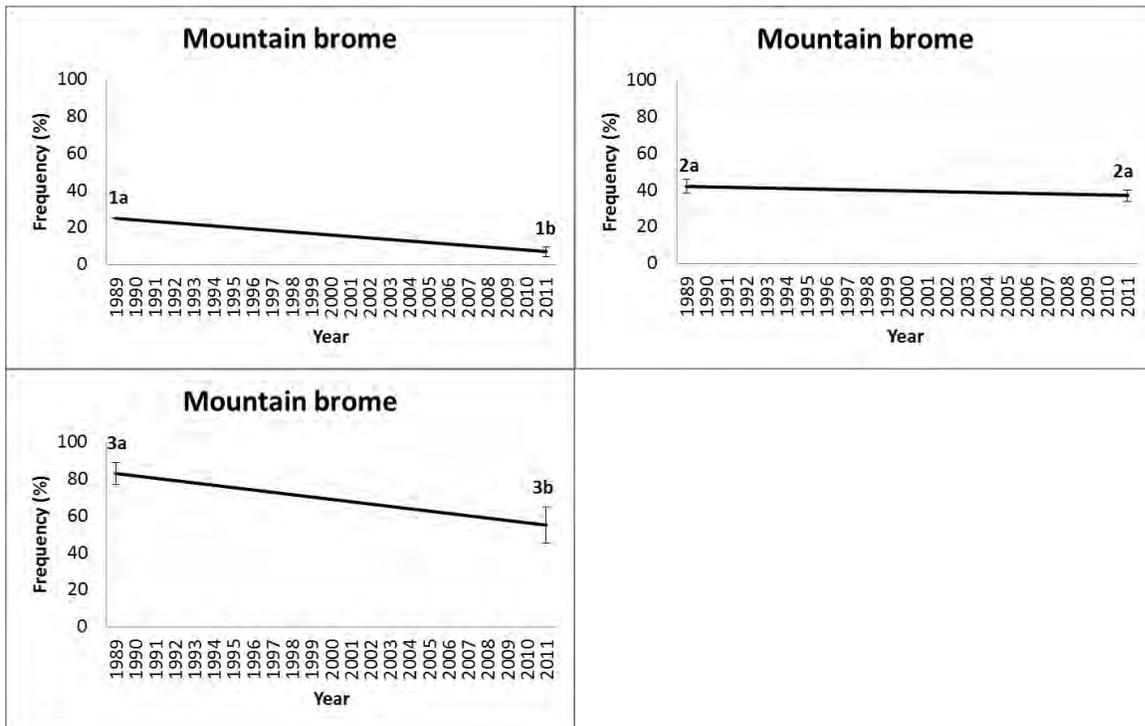


Figure 8. Mountain brome frequency in the South Camus Allotment, Elmore County, Idaho, in 02S09E25A (1), 02S09E25B (2), and 02S09E24 (3). Different letters above error bars indicate significant differences ($P < 0.1$).

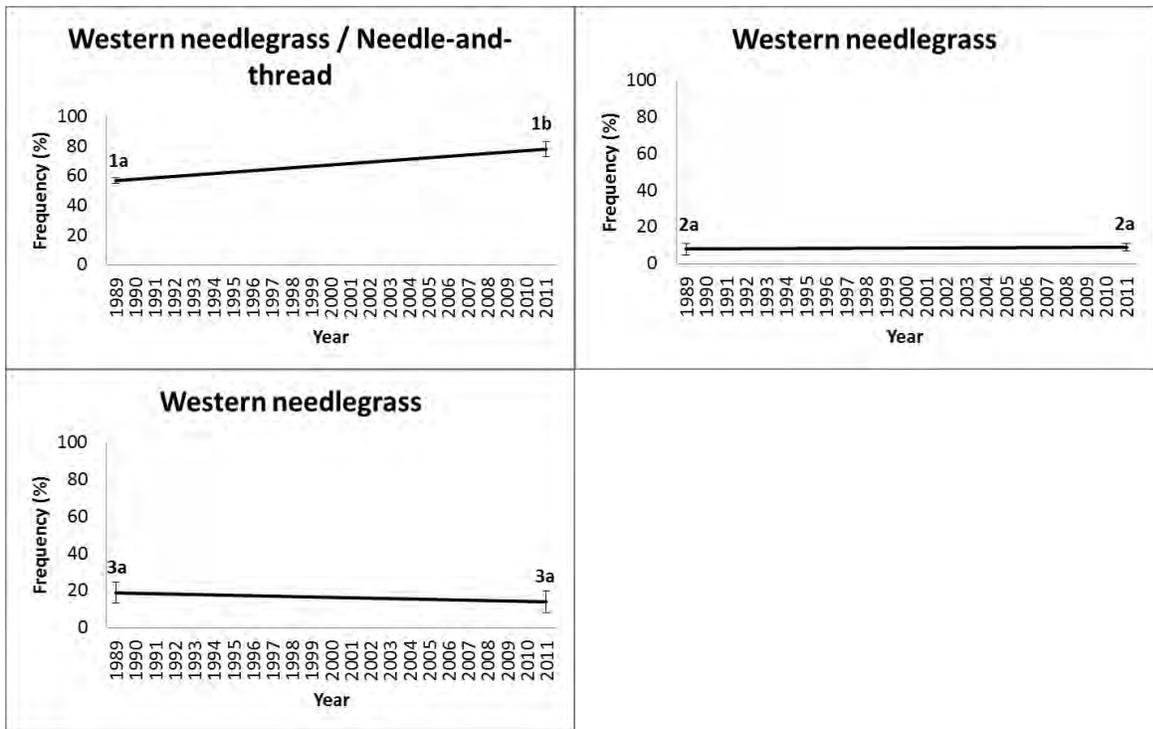


Figure 9. Needlegrass frequency in the South Camus Allotment, Elmore County, Idaho, in 02S09E25A (1), 02S09E25B (2), and 02S09E24 (3). Different letters above error bars indicate significant differences ($P < 0.1$).

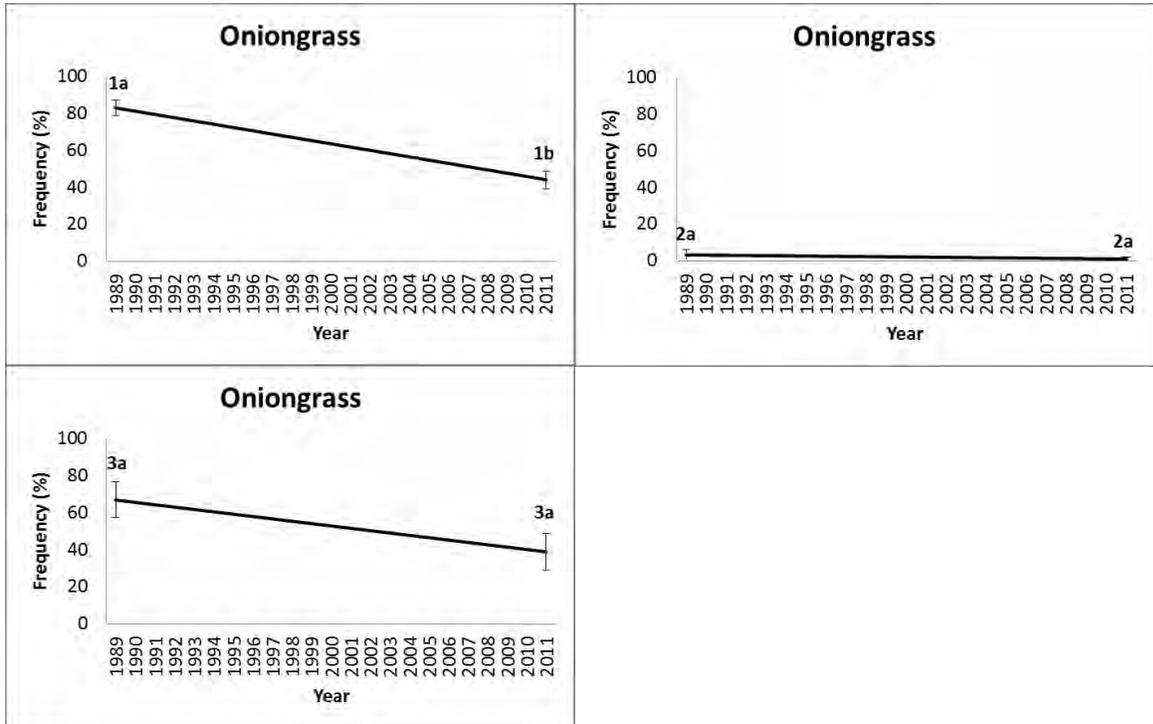


Figure 10. Oniongrass frequency in the South Camus Allotment, Elmore County, Idaho, in 02S09E25A (1), 02S09E25B (2), and 02S09E24 (3). Different letters above error bars indicate significant differences ($P < 0.1$).

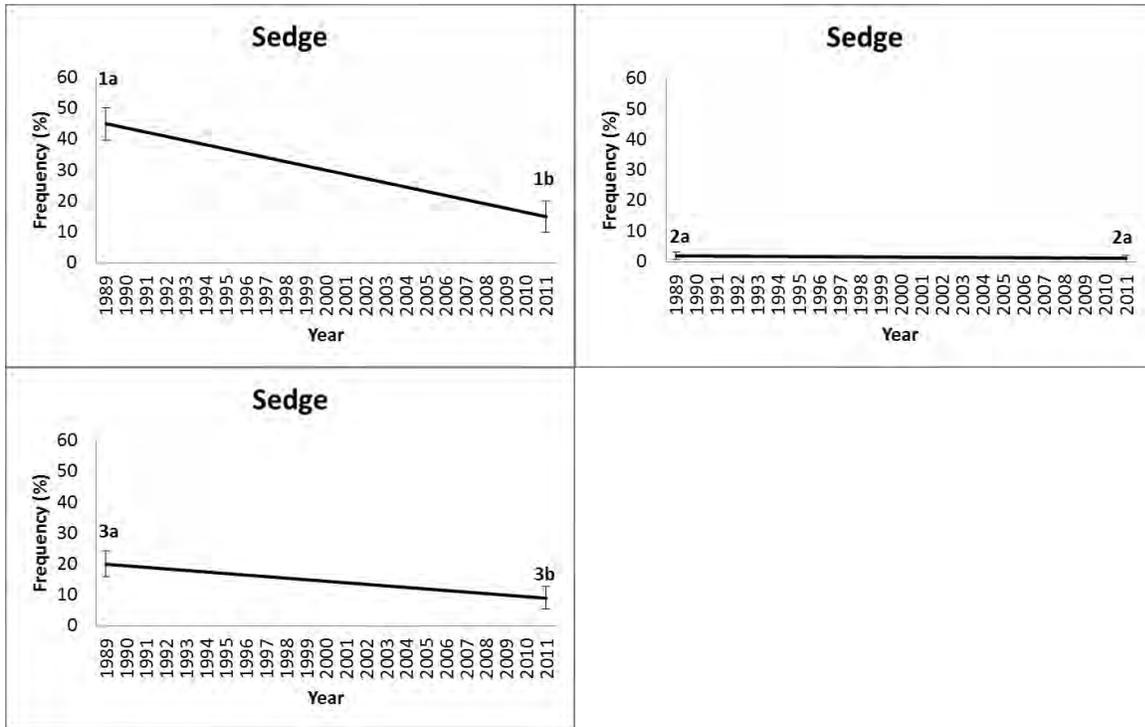


Figure 11. Sedge frequency in the South Camus Allotment, Elmore County, Idaho, in 02S09E25A (1), 02S09E25B (2), and 02S09E24 (3). Different letters above error bars indicate significant differences ($P < 0.1$).

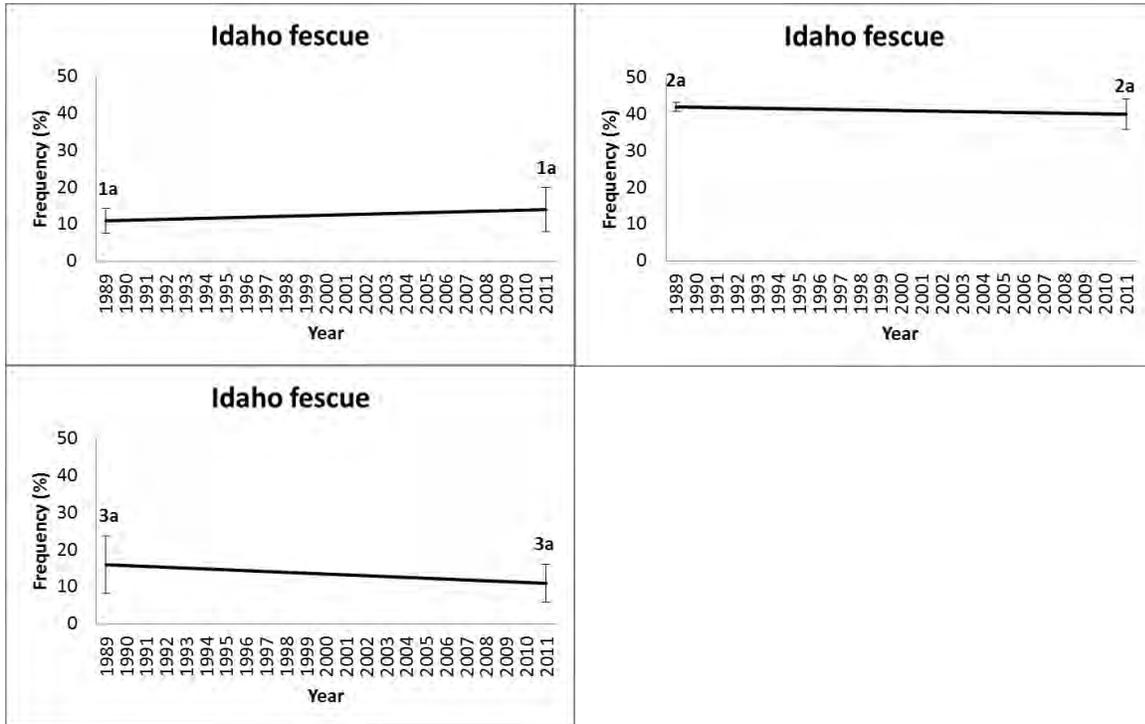


Figure 12. Idaho fescue frequency in the South Camus Allotment, Elmore County, Idaho, in 02S09E25A (1), 02S09E25B (2), and 02S09E24 (3). Different letters above error bars would indicate significant differences ($P < 0.1$).

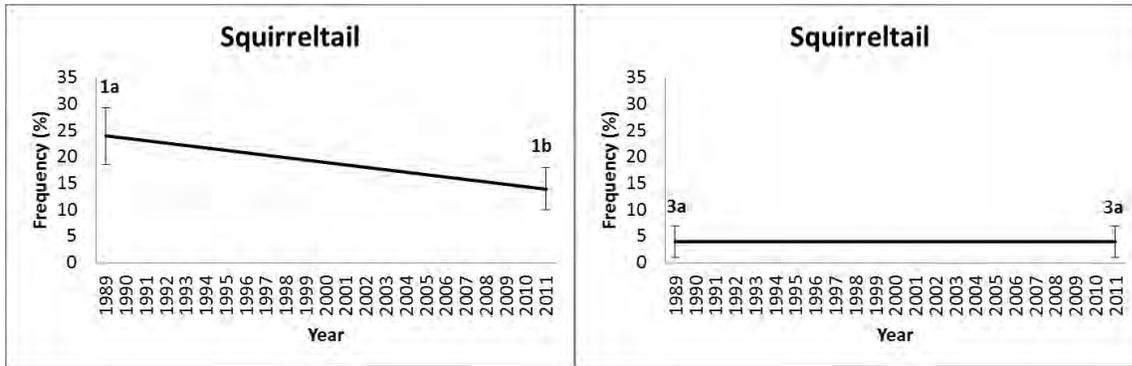


Figure 13. Squirreltail frequency in the South Camus Allotment, Elmore County, Idaho, in 02S09E25A (1) and 02S09E24 (3). Squirreltail was not detected in 02S09E25B. Different letters above error bars indicate significant differences ($P < 0.1$).

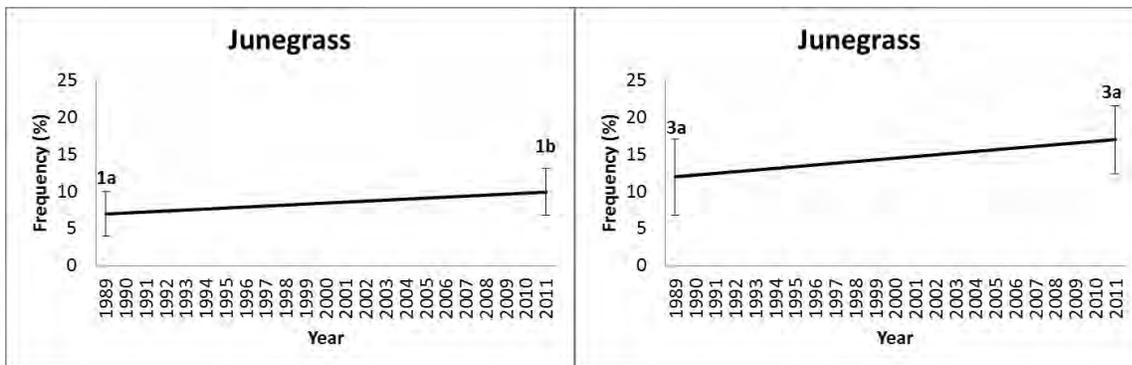


Figure 14. Junegrass frequency in the South Camus Allotment, Elmore County, Idaho, in 02S09E25A (1) and 02S09E24 (3). Junegrass was not detected in 02S09E25B. Different letters above error bars indicate significant differences ($P < 0.1$).

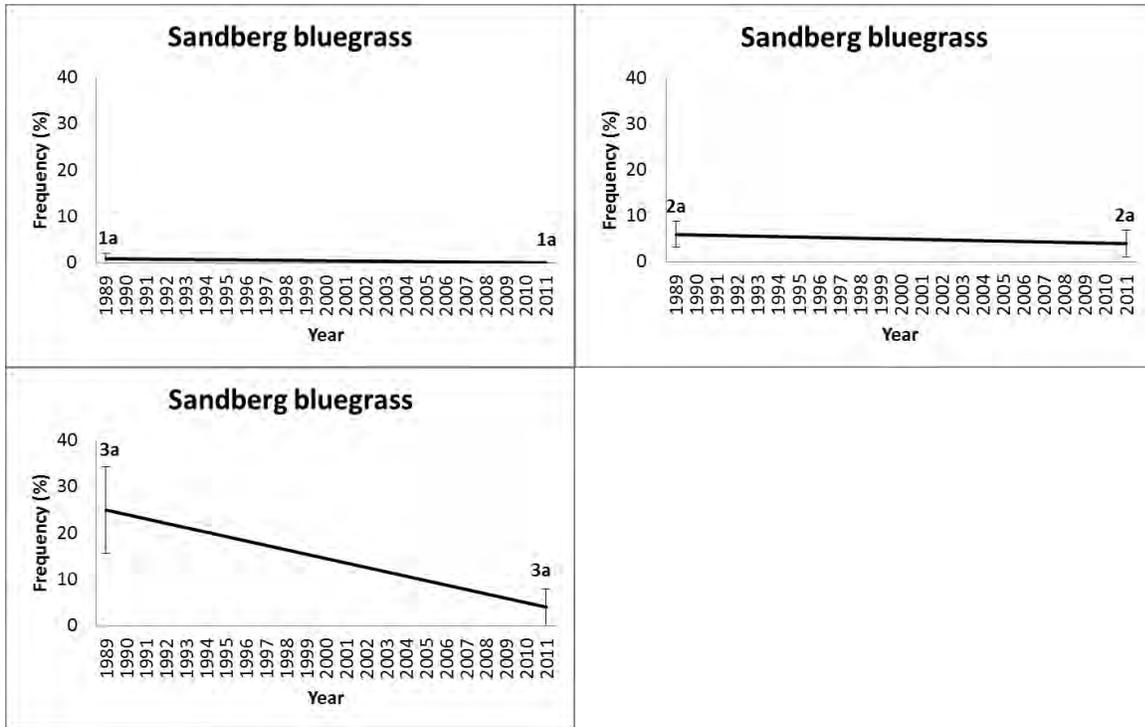


Figure 15. Sandberg bluegrass frequency in the South Camus Allotment, Elmore County, Idaho, in 02S09E25A (1), 02S09E25B (2), and 02S09E24 (3). Different letters above error bars would indicate significant differences ($P < 0.1$).

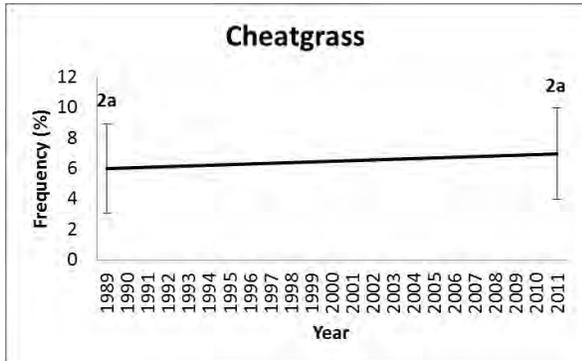


Figure 16. Cheatgrass frequency in the South Camus Allotment, Elmore County, Idaho, in 02S09E25B (2). Cheatgrass was not detected in 02S09E25A or 02S09E24. Different letters above error bars would indicate significant differences ($P < 0.1$).

Standard 5: Seeding

Seedings have likely occurred following fires; however, no seeded species dominate plant communities and this standard does not apply.

Standard 6: Exotic Plant Communities

Although exotic species are present within this allotment, they do not occur to an extent that this standard would apply.

Standard 7: Water Quality

Little Canyon Creek was placed on the Idaho Department of Environmental Quality (IDEQ) 303(d) list of water quality impaired streams in 1998 (2008 IDEQ 305(b) Integrated Report). IDEQ prepared the C. J. Strike/King Hill Total Maximum Daily Load (TMDL) evaluation and sediment/siltation targets were placed on this stream. Little Canyon Creek in segment 024.6 met the TMDL targets of less than 30% fine sediment. Temperature data collected by BLM in 2008 and 2009 show that standards for cold water aquatic life were also being met. Water samples for bacteria from 2008 and 2009 showed that standards for primary and secondary contact recreation were also being met.

Standard 8: Threatened and Endangered Species

Plants

No federally-listed or BLM Special Status Species are known to occur within the allotment.

Wildlife

The general health of upland and riparian communities is important for a broad diversity of wildlife, including sensitive species. Habitat was evaluated using riparian information (Standard 2) and native upland plant community information (Standard 4). These assessments include information regarding abundance, diversity, vigor, cover of plants, structure and trend of plant communities, grazing utilization, and weed presence.

The gray wolf was removed from the Endangered Species list in 2009. However, it remains a BLM Special Status Species. Wolves have occurred on the upper portions of the Bennett Mountain Area, and this allotment provides potential habitat. However, no wolves have been sighted in the allotment. A few gray wolves were removed from an allotment to the southwest in 2003 for livestock predation.

No sage-grouse breeding assessments were conducted in this allotment because the area is not considered breeding habitat.

Surveys for the northern goshawk, flammulated owl, and spotted bat were conducted in the summer of 2004. None were detected; however, portions of the allotment provide potential habitat for these species.

The area is a mosaic of forest and sagebrush, and provides habitat for mule deer, elk, and a variety of other wildlife species.

Fish

Electro-fishing transects show that redband trout, a BLM Special Status Species, are present in Little Canyon Creek. The segment provides the water quality and aquatic habitat structure necessary to support redband trout populations.

Appendices and Maps

Appendix 1. Indicators of Rangeland Health

Allotment - Pasture		1043	1043	1043	1043
Identifier		B-108	B-113	B-203	B-204A
Location		02S09E24	02S09E24	02S09E24	02S09E24
Ecological Site		Loamy 12-16	Aspen 20+	Loamy 12-16	Loamy 12-16
Indicator	Attribute				
1. Rills	S-H	N-S	N-S	N-S	N-S
2. Water Flow Patterns	S-H	S-M	S-M	S-M	S-M
3. Pedestals/Terracettes	S-H	S-M	N-S	N-S	N-S
4. Bare Ground	S-H	S-M	N-S	S-M	M
5. Gullies	S-H	N-S	N-S	N-S	N-S
6. Wind Scoured, Blowouts and/or Depositions	S-H	N-S	N-S	N-S	N-S
7. Litter Movement	S-H	N-S	N-S	S-M	S-M
8. Soil Surface to Erosion	S-H-B	S-M	N-S	S-M	M
9. Soil Surface Loss or Degradation	S-H-B	S-M	N-S	N-S	M
10. Plant Community Composition and Distribution Relative to Infiltration and Runoff	H	S-M	S-M	S-M	S-M
11. Compaction Layer	S-H-B	N-S	N-S	N-S	N-S
12. Functional / Structural Groups	B	S-M	S-M	N-S	N-S
13. Plant Mortality / Decadence	B	S-M	N-S	N-S	S-M
14. Litter Amount	H-B	S-M	S-M	N-S	N-S
15. Annual Production	B	S-M	N-S	N-S	N-S
16. Invasive Plants	B	N-S	N-S	S-M	N-S
17. Reproductive Capability of Perennial Plants	B	S-M	N-S	N-S	S-M

S= Soil/Site Stability; H= Hydrologic Function; B= Biotic Integrity

N-S = None to Slight departure from expected range S-M = Slight to Moderate departure from expected range M = Moderate departure from expected range M-E= Moderate to Extreme departure from expected range E = Extreme departure from expected range

Maps

EVALUATION REPORT

Achieving the Idaho Standards for Rangeland Health

Field Office: IDB010 Four Rivers

Allotment Name and Number: South Camas (01043)

Name of Permittee(s): Samuel Blackwell #1101784

Introduction

The South Camas (#01043) Allotment is located on the east side of Bennett Mountain Road near Bennett Mountain summit, approximately 18 miles north of Glens Ferry, Idaho. Land ownership within the allotment is comprised of approximately 962 acres of public BLM-administered, 548 acres of public US Forest Service-administered lands, 39 acres of State, and 236 acres of private land, totaling 1,785 acres.

Standards Applicable

The Idaho Standards for Rangeland Health and Guidelines for Livestock Grazing Management are used as management goals to maintain or improve resources, protect cultural resources, and sustain productivity of the land. Standards that are appropriate to a particular allotment are used, and provide information which is used to determine the health and condition of public lands. This document is the evaluation of information presented in the allotment rangeland health assessment and whether rangeland health standards are being achieved. The determination of what significant factors or causal agents are involved and whether or not livestock management practices are in conformance with applicable guidelines is presented in the Determination Document.

Six of the eight standards apply to this allotment: Standards 1 (Watersheds), 2 (Riparian Areas and Wetlands), 3 (Stream Channels and Floodplains), 4 (Native Plant Communities), 7 (Water Quality), and 8 (Threatened and Endangered Plants and Animals). Standard 5 (Seeding) does not apply because no seedings have occurred on public lands in this allotment. Standard 6 (Exotic Plant Communities) does not apply because, although exotic annual plants do occur, they do not occur in sufficient density or frequency to warrant evaluation under this standard.

EVALUATE STANDARDS

Standard 1: Watersheds

Watersheds provide for the proper infiltration, retention, and release of water appropriate to soil type, vegetation, climate and landform to provide for proper nutrient cycling, hydrologic cycling, and energy flow.

Evaluation and Information Sources

Rangeland Health Field Assessments, indicating the state of the rangeland in 2004, and long-term monitoring of the plant community and other watershed health indicators from 1989 to 2011 were used to assess the state and trend of watershed conditions.

Rangeland Health and Long-Term Trends

Rangeland health field assessment, long-term monitoring data and photographs indicate that the watershed is functioning properly, resulting in a static trend in ecological condition. Four rangeland health field assessments were conducted in 2004 and three long-term trend plots were surveyed in 1989 and 2011. Three of the assessments were rated in near reference condition, while the other had moderate damage from trampling. The long-term plots showed no signs of degradation, other than some trampling, as well. No wildfires have been documented here since 1957.

Evaluation Finding – Allotment/watershed is:

- Meeting the Standard
- Not Meeting the Standard, but making significant progress towards meeting
- Not Meeting the Standard

Rationale for Evaluation Finding

Resource issues were observed at one of the four assessment locations and in the trend plots, but these moderate disturbances did not disrupt the watershed's ability to absorb runoff appropriate to soil type, vegetation, climate and landform.

Standard 2: Riparian Areas and Wetlands

_____ Standard does not apply
Riparian-wetland areas are in properly functioning condition appropriate to soil type, climate, geology, and landform to provide for proper nutrient cycling, hydrologic cycling, and energy flow.

Evaluation and Information Sources:

Topographic maps, aerial photography, GIS data and imagery, field visits, and functioning condition assessments.

Rangeland Health:

Segments of Little Canyon Creek and Sheep Creek tributary are in proper functioning condition, supporting dense and diverse assemblages of woody plant species. Deep-rooted rushes and sedges are present and occupy most suitable sites.

Evaluation Finding – Allotment/watershed is:

- Meeting the Standard
- Not Meeting the Standard, but making significant progress towards meeting
- Not Meeting the Standard

Rationale for Evaluation Finding

Riparian vegetation is properly functioning to provide for proper nutrient cycling, hydrologic cycling, and energy flow.

Standard 3: Stream Channel and Floodplains

___ Standard does not apply

Stream channels and floodplains are properly functioning relative to the geomorphology (e.g., gradient, size, shape, roughness, confinement, and sinuosity) and climate to provide for proper nutrient cycling, hydrologic cycling, and energy flow.

Evaluation and Information Sources:

Topographic maps, aerial photography, GIS data and imagery, field visits, and functioning condition assessments.

Rangeland Health:

Little Canyon Creek is armored by rocky substrate and the channel is laterally and vertically stable. Adequate root mass is present to stabilize streambanks in the erosive, decomposed granitic soil. Width-depth ratios, pool frequency, and sinuosity are appropriate for the landscape setting. Active bank erosion is within the natural range ($\leq 20\%$ active erosion) for the substrate and stream type.

Evaluation Finding – Allotment/watershed is:

- Meeting the Standard
- Not Meeting the Standard, but making significant progress towards meeting
- Not Meeting the Standard

Rationale for Evaluation Finding

Adequate root mass was present to stabilize streambanks in the erosive, decomposed granitic soil, and width-depth ratios, pool frequency, and sinuosity were appropriate for the landscape setting.

Standard 4: Native Plant Communities

Healthy, productive, and diverse native animal habitat and populations of native plants are maintained or promoted as appropriate to soil type, climate, and landform to provide for proper nutrient cycling, hydrologic cycling, and energy flow.

Evaluation and Information Sources

Rangeland Health Field Assessments, indicating the state of the rangeland in 2004, and long-term monitoring of the plant community and other watershed health indicators from 1989 to 2011 were used to assess the state and trend of watershed conditions.

Rangeland Health and Long-Term Trends

Rangeland health field assessment, long-term monitoring data, and photographs indicate that the native plant community was healthy and there was a static trend in ecological condition. Four field assessments were conducted in this allotment. Overall, the plant communities at the assessment sites were rated near reference condition. The plant communities were diverse in composition and vigorous. The trend of the native plant community is static for large

bunchgrasses; whereas, shrub and ruderal grass frequencies are decreasing, as is to be expected as the canopy closes in the absence of fire.

Evaluation Finding – Allotment/watershed is:

- Meeting the Standard
- Not Meeting the Standard, but making significant progress towards meeting
- Not Meeting the Standard

Rationale for Evaluation Finding

Rangeland health assessments and long term monitoring indicate the plant communities in this allotment are functioning to cycle nutrients, water, and energy sufficiently to maintain a diverse and healthy perennial plant community.

Standard 5: Seedings Standard does not apply
Rangelands seeded with mixtures, including predominately non-native plants, are functioning to maintain life form diversity, production, native animal habitat, nutrient cycling, energy flow, and the hydrologic cycle.

Evaluation and Information Sources

Rangeland health field assessment, long-term monitoring data and/or photographs, wildfire database, field visits, actual use reports, and allotment files.

Standard 6: Exotic Plant Communities, Other than Seedings Standard does not apply
Exotic plant communities, other than seedings, will meet minimum requirements of soil stability and maintenance of existing native and seeded plants.

Evaluation and Information Sources

Rangeland health field assessment, long-term monitoring data and/or photographs, wildfire database, field visits, actual use reports, and allotment files.

Standard 7: Water Quality Standard does not apply
Surface and ground water on public lands comply with the Idaho Water Quality Standards.

Evaluation and Information Sources:

Idaho Department of Environmental Quality (IDEQ) data and temperature data-loggers.

Rangeland Health

The IDEQ found no impairment to water quality in any segment of Little Canyon Creek, based on monitoring from 2001– 2005. The standards for cold water biota and salmonid spawning were met; however, this stream was removed from the 303(d) list (IDEQ 2008 Integrated Report). Subsequent BLM thermograph data collected in 2009 using in-stream data-loggers showed that standards for cold water aquatic life were being met. Water samples for bacteria, taken in 2008 and 2009, showed that IDEQ standards for primary and secondary contact recreation were also being met in Little Canyon Creek.

In-stream thermograph data show that standards for cold water biota and salmonid spawning were met in Little Canyon Creek. Bacteria samples collected in June 2009 show that standards for secondary contact recreation were also met.

Evaluation Finding – Allotment/watershed is:

- Meeting the Standard
- Not Meeting the Standard, but making significant progress towards meeting
- Not Meeting the Standard

Rationale for Evaluation Finding

The standards for cold water biota and salmonid spawning were met in Little Canyon Creek. Water samples for bacteria, collected in June 2009, show that standards for secondary contact recreation were also met.

Standard 8: Threatened and Endangered Plants and Animals ___ Standard does not apply
Habitats are suitable to maintain viable populations of threatened and endangered, sensitive, and other special status species.

Evaluation and Information Sources

Rangeland health field assessment, site photographs, field visits, allotment files, plant and animal surveys, and CDC database.

Rangeland Health

Plants

No federally listed or BLM Special Status Species are known to occur in this allotment.

Wildlife

No federally listed are known to occur here. Greater sage-grouse, a candidate species could occur in limited portions of the allotment. Habitat is not considered suitable for sage-grouse breeding, so no assessments were conducted. The un-forested portions could provide late brood rearing habitat for sage-grouse. Surveys for the northern goshawk, flammulated owl, and spotted bat were conducted in summer of 2004, as portions of the allotment provide potential habitat for these species. None of the species were detected. Consisting of a mosaic of forest and sagebrush, the area provides habitat for mule deer, elk, and a variety of other species.

Fish

The water quality and aquatic habitat structure in Little Canyon Creek provides the necessary conditions to support a healthy and viable redband trout population.

Rangeland Health Changes

Long term monitoring indicates a stable trend in plant communities in this allotment.

Evaluation Finding – Allotment/watershed is:

- Meeting the Standard
- Not Meeting the Standard, but making significant progress towards meeting
- Not Meeting the Standard

Rationale for Evaluation Finding

Rangeland health assessments and long term monitoring indicate the plant communities are functioning appropriately to cycle nutrients and energy sufficient to maintain a diverse and healthy perennial plant community. Due to the diverse and healthy perennial plant community and riparian areas, the needs of special status plant, wildlife and fish species are being met.