

Rangeland Health Assessment

Hammett #6 Allotment (01038)

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General Allotment Information

The Hammett #6 Allotment (01038) is located east of Bennett Creek and west of Bennett Mountain, approximately 12 miles northeast of Mountain Home, Idaho (Table 1, Map 1).

Table 1. Land status acres by pasture, Hammett #6 Allotment, Elmore County, Idaho.

Pasture	BLM	Private	State	Total
1 - Upper Dive Cr	352	20	159	531
2 - Dive Cr	1,005		44	1,049
3 - Bennett Mtn.	1,500	34	75	1,609
4 - Willow Cr ¹	3,320	118	1,419	4,857
Exclosures	332	7	42	381
Total	6,509	179	1,739	8,427

¹ The permittee installed fencing on State lands to subdivide the Willow Creek Pasture into three pastures after the 2010 Hot Tea Fire.

The allotment is located within the U.S. Department of Agriculture Major Land Resource Area B-10, the Central Rocky and Blue Mountain Foothills (USDA-NRCS, 2006). Major landforms in the allotment include side slopes, toe slopes, and ridgelines. The soils within the allotment are chiefly composed of Badge-Immiant-Rubble land complex with Gaib-Rubble land complex along the eastern side of the allotment and Immiant-Ruckles-Rock outcrop complex in the western portion. The Loamy 12-16” ecological site comprises approximately 75% of the allotment, and the remaining 25% is comprised of South slope fractured 12-16” ecological site [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 expected native plant communities associated with these ecological sites are dominated by mountain big sagebrush with bluebunch wheatgrass, and Idaho fescue in the Loamy sites (USDA-NRCS, 2006).

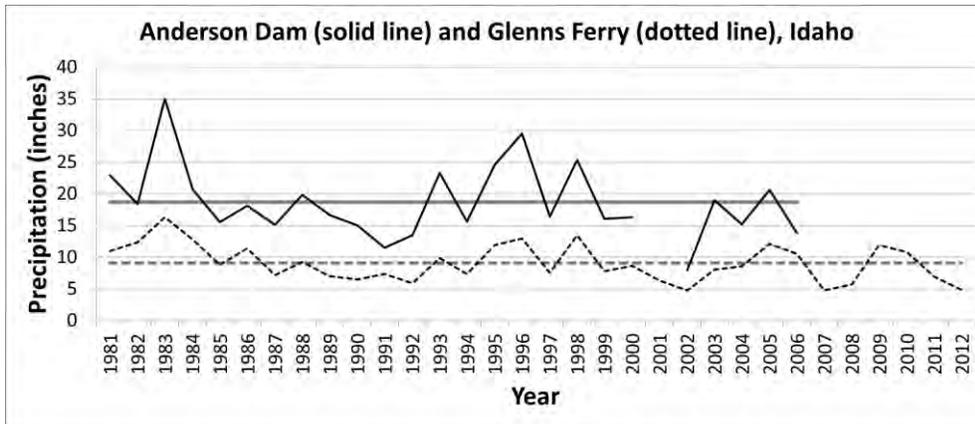


Figure 1. Annual and mean precipitation at Anderson Dam and Glens Ferry, Idaho (Source: National Climate Data Center).

BLM fire history records indicated that no fires occurred on this allotment between 1957 and 1999. Subsequently, four fires, which to varying degrees overlapped one another, occurred between 2000 and 2012 (Map 1). In 2000, the Oregon Trail fire burned approximately 1,461 acres (22%) of public lands located within the boundaries of the allotment and resulted in the destruction of most of the above ground vegetation on approximately 43% of the total acreage in Pasture #1, 82% of the total acreage in Pasture #2, and 14% of the total acreage in Pasture #4. The 2010 Hot Tea Fire burned approximately 3,109 acres (48%) public land within the allotment, including approximately 416 acres that were previously affected by the Oregon Trail Fire. The 2012 Stout Fire burned approximately 1,688 acres (26%) of the public lands within the allotment and mostly overlapped the Hot Tea Fire. The 2013 Pony Complex burned approximately 100 acres (2%) of public land within the boundaries of the allotment most of which was previously burned in the 2000 Trail fire. Approximately 372 acres of public and 209 acres of State lands located on the western side of Pasture #4 that was burned in the 2000 Oregon Trail Fire was also burned in the 2010 Hot Tea and 2012 Stout fires.

Livestock Grazing Management

The Hammett #6 Allotment was created in the mid-1960s. The authorized season of use is from March 27 to May 25, annually. The total permitted livestock use is 911 Animal Unit Months (AUMs; Table 2).

Table 2. Authorized use summary, Hammett #6 Allotment, Elmore County, Idaho.

Authorization Number	Livestock		Season of Use		% Public Land	Authorized AUMs		
	Kind	Number	Begin	End		Active	Suspended	Permitted
1101849	Cattle	563	03/27	05/25	82	911	0	912

Based on actual use reports submitted by the authorized livestock operator or annual authorizations, annual use ranged from 134 to 911 animal unit months (AUMs) between 1997 and 2013 (Table 3). The current grazing permit allows livestock numbers to vary annually, provided the period of use and AUMs are not exceeded.

Table 3. Actual livestock use, Hammett #6 Allotment, Elmore County, Idaho.

Grazing Year	Use Period		AUMs
	On Date	Off Date	
1997	04/06	06/05	873
1998	04/06	06/04	738
1999	04/06	06/05	911*
2000	03/27	05/23	801
2001	03/27	05/25	904
2002	03/27	05/25	778
2003	03/27	05/25	911*
2004	03/27	05/25	911*
2005	03/27	05/25	911
2006	03/25	05/25	789
2007	03/27	05/25	906
2008	03/27	05/25	911
2009	03/27	05/25	911*
2010	03/27	05/25	911*
2011	03/27	05/25	911*
2012	03/26	05/25	124
2013	03/27	05/26	684

*AUM's based on annual billing, no actual use on file.

Following the Oregon Trail Fire, BLM issued a Full Force and Effect Decision (9/29/2000) closing the Upper and Lower Dive Creek pastures to livestock grazing until "at least fall 2004". The decision temporarily reduced the permittee's active grazing preference from 912 AUMs to 584 AUMs for the term of the closure. This decision was appealed by the permittee. In a November 2, 2000, follow-up letter, BLM committed to making a final determination of any temporary AUM reductions based on the proposed construction of a temporary fence to exclude livestock from the burned areas within the Lower Dive Creek Pasture. However, in a March 28, 2001, annual grazing bill, the permittee was errantly billed for a total of 904 AUMs, which he paid on April 6, 2001. Thus, the actual use figure for 2001 does not reflect the 364 AUM reduction imposed by the emergency closure decision.

In a February 8, 2002 letter, BLM acknowledged the fence construction, and reduced the temporary suspension of from 364 AUMs to 150 AUMs thereby increasing the permittee's active preference to 762 AUMs. Prior to the start of the 2002 grazing season, on February 22, 2002, BLM billed the permittee for 762 AUMs. Said bill was paid on March 1, 2002.

On December 12, 2002, BLM entered in to a stipulated agreement which modified the grazing closure and reinstated the remaining, temporarily suspended 150 AUMs. Since 2003, the permittee's active preference for the allotment has been authorized at the full 912 AUMs of annual use.

After the Hot Tea Fire, the permittee placed fencing on State lands to subdivide Pasture 4 into three pastures. Data were collected before the subdivision; therefore, this document will continue to reference Pasture 4 (Willow Creek) as it existed prior to 2010.

Utilization

Grazing utilization transects were conducted in 200. Utilization levels were placed into the following categories (BLM Technical Reference 1734-4, 1996): non-use (0-5%), slight use (6-20%), light use (21-40%), moderate use (41-60%), heavy use (61-80%), severe use (81-94%), and total use (95-100%). Utilization on bluebunch wheatgrass averaged 34%; average use on Thurber needlegrass was 22%; Idaho fescue use averaged 32%; and bottlebrush squirreltail use averaged 25%. Two landscape appearance transects averaged 31% utilization.

Idaho Standards for Rangeland Health

In 2004, the BLM conducted nine rangeland health field assessments in the allotment using Interagency Technical Reference 1734-6, Interpreting Indicators of Rangeland Health ver. 3 (Map 1). 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 were assessed according to the Idaho Standards for Rangeland Health, as adopted by Idaho BLM in 1997. The following subsections discuss resource conditions as they relate to each of the standards.

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 1987/1990 to 2011 were used to assess the state and trend of watershed conditions (Map 1). Together these data sets indicated that the watershed protection from vegetation had declined and there were problems with erosion and soil degradation.

Rangeland Health Field Assessment

Twelve of the 17 rangeland health indicators (1-11 and 14) relate to soil stability and hydrologic function (Table 4). 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 "none to slight" range of departure from expected conditions for the ecological site at three sites, etc.

Table 4. Native plant community rangeland health indicators, Hammett #6 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					9
2-Water Flow Patterns			1	7	1
3-Pedestals/Terracettes			2	6	1
4-Bare Ground				3	6
5-Gullies				1	8
6-Wind Scoured blowouts/depositions					9
7-Litter Movement				6	3
8-Soil Surface Resistance to Erosion			1	5	3
9-Soil Surface Loss or Degradation			1	5	3
10-Plant Community Composition and Distribution Relative to Infiltration and Runoff			1	8	
11-Compaction Layer					9
14-Litter Amount		1		6	2
Total Indicator Units = 108 (12 indicators x 9 locations)	0	1	6	47	54

Seven of the 108 indicators relating to watershed health rated outside the normal range of variability of conditions expected for the ecological site (Table 4, Appendix 1). These seven ratings occurred at three assessment locations in Dive Creek Pasture. However, several ratings were misapplied in pastures 3 and 4: four of the five RHAs noted pedestals and Terracettes (indicators #3 and #9) and all noted the need for more bunchgrasses (Indicator #10); yet none of these indicators were rated as outside the normal range of variability.

Numerous accentuated water flow patterns were observed at one location. Pedestalling of Sandberg bluegrass and bluebunch wheatgrass was occurring at two locations, where root exposure was a common problem. These erosional features were the main issues driving the ratings. All soil/site stability and hydrologic function indicators at the field assessments locations in pastures 3 and 4 were rated within the normal range of variability, although exotic annual grasses were present in all RHAs in Thorn Creek Pasture.

Long-term Monitoring

Basal cover of persistent vegetation (stems of perennial grasses, perennial forbs, and shrubs), biological soil crust cover, and bare ground were quantified in four locations (02S08E27A, 02S08E27B, 02S08E27C and 02S08E35; Map 1) in 1987/1990, 2004, and 2011 using the point cover method. In the long-term, persistent vegetation cover decreased in one location, was static in two locations, and increased in one location (Figure 2; in 02S08E27A cover decreased between 1987 and 2004 and then increased between 2004 and 2011, in 02S08E27C cover was static between 1990 and 2004, and then increased between 2004 and 2011).

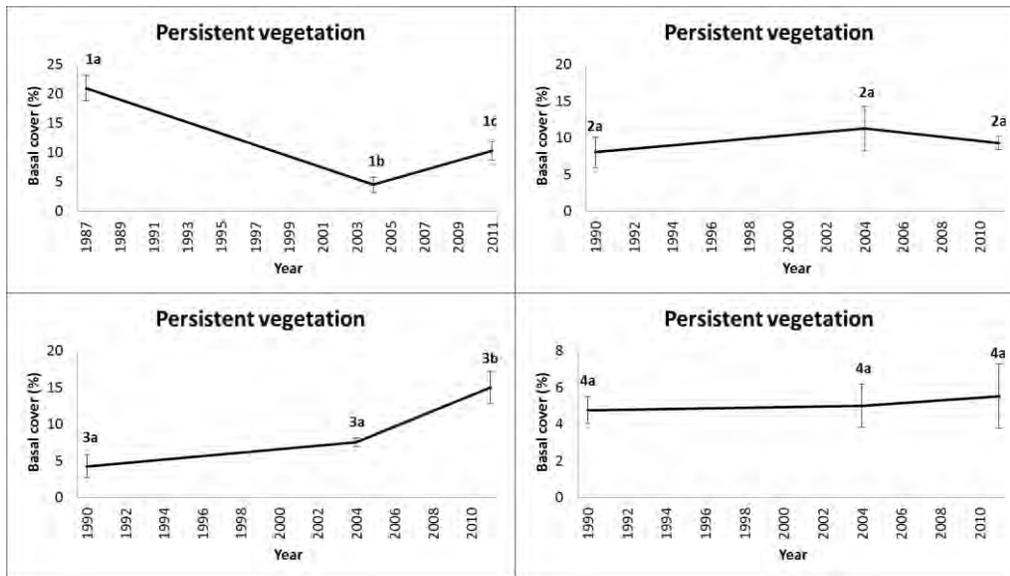


Figure 2. Basal cover of persistent vegetation in the Hammett 6 Allotment, Elmore County, Idaho, in the Dive Creek Pasture [02S08E27A (1), 02S08E27B (2), and 02S08E27C (3)] and the Thorn Creek Pasture [02S08E35 (4)]. Different letters above error bars indicate significant differences ($P < 0.1$).

Biological soil crust cover (Figure 3) was very low in all four locations [it was 1% or less in 02S08E27A and did not change significantly between 1987 and 2011; it was static in 02S08E27B (trace cover) and 02S08E35 (0–3% cover) between 2004 and 2011; in 02S08E27C, there was an upward trend between 2004 (<1% cover) and 2011 (2% cover)].

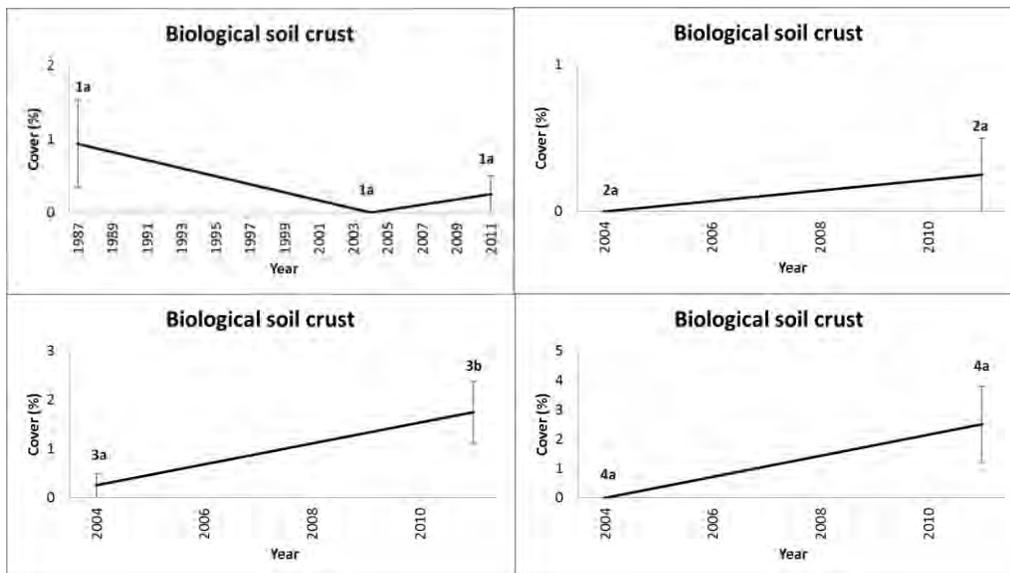


Figure 3. Biological soil crust cover in the Hammett 6 Allotment, Elmore County, Idaho, in the Dive Creek Pasture [02S08E27A (1), 02S08E27B (2), and 02S08E27C (3)] and the Thorn Creek Pasture [02S08E35 (4)]. Different letters above error bars indicate significant differences ($P < 0.1$).

In the long-term, bare ground decreased in one location, was static in two locations, and increased in one location (bare ground increased in 02S08E27A between 1987 and 2004 and then

was static between 2004 and 2011, it increased in 02S08E27B between 1990 and 2004 and then decreased between 2004 and 2011, in 02S08E35 there was no change between 1990 and 2004, and then there was an overall decrease between 1990 and 2011). Changes in basal area of persistent vegetation, biological soil crust cover, and bare ground would affect infiltration and erosion. At $\leq 3\%$ cover; however, biological soil crust is not extensive enough to protect against erosion, and an upward or downward trend would not influence the outcome.

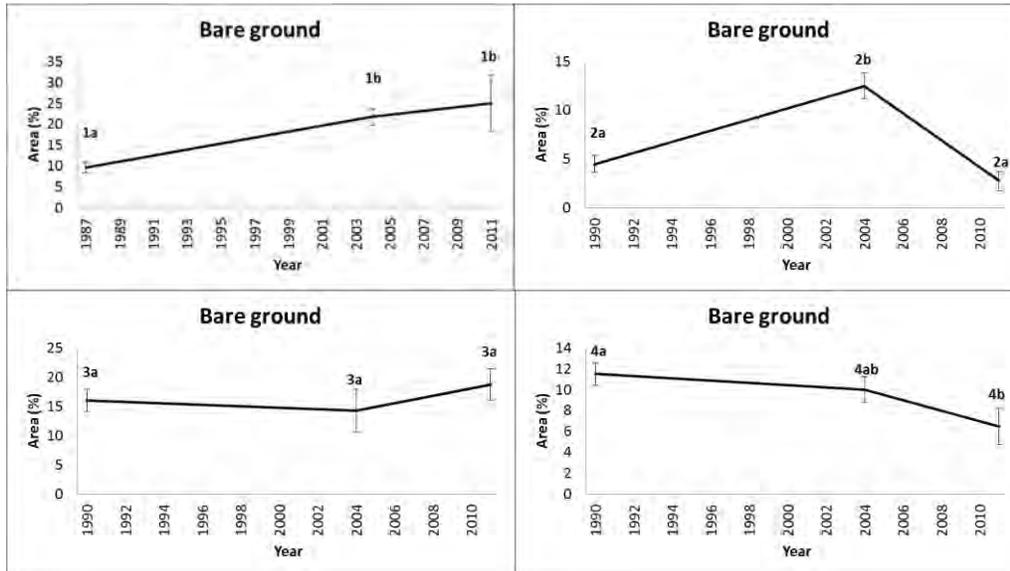


Figure 4. Bare ground in the Hammett 6 Allotment, Elmore County, Idaho, in the Dive Creek Pasture [02S08E27A (1), 02S08E27B (2), and 02S08E27C (3)] and the Thorn Creek Pasture [02S08E35 (4)]. Different letters above error bars indicate significant differences ($P < 0.1$).

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

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 2005 through 2009 (Map 2). 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 7.9 miles of stream were in PFC (Table 5, Map 2). There was no variance in stream functioning condition ratings between Standards 2 and 3 on any discretely stratified stream segment.

Table 5. Stream name, segment ID, segment length, and functioning condition rating summaries for streams, Hammett #6 Allotment, Elmore County, Idaho.

Stream Segment	Segment I.D.	Flow Regime¹	PFC²	FAR²	Total Stream Miles	H2O quality met?	Redband Trout Present?³
Bennett Creek	BENNE-019.1	P	3.7		3.7	Y	Y
	BENNE-021.1	P	1.3		1.3	Y	Y
Dive Creek	DIVE-000.0	I	0.2		0.2	Y	S
	DIVE-000.1	I	0.6		0.6	Y	S
	DIVE-000.8	I	1.1		1.1	Y	N
Willow Creek	WILLOW-000.0	I	0.5		0.5	Y	N
	WILLOW-000.8	I	0.5		0.5	Y	N
Total			7.9	0	7.9		
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

Bennett Creek

Two segments of Bennett Creek define the western boundary of this allotment, BENNE-021.1 (3.7 miles) and BENNE-019.1 (1.3 miles). Each segment was rated in PFC. These stream segments occur in a very rocky canyon, and with very few and localized exceptions, are inaccessible to livestock. These segments were populated by very dense willow communities. Sedges and rushes are infrequent here due to very coarse stream substrates. Stream channels were nearly 100% stable throughout each segment as very coarse rock, and confinement in a narrow valley, controls the stream morphology. The Oregon Trail (2000) and Stout (2012) fires burned several short reaches in riparian areas along Bennett Creek. However, as occurs in most arroyo-willow-dominated riparian plant communities, fire stimulates vigorous new leader growth in willows, and in just a few years the plant communities are fully recovered and productive.

Dive Creek

DIVE-000.0 is a 0.2 mile segment including a designated water gap and an enclosure. It was mostly inaccessible to livestock due to rocky, narrow, canyon features, together with enclosure fencing located on the north, east, and west sides of the stream and was rated in PFC. The dominant overstory species were composed of dense black hawthorn and arroyo willows.

Sedges and rushes were present, but the dense overstory suppressed their development. The stream channel was mostly vegetated and stable in the upper end, and vegetated, stable, and rock-armored in the lower section.

DIVE-000.2 is a 0.6 mile segment within an enclosure that was constructed in 1985 to protect a severely degraded portion of this stream. It was rated in PFC. Willow recruitment was moderate, and the segment was in an upward trend, although recent, localized watershed events have left some exposed and un-vegetated banks.

DIVE-000.8 is a 1.1 mile segment located in a narrow but accessible valley, and receives some livestock grazing use early in the season. It was rated in PFC. Vegetation here was mostly composed of arroyo willows with very limited sedges and rushes. Kentucky bluegrass was also present in fragmented communities. This segment was rock controlled and hydrologically stable.

Willow Creek

Two 0.5 mile segments (WILLOW-000.0, WILLOW-000.8) were rated in PFC. Arroyo willows were widely spaced along the narrow riparian area, and little woody species recruitment was occurring. This was likely due to the seasonal flow regime, coupled with many years of drought. Baltic rush and upland grasses were co-dominant vegetation types along the approximately 1-acre riparian area. The stream channel for both segments was stable with no excessive bank erosion or vertical or lateral movement.

Spring and Wetland Conditions

Two springs were rated for functioning condition; both were in PFC (Table 6, Map 2). Neither spring was developed to provide stock water.

Table 6. Spring functioning condition ratings and stock water developments, North Pasture, Hammett #1 Allotment, Elmore County, Idaho.

Spring	Location	Functioning Condition Rating ¹			Flow Regime ²	Developed (Y/N)
		PFC	FAR	NF		
Willow Complex	T02S R08E Sec 25 SESW, SENE; Sec 31 NWSW	X				N
Section 26	T02S R08E Sec 22 NESW	X				N

¹ PFC = proper functioning condition, FAR = functional-at-risk condition, NF = non-functioning condition

² P = Perennial, I = Intermittent

Willow Spring was rated in PFC. It supported a dense and vigorous riparian shrub community composed of willows, hawthorn, currant, and other deciduous shrubs, together with sedges and rushes, populating a wetland of about 4 acres.

Section 26 Spring was in PFC and was mostly occupied by healthy Nebraska sedge and Baltic rush communities. The deep-rooted sedges and rushes help protect substrates from excessive pugging and shearing.

Standard 4: Native Plant Communities

Rangeland Health Field Assessments evaluated the biotic integrity in 2004. Fire history layers indicated that two assessment locations burned prior to sampling; B-112 and B-191 burned in 2000. Long-term monitoring was used to evaluate the trend of the native plant community from 1987/1990 to 2011. These data sets revealed that rangeland health indicators were outside the range of historic variability, the native plant community was declining, and cheatgrass was increasing.

Rangeland Health Field Assessment

Nine of the seventeen rangeland health indicators (8, 9 and 11-17) relate to biotic integrity (Table 7). 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 7. Native plant community rangeland health indicators, Hammett #6 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	5	3
9-Soil Surface Loss or Degradation			1	5	3
11-Compaction Layer					9
12-Functional/Structural Groups			2	7	
13-Plant Mortality/Decadence				3	6
14-Litter Amount		1		6	2
15-Annual Production	1		1	7	
16-Invasive Plants		1		6	2
17-Reproductive Capability of Perennial Plants			1	6	2
Total Indicator Units = 81 (9 indicators x 9 locations)	1	2	6	45	27

Nine of the 81 indicators of biotic integrity rated in the moderate or higher range of departure from expected conditions for the ecological sites (Table 7, Appendix 1, Map 1). These nine indicator ratings occurred at four assessment locations, three in Pasture 2 and one in Pasture 4. However, several ratings were misapplied in pastures 3 and 4: a) four of the five RHAs noted old pedestals and Terracettes (indicators #3 and #9), b) all noted the need for more plants in the interspaces (#12), c) one RHA noted fairly high mortality of Sandberg bluegrass (#13), d) exotic annual grasses were present in all three RHAs in Pasture 4 (and dominant in 2/3 of these RHAs) (#16), and e) few to no seed heads on key bunchgrasses in four out of five RHAs (#17); yet only one of these indicators (#17 in one RHA) was rated as outside the normal range of variability.

Soil loss associated with pedestalled grasses in Pasture 2 drove the indicator rating beyond the normal range of variability. The other two locations in Pasture 2 were conducted within the 2000 Oregon Trail Fire perimeter. Conditions at these locations included the following: reduced soil surface resistance to erosion (#8) due to lower than expected levels of organic matter in the soil; low shrub density driving the rating for functional/structural groups (#12); reductions in annual production (#15); and presence of cheatgrass (#16). However, field form comments indicated that shrub seedlings were beginning to colonize the area. Reproductive capability of perennial plants (#17) at site B-191, an area also affected by the 2000 fire in Pasture 4, was

moderately less than expected due to low vigor of Sandberg bluegrass. At the other five assessment locations, all indicators relating to biotic integrity rated within the normal range of variability of expected conditions for the ecological sites.

Long-term Monitoring

Four nested plot frequency transects (NPFT) were surveyed in 1987/1990, 2004, and 2011, and photographed in 1989, 1990, 2004, 2006, and 2011 (Map 1). Together the transects and photographs revealed long-term trends within a 1.6 mile-long-swath at the ~4,700 foot elevation contour, ~0.5 miles east of Bennett Creek, in the Immiant-Ruckles-Rock Outcrop Complex with 4-12% slope (transects 02S08E27A, 02S08E27B, and 02S08E27C in Dive Creek Pasture and 02S08E35 in Thorn Creek Pasture). The southern half of the allotment, which burned in the 2010 Hot Tea and 2012 Stout fires (Map 1), and the steeper, higher elevations to the east, which comprised the majority of the allotment (mostly consisting of rubble land complexes with 20-80% slopes) were not monitored. Only one of the four trend locations burned within the sampling period; 02S08E27A burned in the 2000 Oregon Trail Fire. Trend plot 02S08E35 was not affected by the 2010 Hot Tea Fire.

The overstory consisted of mountain big or low sagebrush and widely scattered bitterbrush. Sagebrush frequency was static at <10% in 02S08E27A. Its frequency was greater, but generally declining, in the other locations (Figure 5). Bitterbrush was present at extremely low and static frequencies in three locations in 1987/1990 and was detected in just two locations in 2011 (Figure 6). The large native bunchgrass, bluebunch wheatgrass, was present in Dive Creek Pasture (Pasture 2), but was not detected in Thorn Creek Pasture (Pasture 4; Figure 7). Its frequency increased in 02S08E27A after the 2000 Oregon Trail Fire and was static in the long-term in the other two locations (02S08E27B and 02S08E27C). Squirreltail and trace amounts of Thurber's needlegrass were the only native medium bunchgrass species detected. The frequency for squirreltail declined in the long-term in half the locations (Figure 8; not showing Thurber's needlegrass, which was detected in 02S08E27B in 1990 and in 02S08E27C in 1990 and 2004). The small bunchgrass, Sandberg bluegrass, was present in all four locations at high frequencies in 1987/1990, but it declined in three of the locations in the long term (it decreased and then rebounded in the fourth; Figure 9). Native annual sixweeks fescue and exotic annual cheatgrass also increased in all four locations (Figure 11).

Photographs indicated that sagebrush reestablished in the 2000 Oregon Trail Fire area, but the understorey became dominated by annual grasses, which increased the risk of type-conversion to exotic annual grassland in 02S08E27A. Elsewhere, photographs indicated no obvious change in the shrub overstorey, a low amount of change in the understorey of 02S08E27C and 02S08E35, and increasing annual grasses in 02S08E27B.

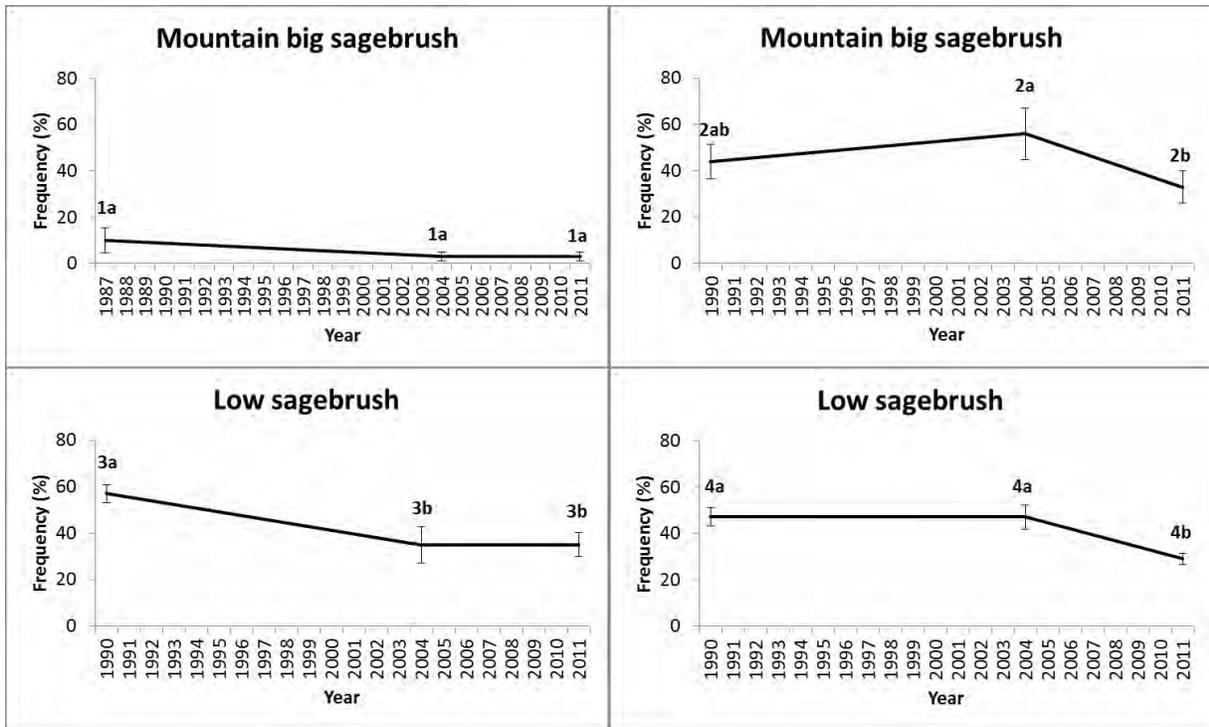


Figure 5. Sagebrush frequency in the Hammett 6 Allotment, Elmore County, Idaho, in the Dive Creek Pasture [02S08E27A (1), 02S08E27B (2), and 02S08E27C (3)] and the Thorn Creek Pasture [02S08E35 (4)]. Different letters above error bars indicate significant differences ($P < 0.1$).

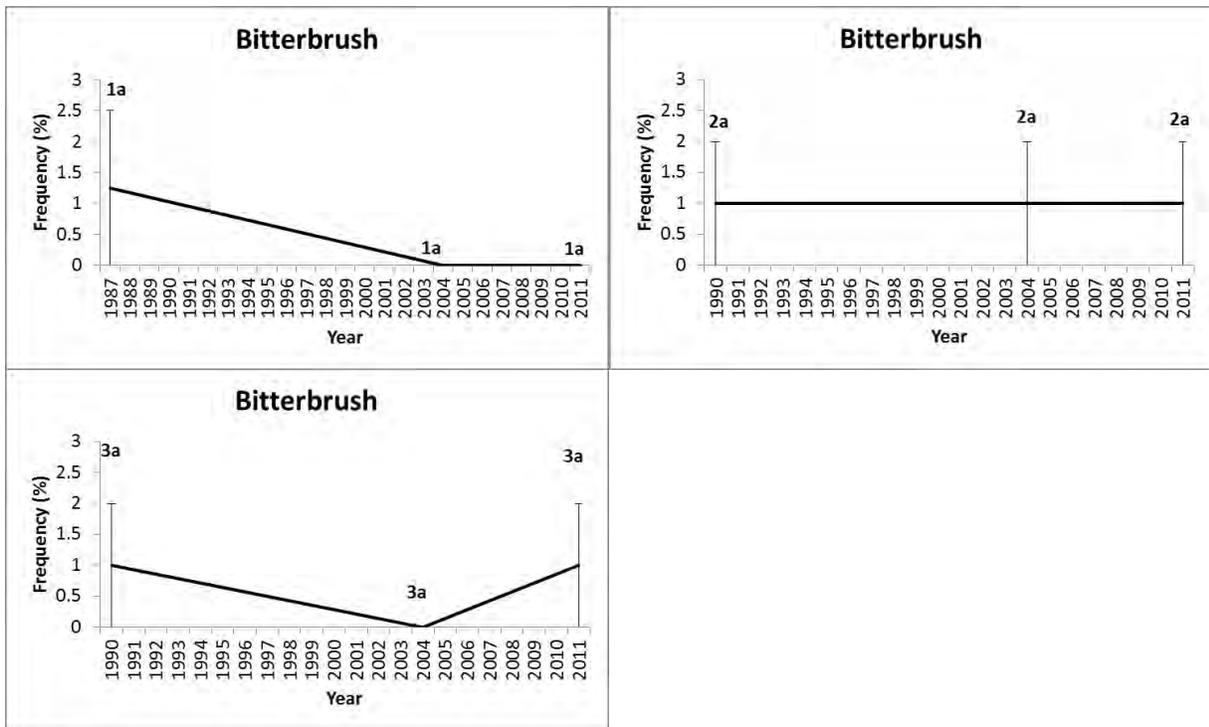


Figure 6. Bitterbrush frequency in the Hammett 6 Allotment, Elmore County, Idaho, in the Dive Creek Pasture [02S08E27A (1), 02S08E27B (2), and 02S08E27C (3)]. Bitterbrush was not detected in the Thorn Creek Pasture (02S08E35). Different letters above error bars would indicate significant differences ($P < 0.1$); however, there were no significant differences for this species.

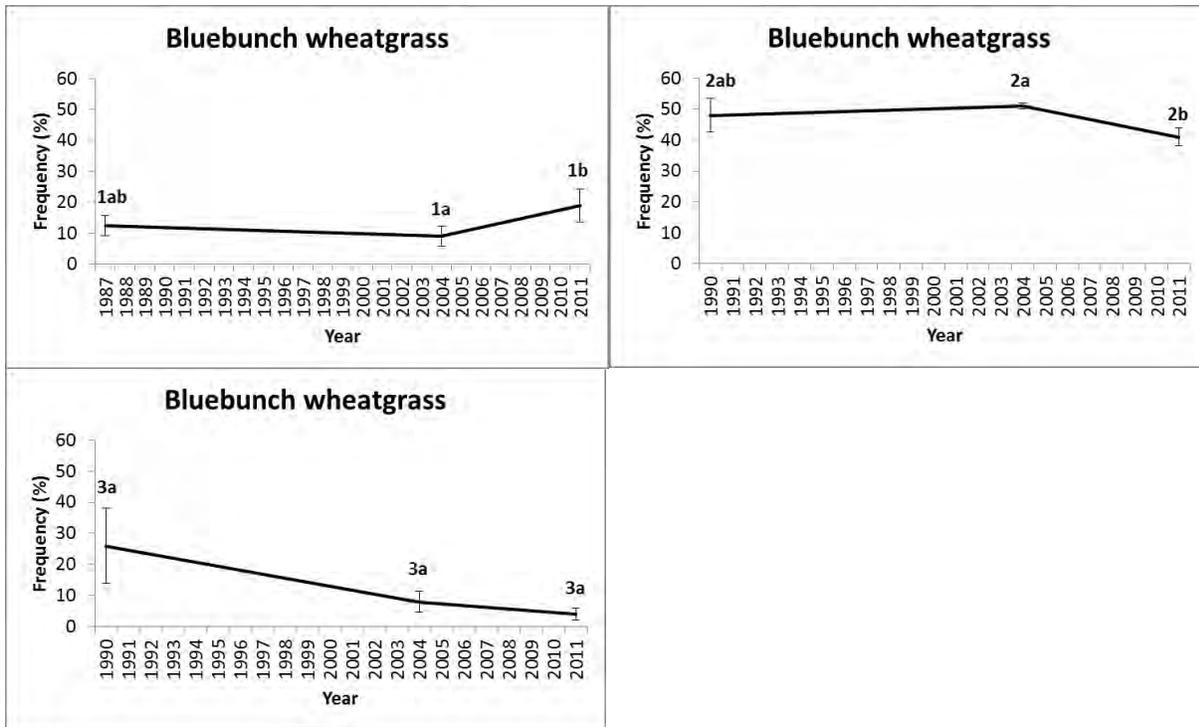


Figure 7. Bluebunch wheatgrass frequency in the Hammett 6 Allotment, Elmore County, Idaho, in the Dive Creek Pasture [02S08E27A (1), 02S08E27B (2), and 02S08E27C (3)]. Bluebunch wheatgrass was not detected in the Thorn Creek Pasture (02S08E35). Different letters above error bars indicate significant differences ($P < 0.1$).

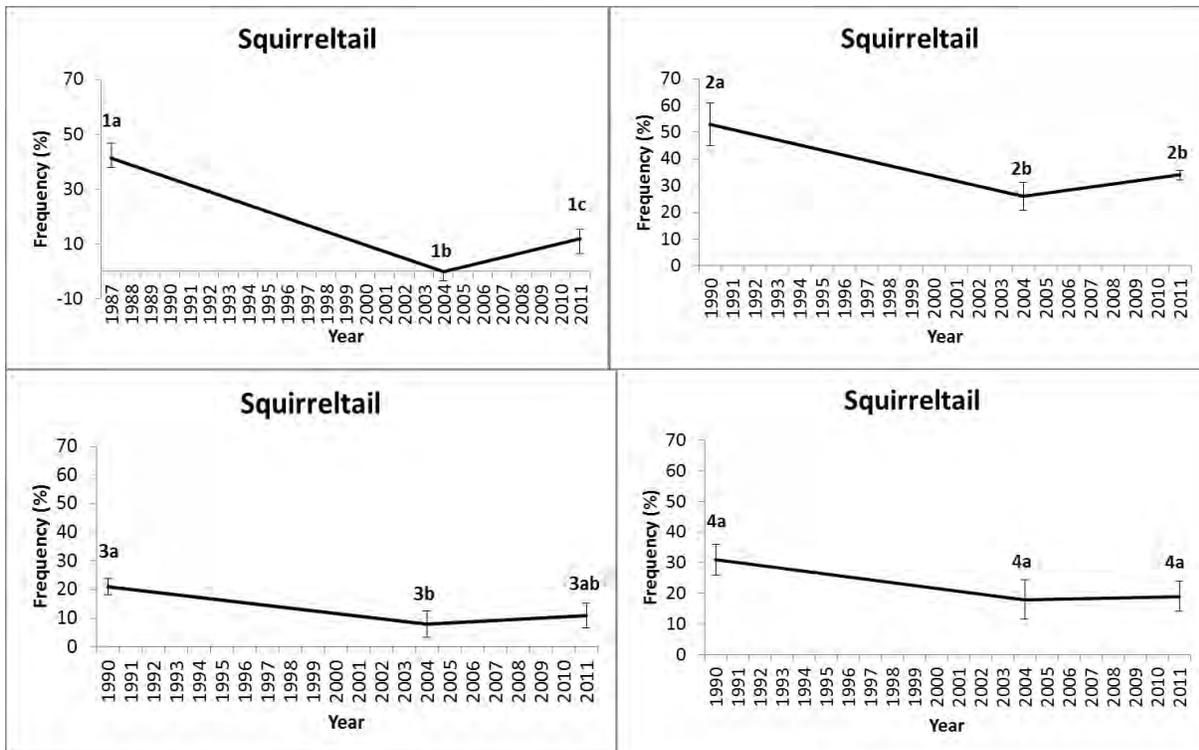


Figure 8. Squirreltail frequency in the Hammett 6 Allotment, Elmore County, Idaho, in the Dive Creek Pasture [02S08E27A (1), 02S08E27B (2), and 02S08E27C (3)] and the Thorn Creek Pasture [02S08E35 (4)]. Different letters above error bars indicate significant differences ($P < 0.1$).

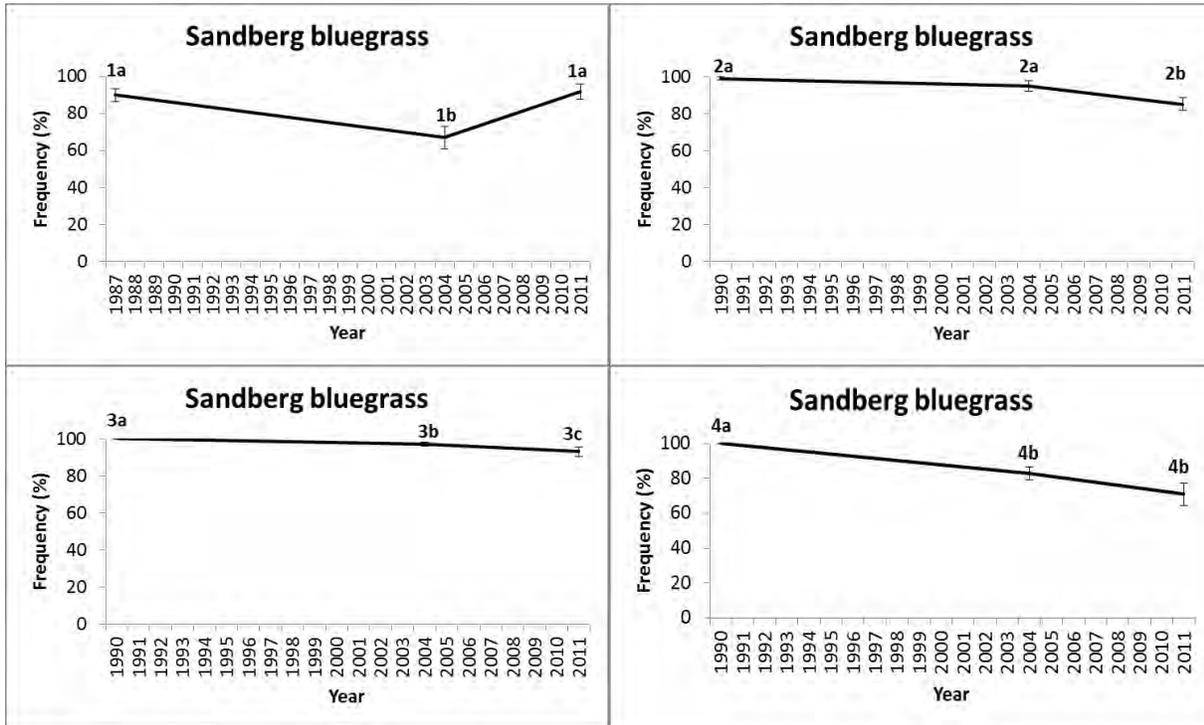


Figure 9. Sandberg bluegrass frequency in the Hammett 6 Allotment, Elmore County, Idaho, in the Dive Creek Pasture [02S08E27A (1), 02S08E27B (2), and 02S08E27C (3)] and the Thorn Creek Pasture [02S08E35 (4)]. Different letters above error bars indicate significant differences ($P < 0.1$).

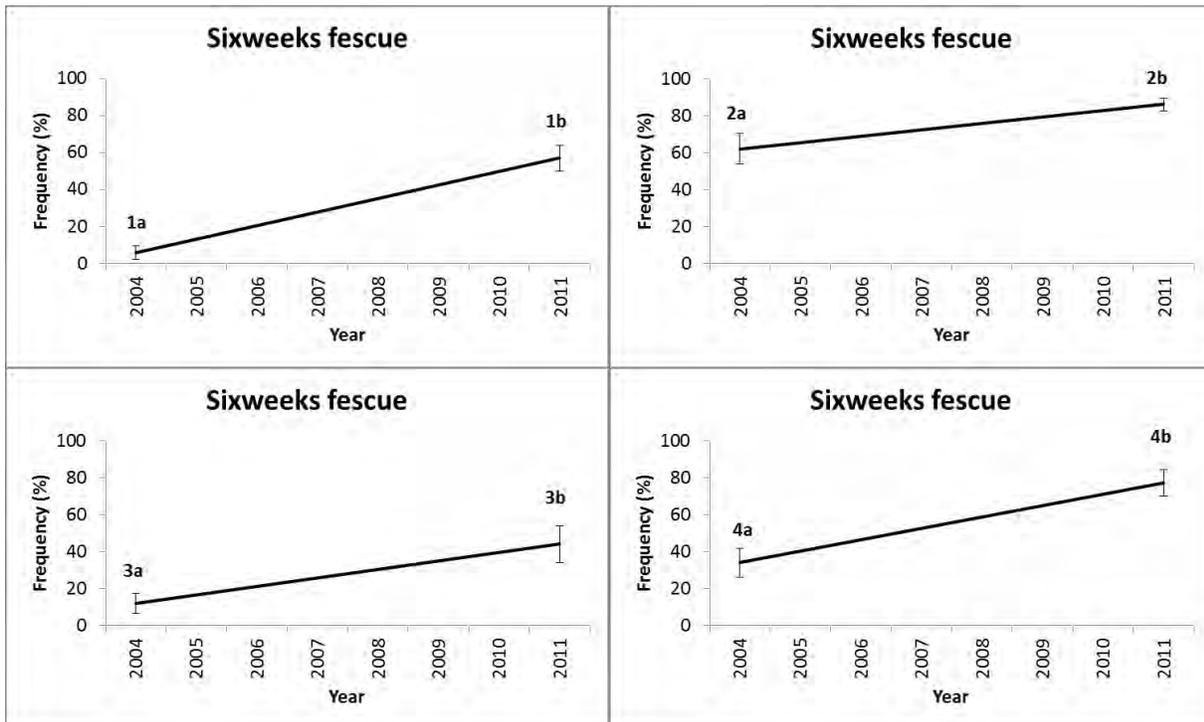


Figure 10. Sixweeks fescue frequency in the Hammett 6 Allotment, Elmore County, Idaho, in the Dive Creek Pasture [02S08E27A (1), 02S08E27B (2), and 02S08E27C (3)] and the Thorn Creek Pasture [02S08E35 (4)]. Different letters above error bars indicate significant differences (P<0.1).

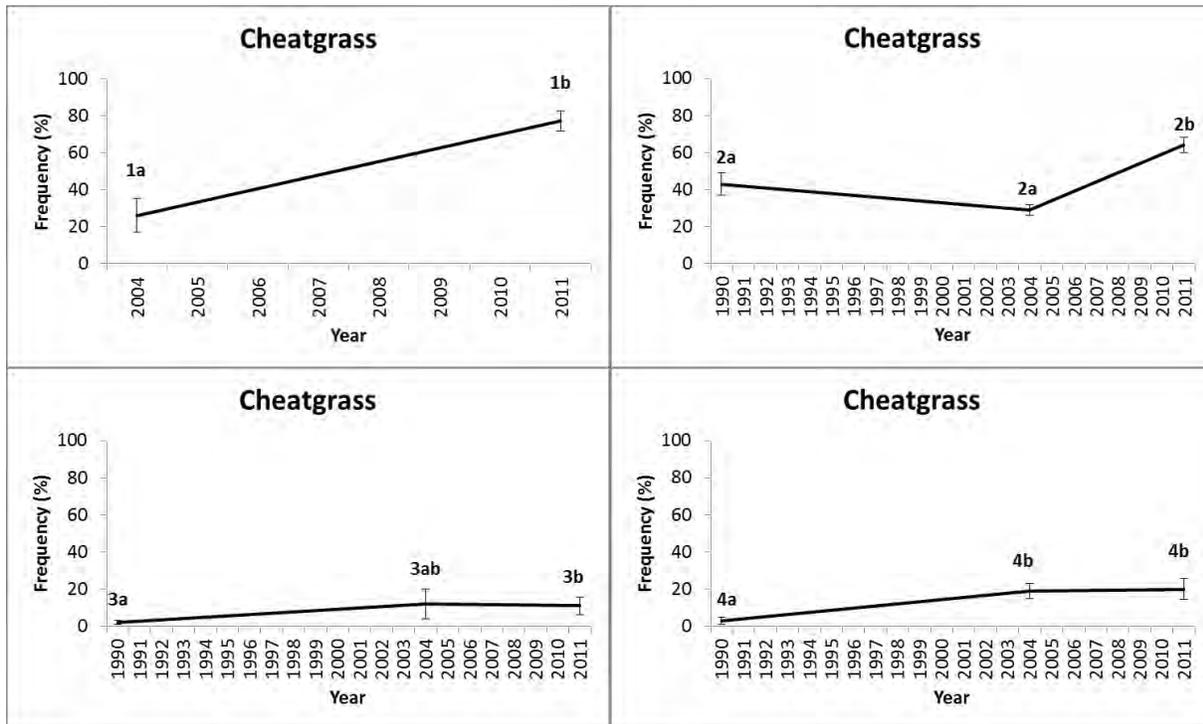


Figure 11. Cheatgrass frequency in the Hammett 6 Allotment, Elmore County, Idaho, in the Dive Creek Pasture [02S08E27A (1), 02S08E27B (2), and 02S08E27C (3)] and the Thorn Creek Pasture [02S08E35 (4)]. Different letters above error bars indicate significant differences (P<0.1).

Standard 5: Seedings

Field data do not show evidence of seeded species; therefore, this standard does not apply.

Standard 6: Exotic Plant Communities

Although exotic plant species occur within this allotment, they do not occur to the extent that this standard would apply.

Standard 7: Water Quality

The BLM has no recent water quality data for Bennett or Dive creeks. The proper functioning condition of riparian areas and very low frequency of livestock use near each stream suggests that any applicable water quality standards for bacterial levels would be met. Canopy cover is sufficient to protect temperatures in each waterbody from excessive heating from solar radiation.

Bennett and Dive creeks were formerly listed on the Idaho Department of Environmental Quality (IDEQ) 1998 303(d) list of impaired waters. However, following examination of water quality during the King Hill - C.J. Strike Reservoir Subbasin Assessment and Total Maximum Daily Loads (2006), IDEQ found no impairment to water quality, and this stream was removed from the list (IDEQ, 2008 Integrated Report). Willow Creek met applicable standards for seasonal biota.

Standard 8: Threatened and Endangered Species

Plants

Approximately 270 acres of public land was surveyed in August 2004. No federally listed or BLM Special Status Species are known to occur. Rush skeletonweed, a noxious weed, was observed during this survey in four areas totaling approximately 10 acres in size. The majority of the surveyed area, with the exception of the rocky ridgelines, burned in 2000 and is currently dominated by species such as whillowherb, groundsmoke, lupine, and grasses.

Wildlife

No federally listed animal species are known to occur. Greater sage-grouse (Candidate species, BLM Type 2), a sagebrush obligate species, is the primary special status species present. Other sensitive species (BLM Type 3) and sagebrush obligates/associates likely to occur include loggerhead shrike, Brewer's sparrow, and sage sparrow. Habitat conditions for sagebrush associated species are assumed to be correlated with conditions for sage-grouse. The gray wolf was removed from the Endangered Species list in 2009; although, it remains a BLM Type 1 Special Status Species and individuals likely pass through the northern portions of the pasture.

Wildlife habitat condition was evaluated using riparian information (Standard 2) and native upland plant community information (Standard 4). These assessments provided information regarding abundance, diversity, vigor, cover of plants, structure and trend of plant communities, grazing utilization, and weed presence.

Greater Sage-grouse

The allotment supports 1,800 acres of Preliminary Priority Habitat (PPH) and 2,839 acres of Preliminary General Habitat (PGH) for greater sage-grouse (Map 2). PPH are areas that have been identified as having the highest conservation value (breeding/lekking, nesting, brood-rearing, and winter habitat) for maintaining sage-grouse populations. Aerial surveys for sage-grouse leks were conducted in the spring of 2002 and 2004 including known, historic lek sites. No leks were detected during these surveys. The nearest active lek is located approximately 2.1 miles from the allotment. Recent telemetry data (2008-present) documents sage-grouse occupying Pasture 2 during the breeding season, and the lower western portions of the allotment during the winter season.

Suitability of sage-grouse breeding habitat (nesting and early and late-brood rearing) is based on canopy cover and height of sagebrush, grasses, and forbs, and the availability of specific forbs that are preferred food for pre-nesting grouse hens and broods. Breeding habitat suitability is inferred from upland rangeland health assessments (Standard 4).

Nesting and Brood-rearing Habitat - Portions of the allotment burned in 2000, 2010, and 2012 (4,570 acres total for BLM-administered lands, 6,250 acres for all ownerships) which has fragmented and reduced the canopy cover of big sagebrush, low sagebrush, and bitterbrush in nearly all of pastures 2 and 4 and portions of pastures 1 and 3. Fragmented and reduced shrub canopy cover throughout the allotment provides marginal to unsuitable nesting habitat for sage-grouse.

Tall-and mid-stature (deep-rooted) perennial bunchgrasses (e.g. bluebunch wheatgrass, bottlebrush squirrel tail, Idaho fescue, and needle grasses) are essential components of sage-grouse habitat as they provide cover from predators at nest sites and in brood-rearing habitats. In Pasture 4 where three large fires have occurred, tall-and mid-stature perennial bunchgrass cover is sparse and the understory is dominated by exotic annual grasses and Sandberg bluegrass, which provide unsuitable nesting and foraging cover for sage-grouse.

Forb species provide food for pre-laying hens and chicks, and associated insects are especially important food sources for new-born sage-grouse. Deep-rooted perennial forbs (e.g. arrowleaf balsamroot and lupine spp.) also provide additional cover in brood-rearing habitat. Due to overall low diversity and abundance of perennial and preferred sage-grouse forbs throughout Pasture 4, sage-grouse early brood-rearing habitat was rated as marginal.

Big Game

The area provides winter and summer habitat for mule deer and elk winter/early spring habitat (Map 2). Bitterbrush seedlings were planted after the 2010, and 2012 fires, but would not be expected to provide forage for several years.

Fish

Redband trout occurred in Bennett Creek; although their populations were likely very limited due to seasonally erratic stream flows. The BLM had no data in regard to population densities in these segments, but the excellent condition of riparian areas and stable rock-armored stream channels suggested that this stream could potentially support viable populations of redband trout.

Dive Creek supported a small population of redband trout. Redband trout may have spawned in this stream in early spring, but occurred only in isolated pools during the summer months due to seasonal stream flows. BLM had no recent data regarding population densities or trends of redband trout in this stream.

Appendices and Maps

Appendix 1. Indicators of Rangeland Health

Allotment - Pasture		1038	1038	1038	1038
Identifier		2	2	2	2
Location		B-112	B-197	B-198	B-202
Ecological Site		02S08E22	02S08E27	02S08E27	02S08E27
Indicator	Attribute				
1. Rills	S-H	N-S	N-S	N-S	N-S
2. Water Flow Patterns	S-H	M	S-M	S-M	S-M
3. Pedestals/Terracettes	S-H	M	M	N-S	S-M
4. Bare Ground	S-H	N-S	N-S	N-S	S-M
5. Gullies	S-H	S-M	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	S-M	S-M	S-M	S-M
8. Soil Surface to Erosion	S-H-B	S-M	S-M	M	S-M
9. Soil Surface Loss or Degradation	S-H-B	S-M	M	N-S	S-M
10. Plant Community Composition and Distribution Relative to Infiltration and Runoff	H	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	M	S-M	M	S-M
13. Plant Mortality / Decadence	B	N-S	S-M	N-S	S-M
14. Litter Amount	H-B	S-M	S-M	M-E	N-S
15. Annual Production	B	M	S-M	E	S-M
16. Invasive Plants	B	N-S	S-M	M-E	S-M
17. Reproductive Capability of Perennial Plants	B	N-S	S-M	S-M	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

Allotment - Pasture		1038	1038	1038	1038	1038
Identifier		3	3	4	4	4
Location		B-200	B-201	B-191	B-196	B-199
Ecological Site		02S08E25	02S08E25	03S08E12	02S08E35	03S08E12
Indicator	Attribute					
1. Rills	S-H	N-S	N-S	N-S	N-S	N-S
2. Water Flow Patterns	S-H	N-S	S-M	S-M	S-M	S-M
3. Pedestals/Terracettes	S-H	S-M	S-M	S-M	S-M	S-M
4. Bare Ground	S-H	N-S	S-M	N-S	S-M	N-S
5. Gullies	S-H	N-S	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	N-S
7. Litter Movement	S-H	S-M	S-M	N-S	N-S	N-S
8. Soil Surface to Erosion	S-H-B	N-S	S-M	S-M	N-S	N-S
9. Soil Surface Loss or Degradation	S-H-B	S-M	S-M	N-S	S-M	N-S
10. Plant Community Composition and Distribution Relative to Infiltration and Runoff	H	S-M	S-M	S-M	S-M	S-M
11. Compaction Layer	S-H-B	N-S	N-S	N-S	N-S	N-S
12. Functional / Structural Groups	B	S-M	S-M	S-M	S-M	S-M
13. Plant Mortality / Decadence	B	N-S	N-S	N-S	S-M	N-S
14. Litter Amount	H-B	S-M	S-M	S-M	S-M	N-S
15. Annual Production	B	S-M	S-M	S-M	S-M	S-M
16. Invasive Plants	B	N-S	S-M	S-M	S-M	S-M
17. Reproductive Capability of Perennial Plants	B	S-M	S-M	M	S-M	N-S

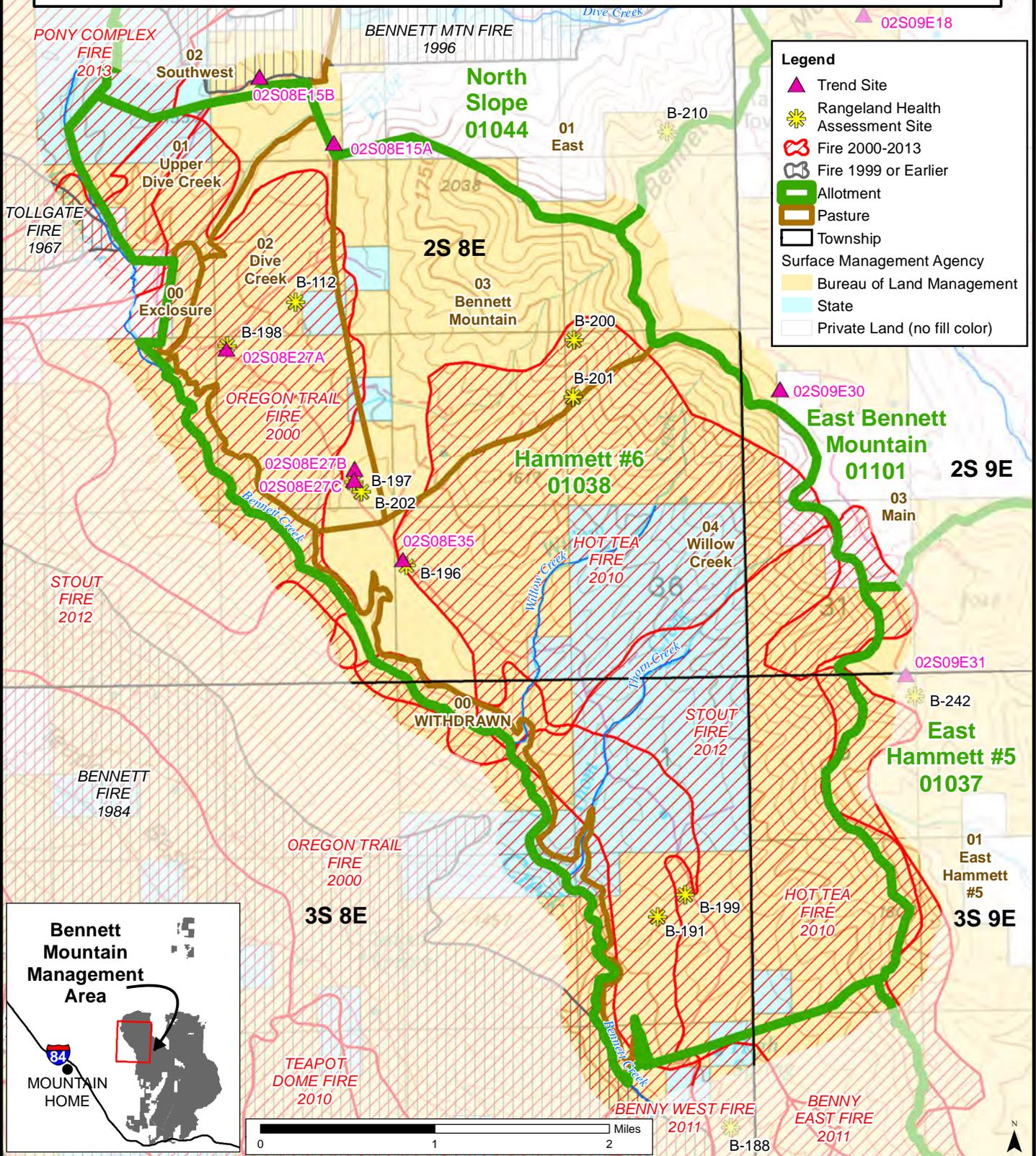
S= Soil/Site Stability; H= Hydrologic Function; B= Biotic Integrity

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

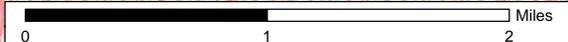
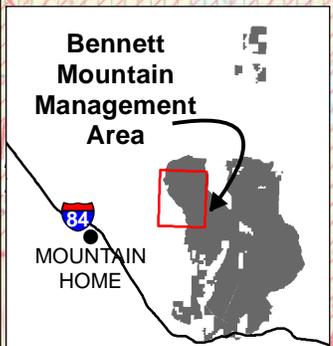
Hammett #6 Allotment (01038)

Assessment Map 1: Fire History, Rangeland Health Assessment, and Monitoring



Legend

- ▲ Trend Site
- ★ Rangeland Health Assessment Site
- 🔴 Fire 2000-2013
- 🔴 Fire 1999 or Earlier
- 🟢 Allotment
- 🟡 Pasture
- 🟩 Township
- Surface Management Agency
- 🟡 Bureau of Land Management
- 🟦 State
- 🟨 Private Land (no fill color)



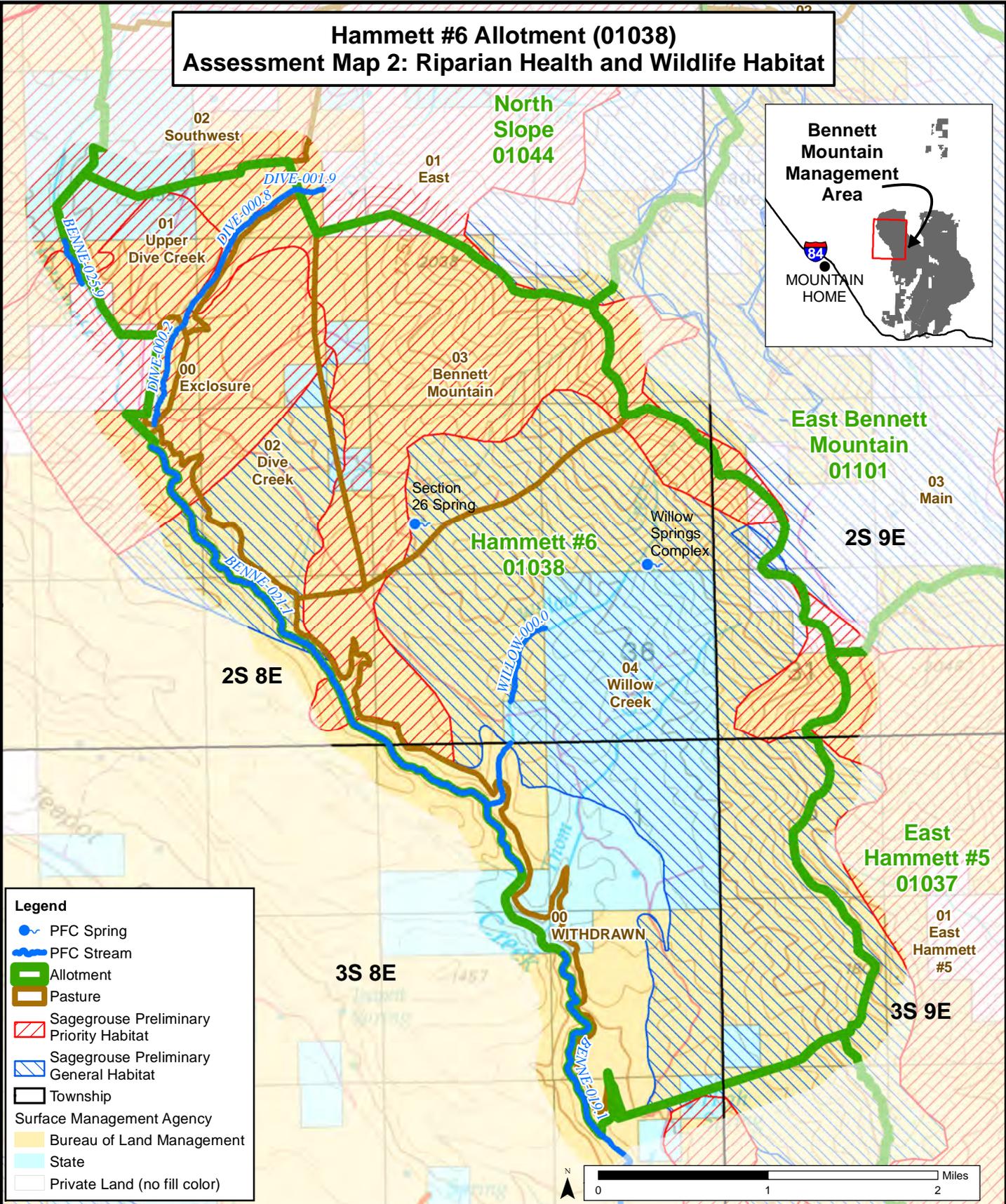
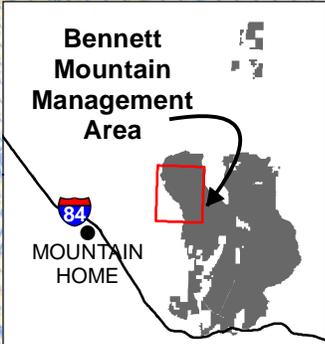
U.S. Department of the Interior
 Bureau of Land Management, Idaho
 Boise District, Four Rivers Field Office
 Map date: May 26, 2014



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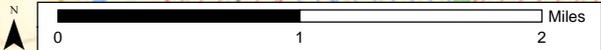
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Hammett #6 Allotment (01038) Assessment Map 2: Riparian Health and Wildlife Habitat



Legend

- PFC Spring
- PFC Stream
- Allotment
- Pasture
- Sagegrouse Preliminary Priority Habitat
- Sagegrouse Preliminary General Habitat
- Township
- Surface Management Agency Bureau of Land Management
- State
- Private Land (no fill color)



U.S. Department of the Interior
Bureau of Land Management, Idaho
Boise District, Four Rivers Field Office
Map date: May 26, 2014



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EVALUATION REPORT

Achieving the Idaho Standards for Rangeland Health

Field Office: IDB010 Four Rivers

Grazing Allotment Name and Number: Hammett #6 Allotment (01038)

Name of Permittee(s): David E. "Skip" Owens, Jr. #1101849

Introduction

The Hammett #6 Allotment (01038) is located approximately 18 miles NW of Glens Ferry, Idaho. The allotment consists of federal, state, and private lands totaling 8,427 acres, of which 6,509 are federal, 1,739 are State, and 179 are private. This includes 381 acres (332 acres BLM, 42 acres State, and 7 acres private) in enclosures that are not available to livestock use.

Applicable Standards:

The Idaho Standards for Rangeland Health and Guidelines for Livestock Grazing Management (Standards and Guidelines) 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 used to determine the health and condition of public lands. This document provides the evaluation of information presented in the rangeland health assessment and whether Standards are being achieved. The determination of significant factors or causal agents for areas not meeting a particular Standard (or set of Standards) and whether or not livestock management practices are in conformance with applicable guidelines is presented in the Determination Document.

The following Standards apply to public lands in this allotment: 1 (Watersheds), 2 (Riparian Areas and Wetlands), 3 (Stream Channel/Floodplain), 4 (Native Plant Communities), 7 (Water Quality), and 8 (Threatened and Endangered Species). Standard 5 (Seeding) does not apply because no plant communities are dominated by seeded species, and Standard 6 (Exotic Plant Communities) does not apply because, although exotic annual plants occur in this allotment, sagebrush communities are dominant on substantial portions of the allotment.

EVALUATE STANDARDS

Since the Assessments, Evaluations, and draft Determinations were completed (February 2010), plant community trend data have been updated. Plant frequency and ground cover data were collected at permanent study locations in 2011, photo points were resurveyed in 2011, and two large fires occurred. Updates have subsequently been made to the Standards these data inform.

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 1987/1990 to 2010 were used to assess the state and trend of watershed conditions.

Rangeland Health and Long-Term Trends

These data sets indicate that, in general, there was an overall decline in the plant community's ability to protect the watershed, as key native species declined and cheatgrass increased and a static to downward trend and ecological condition. Degradation of the native plant community and increase in cheatgrass has exposed the watershed to greater wildfire risk and in fact, fires have occurred in Thorn Creek Pasture at a higher than expected frequency. This increases watershed degradation.

Four long-term monitoring transects were located in Dive Creek Pasture (three transects) and Thorn Creek Pasture (one transect). One trend plot burned in and recovered well from the 2000 Oregon Trail Fire. The 2010 Hot Tea and 2012 Stout fires did not burn any of the trend plots. However, in the one that was located closest to the overlapping fires, sagebrush was declining, large bunchgrasses were absent, Sandberg bluegrass was declining and cheatgrass was increasing. The pasture's resistance to erosion has decreased as a result of fewer perennial grasses to hold soils in place.

In 2004, active erosion in the form of accentuated water flow paths and pedestalled perennial bunchgrasses was observed in Dive Creek Pasture; most of these ratings were based on areas affected by the 2000 Oregon Trail Fire. Rating errors occurred in Willow Creek and Thorn Creek pastures. In these pastures, several signs of erosion and lower than expected occurrences of key grass species were noted, yet ratings did not reflect these deficiencies. Degradation of bunchgrasses and an increase in cheatgrass in Thorn Creek Pasture likely contributed to the spread of two other large fires that caused watershed damage (the 2010 Hot Tea Fire, which burned most of this pasture and part of Willow Creek Pasture, and the 2012 Stout Fire, which re-burned the southern half of Thorn Creek Pasture). One location (580 acres) burned three times in twelve years; a 5-13 times shorter fire return interval than expected for this ecological site.

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

A decline of key species and signs of erosion indicate that the watershed is not providing proper infiltration, retention, and release of water. Increasing exotic annual grasses, associated with the degraded native plant community, amplifies the damage to the watershed by increasing fire.

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

Streams

A total of 7.7 miles of Bennett, Dive, and Willow creeks were in proper functioning condition (PFC) and 0.2 miles of Dive Creek were not rated. Segments in PFC were characterized by dense willow communities, limited sedges and rushes (primarily because of very coarse stream substrates), and limited areas with Kentucky bluegrass. Vegetation was generally healthy and vigorous.

Springs

Willow and Section 20 springs were rated in PFC. Willow Spring supported a dense and vigorous riparian shrub community composed of willows, hawthorn, currant, and other shrubs populating an area of about 4 acres. Section 20 Spring supported a Nebraska sedge, Baltic rush, and arroyo willow plant community.

Rangeland Health Change

No previous data could be found pertaining to these resources.

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 two segments of Bennett and Dive creeks and the two springs were in PFC. All riparian areas were maintaining riparian vegetation appropriate to soil type, climate, geology, and landform to provide for proper nutrient, hydrologic cycling, and energy flow.

Standard 3: Stream Channel/Floodplain

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

A total of 7.7 miles of Bennett, Dive, and Willow creeks were in proper functioning condition (PFC) and 0.2 miles of Dive Creek (DIVE-000.0) were not rated. Bennett Creek was in a very rocky canyon, and with very few and localized exceptions, are inaccessible to livestock. Stream

channels were nearly 100% stable as very coarse rock controls the stream morphology. Dive Creek (DIVE-000.2) was located in a livestock enclosure. DIVE-000.8 is located in a narrow, but accessible valley that is rock controlled, and streambanks are laterally and vertically stable with no excessive erosion occurring. Willow Creek was laterally and vertically stable, partially rock controlled, with sufficient riparian vegetation present to stabilize streambanks.

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

Stream channels and floodplains were well protected via riparian vegetation with binding roots or rock; therefore, the streams were stable and providing for proper nutrient and hydrologic cycling, and energy flow.

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 1987/1990 to 2010 were used to assess the state and trend of watershed conditions.

Rangeland Health and Long-Term Trends

These data sets indicate that native plant communities were degraded, leading to an increase in cheatgrass and fire frequency and a static to downward trend and ecological condition. The native plant community has degraded at all four permanent trend plots. Frequencies of tall-, mid-, and low-stature perennial grasses were static to decreasing over the long term. Associated with these declines were increases in cheatgrass frequencies. It is likely that the degradation has been amplified outside the trend plots, in Pasture 4, where three large wildfires occurred in a dozen years.

Nine rangeland health field assessments were conducted in pastures 2, 3 and 4 in 2004, but the last two fires occurred afterwards. The plant communities in pastures 3 and 4 were rated within the normal range of variability and were associated with the first fire. Several rating errors occurred in pastures 3 and 4: there were several signs of erosion, exotic annual grasses were present in all three RHAs in Pasture 4, there were lower than expected occurrences of key grass species in both pastures, and key bunchgrasses were not seeding; yet most of these factors were rated as normal. This degradation likely contributed to the higher than expected fire frequency in Pasture 4.

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

Native plant communities have declined significantly since 1987/1990. Exotic annual grasses associated with the degraded native plant community contributed to a reduced fire return interval that is now too short in some areas for native plant reproduction and recruitment.

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 assessments, long-term monitoring data and/or photographs, 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 assessments, long-term monitoring data and/or photographs, 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

Rangeland Health

The BLM has no recent water quality data for Bennett or Dive creeks. The PFC of riparian areas and very low frequency of livestock use near each stream suggests that any applicable water quality standards for bacterial levels would be met. Canopy cover is sufficient to protect temperatures in each waterbody from excessive heating from solar radiation.

Bennett Creek was formerly listed on the IDEQ 1998 303(d) list of impaired waters. However, following examination of water quality during the *King Hill - C.J. Strike Reservoir Subbasin Assessment and Total Maximum Daily Loads* (2006), IDEQ found no impairment to water quality; it was removed from the list (IDEQ, 2008 Integrated Report). Willow Creek met applicable standards for seasonal biota.

Rangeland Health Changes

No previous water quality data could be found for these creeks.

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 PFC condition of riparian areas, and very low frequency of livestock use near each stream, suggests that any applicable water quality standards for bacterial levels would be met.

Bennett Creek was formerly listed on the IDEQ 1998 303(d) list of impaired waters. However, following examination of water quality during the *King Hill - C.J. Strike Reservoir Subbasin Assessment and Total Maximum Daily Loads* (2006), IDEQ found no impairment to water quality in Bennett Creek, and it was removed from the list (IDEQ, 2008 Integrated Report). Willow Creek met applicable standards for seasonal biota.

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 assessments, site photographs, field visits, Conservation Data Center (CDC) database, and plant and wildlife surveys.

Rangeland Health

Plants

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

Wildlife

No federally listed wildlife species are known to occur here. Greater sage-grouse, a candidate species, is known to use portions of the allotment. Portions of the allotment burned in 2000, 2010, and 2012; as a result, sagebrush canopy cover dropped below 10% over large portions of allotment, rendering the area unsuitable for sage-grouse breeding habitat. Static or declining frequencies of tall- and mid-stature perennial grasses provided marginal or unsuitable horizontal nesting cover. Low forb diversity and abundance provided marginal brood-rearing habitat.

Fish

Redband trout occur in Bennett Creek, although their populations are likely limited due to annually erratic stream flows. The BLM has no recent data in regard to frequency or population; however, the excellent condition of riparian areas and the stable rock-armored stream channels suggest Bennett Creek is at full potential to support viable populations of redband trout.

Dive Creek supports a small population of redband trout. Redband migrating upstream from Bennett Creek actively spawn in this stream, but occur only in isolated pools during the summer
Hammett #6 Allotment (01038) 6 Evaluation Document
May 2014

months. The BLM has no recent data regarding population densities or trends of redband trout in Dive Creek.

Rangeland Health Changes

Wildfire and increases in exotic invasive plants, particularly in Pasture 2, have degraded suitable habitat for Special Status plants and animals.

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 decline in rangeland health, especially the loss of native plant diversity and the corresponding increase in invasive annuals in the uplands, has decreased the suitability of these areas to support populations of special status plants and wildlife.