Rangeland Health Assessment

East Hammett #5 Allotment (01037)

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General Allotment Information

The East Hammett #5 Allotment (01037) is located approximately 14 miles NW of Glenns Ferry, Idaho. The lands within the allotment comprise major portions of the headwaters of Cold Springs and Ryegrass creeks which drain the south slopes of Bennett Mountain. The allotment consists of 10,471 acres of federal, 638 of state, and 694 acres of private lands totaling 11,803 acres.

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 2006). Major landforms include plateaus, side slopes, toe slopes, and river plains. The dominant soil type is the Badge-Immiant-Rubbleland complex which makes up about 50% of the allotment, 30% is Elkcreek-Gaib-Simonton association, and 10% is Simonton-Elkcreek complex. The remaining area (10%) is composed of several soil types.

The Loamy 12-16” ecological site represents about 95% of the allotment, with small areas of Loamy 8-12”, Shallow stony loam 8-16”, and South slope fractured ecological sites [ecological sites are named by their general soil type and precipitation (inches); actual precipitation at nearby Anderson Dam and Glenns Ferry varied (Figure 1)]. Vegetation associated with the Loamy 12-16” ecological site consists of mountain big sagebrush with Idaho fescue and bluebunch wheatgrass. The Shallow stony loam sites are characterized by low sagebrush and bluebunch wheatgrass; and the Loamy 8-12” and Fractured south slope sites are characterized by Wyoming big sagebrush with bluebunch wheatgrass (USDA-SCS, 1991).

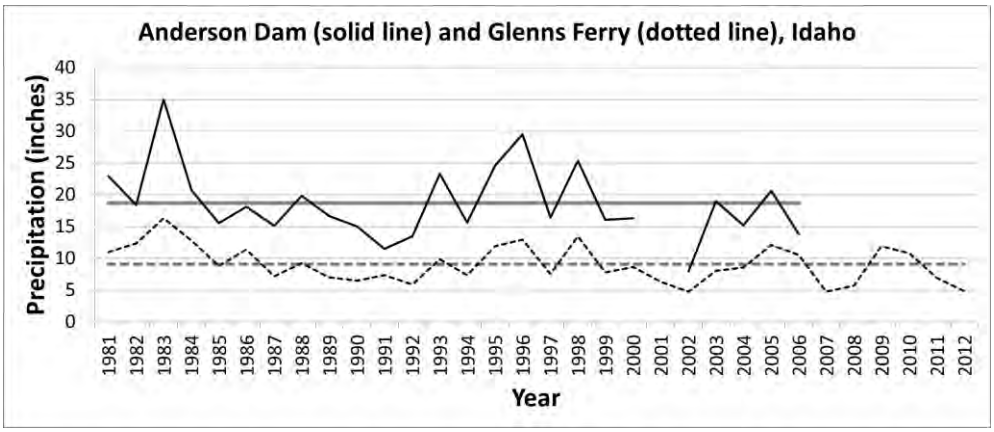


Figure 1. Annual and mean precipitation at Anderson Dam and Glenns Ferry, Idaho (Source: National Climate Data Center).

The BLM records identify four wildfires since 1957. The 1985 Walker Fire burned approximately 280 acres between the East and West Forks of Cold Springs Creek, the 2007 Cold Fire burned approximately 100 acres in the southeast corner of the allotment, the 2010 Hot Tea Fire burned 390 acres along the west-central edge of the allotment, and the 2012 Stout Fire burned 310 acres in four blocks along the western edge, including one that burned two years earlier and one that burned five years earlier.

Livestock Grazing Management

The current authorized use periods are April 10 through June 30 and October 1 through November 30 annually for a total of 1,493 permitted Animal Unit Months (AUMs) (Table 1).

Table 1. Authorized use summary, East Hammett #5 Allotment, Elmore County, Idaho.

Authorization Number	Livestock		Season of Use		Percent Public Land	Authorized AUMs		
	Kind	Number	Begin	End		Active	Suspended	Permitted
1101847	Cattle	320	04/10	06/30	100	863	0	863
	Cattle	314	10/01	11/30	100	630	0	630
Total						**1,493**	**0**	**1,493**

Based on actual use reports submitted by the authorized livestock operator or annual authorizations, annual use ranged from 725 to 1,315 animal unit months (AUMs) between 1997 and 2013 (Table 2). Actual use is derived from actual use reports submitted by the livestock operator or from annual grazing applications. In 2006 and 2007, the livestock operator was temporarily authorized to exceed springtime AUMS in exchange for reduced numbers and non-use for the fall grazing period, respectively.

In 2006, utilization transects were conducted to assess the amount of perennial bunchgrass biomass remaining at the end of the spring/early summer grazing period. Utilization levels are 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%). One transect utilized the Landscape Appearance method (USDI-BLM, 1996) due to too few perennial grasses to measure. At this transect utilization was calculated at 69%. The remaining transects measured the key forage grass species present. The

average use from all transects was calculated at 81% on Idaho fescue, 68% on bottlebrush squirreltail, 35% on bluebunch wheatgrass, and 47% on Thurber needlegrass.

Table 2. Actual livestock use, East Hammett #5 Allotment, Elmore County, Idaho.

Grazing Year	Use Period		AUMs per	
	On Date	Off Date	Period	Year
1997	04/10	06/30	863	1,064[1]
	10/01	11/30	201	
1998	04/10	06/30	863	1,064
	10/01	11/30	201	
1999	04/10	06/30	863	914
	10/01	11/30	50	
2000	04/10	06/30	863	1,064[1]
	10/01	11/30	201	
2001	04/10	06/30	863	1,064[1]
	10/01	11/30	201	
2002	04/10	06/30	863	1,064[1]
	10/01	11/30	201	
2003	04/10	06/30	863	1,064[1]
	10/01	11/30	201	
2004	04/10	06/30	863	1,064[1]
	10/01	11/30	201	
2005	04/10	06/30	863	1,064[1]
	10/01	11/30	201	
2006	04/27	06/25	938	1,139
	10/01	11/30	201	
2007	04/10	06/21	1,315	1,315
	10/01	11/30	No Use	
2008	04/10	06/15	685	875
	10/01	11/30	201	
2009	04/10	06/15	828	1,025
	11/01	11/30	197	
2010	04/10	06/30	726	927
	10/01	11/30	201[1]	
2011	04/10	06/15	707	725
	10/01	10/27	18	
2012	04/10	06/30	863	1,064
	10/01	11/30	201	
2013	04/10	06/30	863	1,064
	10/01	11/30	201	

[1] AUM's based on annual billing, no actual use on file.

Idaho Standards for Rangeland Health

In 2004, the BLM conducted 13 field assessments using *Interagency Technical Reference 1734-6, Interpreting Indicators of Rangeland Health ver. 3* (Map 1). The Elmore County Soil Survey (USDA-NRCS, 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 of this document discuss resource conditions as they relate to each of the applicable 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 1987/1988 to 2011 were used to assess the state and trend of watershed conditions. Together these data sets indicate that at all elevations the native plant community had declined and there were problems with erosion and soil degradation.

Rangeland Health Field Assessments

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 "none to slight" range of departure from expected conditions for the ecological site at four sites, etc.

Table 3. Watershed - Rangeland Health Indicators, East Hammett #5 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					13
2-Water Flow Patterns			1	8	4
3-Pedestals/Terracettes			2	5	6
4-Bare Ground		1		7	5
5-Gullies			1		12
6-Wind Scoured blowouts/depositions					13
7-Litter Movement		1		4	8
8-Soil Surface Resistance to Erosion			2	7	4
9-Soil Surface Loss or Degradation				8	5
10-Plant Community Composition and Distribution Relative to Infiltration and Runoff		1	4	6	2
11-Compaction Layer				1	12
14-Litter Amount				6	7
Total indicator units = 156 (12 indicators x 13 locations)	**0**	**3**	**10**	**52**	**91**

Of the 156 indicator units related to watershed health, 13 rated outside the normal range of variability of expected conditions. At least one "moderate" or "moderate to extreme" rating

occurred at 12 out of 13 assessment locations (Map 1). The indicator for plant community composition and distribution relative to infiltration and runoff (#10) rated outside the normal range of variability at five of the thirteen locations. Field form comments for this indicator described few mid- or large-stature perennial grasses present in the plant communities at those locations.

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 (02S09E31, highest elevation; 02S09E33, medium elevation; and 02S09E21A, lowest elevation; Map 1) in 1987/1988, 1991, 1993 and 2011 using the point cover method. At the highest elevation, the canopy closed (based on photographs) and the understory thinned (based on photographs and frequency transects; see Standard 4: Native Plant Communities), basal cover of persistent vegetation decreased, and bare ground between these stems was static (Figure 2 and Figure 3). At the medium elevation, basal cover of persistent vegetation was static and bare ground increased (Figure 2 and Figure 3), while large perennial grass frequency decreased, small perennial grass was extirpated, decreasing the ability of these sites to retain water and resist erosion (see Standard 4: Native Plant Communities). At the lowest elevation, basal cover of persistent vegetation was static and bare ground decreased (Figure 2 and Figure 3). Decreased frequencies of Sandberg bluegrass and prevalence of annual grasses indicated reduce watershed protection (see Standard 4: Native Plant Communities).

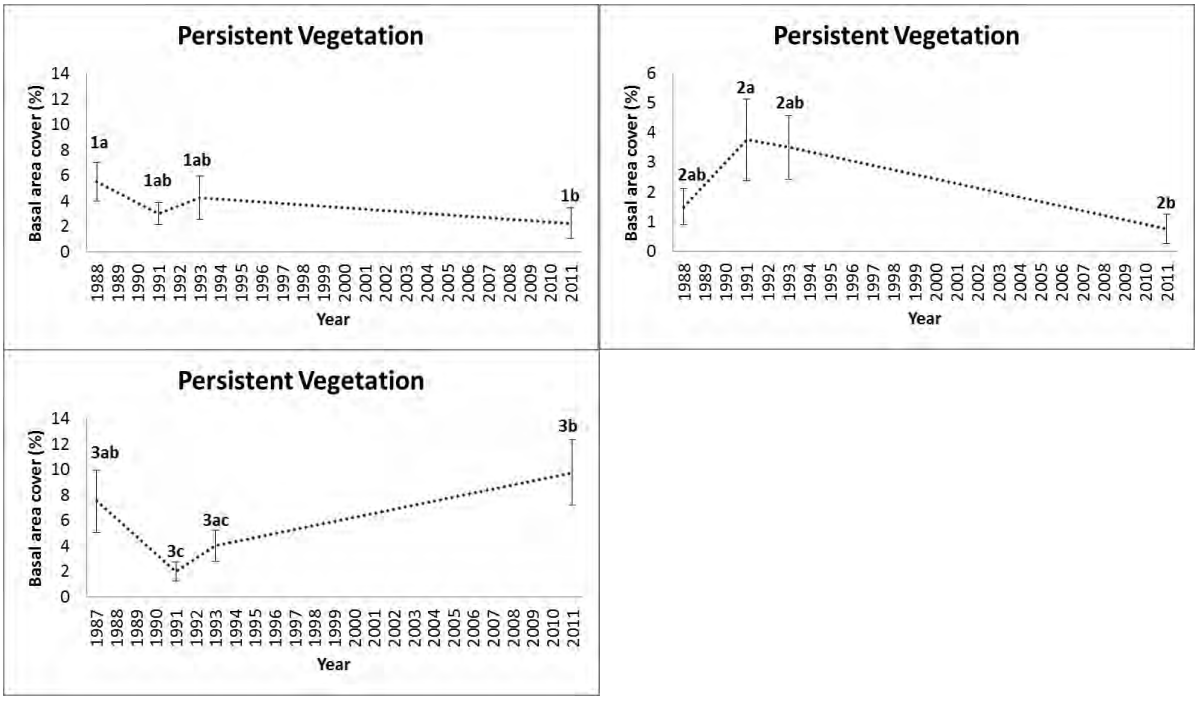


Figure 2. Basal cover of persistent vegetation in the East Hammett #5 Allotment, Elmore County, Idaho, in 02S09E31 (1; highest elevation), 02S09E33 (2; medium elevation), and 02S09E21A (3; lowest elevation). Different letters above error bars indicate significant differences (P<0.1).

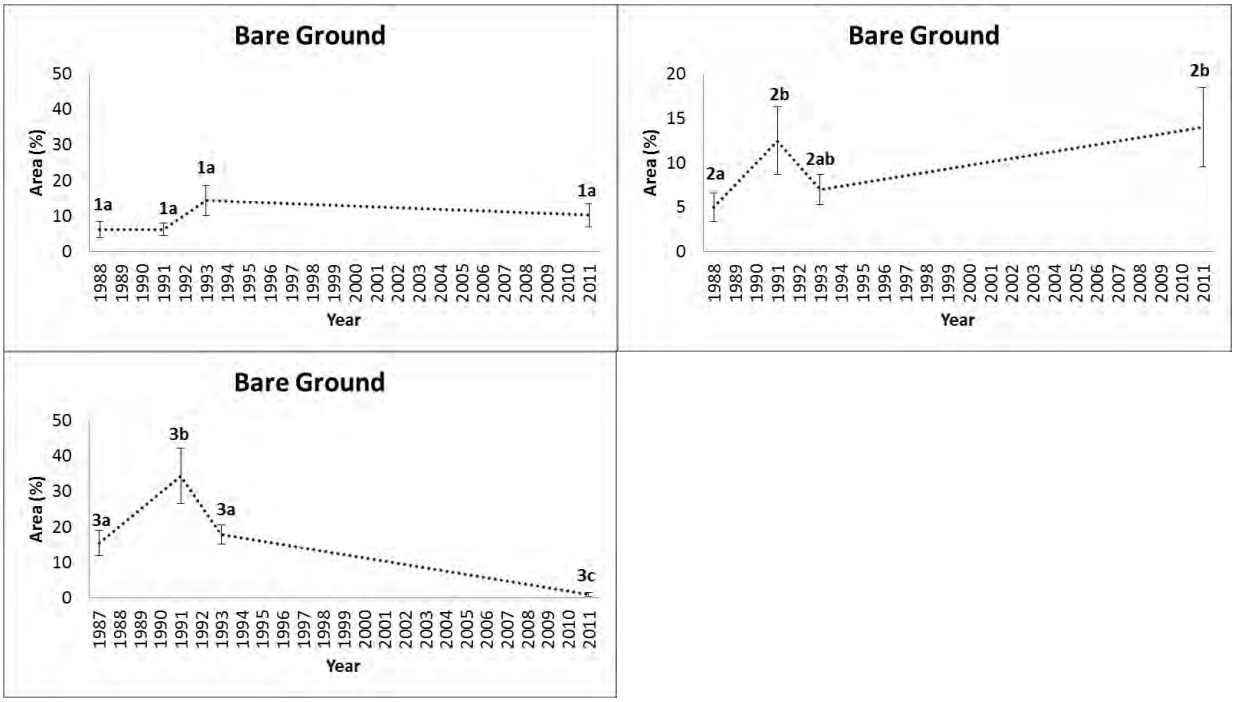


Figure 3. Bare ground in the East Hammett #5 Allotment, Elmore County, Idaho, in 02S09E31 (1; highest elevation), 02S09E33 (2; medium elevation), and 02S09E21A (3; lowest elevation). Different letters above error bars indicate significant differences (P<0.1).

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 2010 through 2013. 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 9.2 miles of stream were in PFC and 1.3 miles were in FAR (Table 4, Map 2). There was no variance in stream functioning condition ratings between Standards 2 and 3 on any discretely stratified stream segment.

Table 4. Stream name, segment ID, segment length, and functioning condition rating summaries for streams in the East Hammet #5 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]
Cold Springs	COLD-016.2	P	0.5		0.5		Y
E. F. Cold Springs	ECOLD-000.0	I	1.4		1.4		S
W. F. Cold Springs	WCOLD-000.0	P	2.2		2.2		Y
	WCOLD-002.9	P	0.7		0.7		Y
	WCOLD-003.6	P		0.8	0.8	Y	Y
	WCOLD-004.4	P	1.4		1.4		Y
	WCOLD-005.8	P		0.5	0.5		Y
Ryegrass	RYEG-010.8	I	3.0		3.0		N
Total			**9.2**	**1.3**	**10.5**		
Percent of Total			**88%**	**12%**	**100%**		

[1] P = perennial flow regime I = intermittent flow regime
[2] PFC - proper functioning condition, FAR - functional-at-risk
[3] Y = yes, N = no, S = seasonal occupation only

COLD-016.2

This 0.5 mile segment was in PFC. Riparian vegetation was composed of deep-rooted cottonwood, redosier dogwood, and Geyer's and coyote willows. Sedges and rushes do not occur in high densities due to the coarse stream substrates. The stream channel, streambanks, and floodplain were laterally and vertically stable.

ECOLD-000.0

This 1.4 mile segment was in PFC. The plant community was composed of cottonwood, Geyer's willow, arroyo willow, golden currant, coyote willow, Wood's rose, and chokecherry of diverse age classes. The stream was mostly stable both laterally and vertically. However, some short reaches lower in the segment continue to adjust to natural channel disturbance caused by an area-wide watershed event which occurred in 1997.

WCOLD-000.0 (2.2 miles), WCOLD-002.9 (0.7 miles), and WCOLD-004.4 (1.4 miles)

These segments, totaling 4.3 miles, were in PFC. Riparian vegetation consisted of healthy alder, redosier dogwood, chokecherry, river birch, and willow, and cottonwood plant community types. Herbaceous plants with deep-binding root masses (sedges, rushes) were found where finer substrates occur, but other reaches have limited sedge/rush occurrence due to coarse substrates and bedrock, but were occupied by good densities of woody species. Sinuosity, width/depth ratios, and entrenchment were considered within the normal range of variability (less than 20% active erosion). The segments were laterally and vertically stable. Streambanks in lower

gradient reaches were mostly well vegetated and stabilized by deep-rooted riparian species. Steeper gradient reaches were well vegetated with woody species, and were rock-armored.

WCOLD-003.6 (0.8 miles) and WCOLD-005.8 (0.5 miles)
These stream segments, totaling 1.3 miles, were in FAR condition. The riparian vegetation was a mountain alder/quaking aspen/redosier dogwood plant community. The woody overstory was relatively healthy and dense; however, understory species were depleted and often missing from areas accessible to livestock. The greenline was often occupied by early seral species including Kentucky bluegrass and disturbance related forbs such as common mullein, false hellebore, and weedy annual forbs

These segments were entrenched in some reaches, and often had high width/depth ratios, low sinuosity, poor pool/riffle ratios, and high sediment levels. The segments were laterally unstable as the stream channels continue to adjust to high sediment levels. Bank trampling and hoof shearing were common along accessible portions of this stream with finer substrates, and there was insufficient deep-rooted hydric vegetation to protect stream banks from mechanical damage (hoof shearing and pugging). The majority of fine sediments occurring in WCOLD-005.8 originated from upstream sources on private lands.

RYEG-010.8
This 3.0 mile segment was in PFC. The reach was vegetated by healthy and diverse assemblages of cottonwoods, willows, Wood's rose, golden currant, snowberry, and chokecherry. Healthy sedge/rush communities were present along a few seeps entering on the east side of the stream. However, a substantial portion of the channel consists of bedrock, and is incapable of supporting sedge/rush communities. This stream is mostly rock-armored, valley controlled, and very stable.

Spring Conditions
Two springs were rated in PFC and seven springs were rated in FAR condition with static trends (Table 5, Map 2).

Table 5. Spring functioning condition ratings and stockwater developments, East Hammett #5 Allotment, Elmore County, Idaho.

Spring name	Location	Functioning Condition Rating[1]			Flow Regime[2]	Developed (Y/N)
		PFC	FAR	NF		
Craster	T02S R09E Sec 34 SENW		X		P	N
Section 5	T03S R09E Sec 05 SWSE		X		I	N
Section 14	T03S R09 E Sec 14 SESW		X		I	N
Section 15	T03S R09E Sec 15 SWSE		X		I	N
Section 20	T03S R09E Sec 20 SESE	X			P	Y
Section 22	T03S R09E Sec 22 NENE		X		P	Y
Upper Ryegrass	T03S R09E Sec 21 SESW	X			P	Y
Section 23	T03S R09E Sec 23 NESE		X		I	N
Section 26	T03S R09E Sec 26 NENW		X		I	N

[1] PFC (proper functioning condition), FAR (functional-at-risk), NF- non-functioning
[2] P = Perennial, I = Intermittent

Craster Spring was in FAR condition with a downward trend. Vegetation was characterized by Kentucky bluegrass, with occasional sagebrush and invasive annual grasses. The considerable historic loss of fine soil severely limits the ability for riparian vegetation to reestablish.

Section 5 Spring is located in the headwaters of Ryegrass Creek. The plant community includes arroyo willow, Baltic rush, Kentucky bluegrass, and upland grasses. This spring was in FAR due to physical impacts of livestock concentration during the brief periods when the spring has flowing water. The spring does not support obligate wetland vegetation. The area is mostly rock armored and soils here are shallow.

Five unnamed springs (Section 14 and Section 23 are located east of East Fork Cold Springs Creek; Section 15 and Section 22 are located east and west of West Fork Cold Springs Creek; and Section 26 is located east of Cold Springs Creek; Map 2). These small intermittent springs were all rated FAR. Riparian vegetation consisted mostly of Baltic rush and Kentucky bluegrass, with a few arroyo willows. Considerable pugging and hummocking was present throughout each spring.

Upper Ryegrass Spring is a small complex of seeps and flowing springs with an associated wetland totaling about 0.5 acres. This spring was rated in PFC. Vegetation consisted of Baltic rush, Nebraska sedge, spike rush, and Kentucky bluegrass. Historical encroachment of upland vegetation was prevalent along the meadow edge. Some trampling and pugging was apparent, but the dense and deeply-rooted sedges and rushes present here effectively resist hoof damage.

Section 20 Spring is located one-half mile due west of Upper Ryegrass Spring. This intermittent spring is protected by an exclosure, and was in PFC. Vegetation consisted of spike rush, Baltic rush, Woods's rose, and arroyo willows.

Standard 4: Native Plant Communities

Rangeland Health Field Assessments evaluated the biotic integrity in 2004. Long-term monitoring was used to evaluate the trend of the native plant community from 1987/1988 to 2011. These data sets revealed that rangeland health indicators were outside the range of historic variability and the native plant community was declining. At high and medium elevations, large and small bunchgrasses were disappearing. At lower elevations, shrubs and small bunchgrasses were declining, large and medium bunchgrasses were missing, and exotic annual grasses had the greatest frequencies.

Rangeland Health Assessments

All 13 rangeland health field assessments were conducted in native plant communities with no recorded fires (Map 1). Nine of the 17 rangeland health indicators (8, 9 and 11-17) relate to biotic integrity (Table 6). 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 6. Native plant community rangeland health indicators, East Hammett #5 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			2	7	4

Indicators of Biotic Integrity	Range of Departure				
	Extreme	Moderate to Extreme	Moderate	Slight to Moderate	None to Slight
9-Soil Surface Loss or Degradation				8	5
11-Compaction Layer				1	12
12-Functional/Structural Groups		1	7	4	1
13-Plant Mortality/Decadence			3	7	3
14-Litter Amount				6	7
15-Annual Production			1	6	6
16-Invasive Plants			8	4	1
17-Reproductive Capability of Perennial Plants				7	6
Total indicator units = 117 (9 indicators x 13 locations)	**0**	**1**	**21**	**50**	**45**

Twenty-two of the 117 indicator units for biotic integrity rated in the moderate or higher range of departure from expected conditions for the ecological site (Table 6, Appendix 1). These 22 indicator unit ratings were distributed between 12 of the 13 assessment locations. At location B-193, all biotic indicators rated within the normal range of variability. Five assessments had one indicator in the moderate range of departure. At three of those locations, that indicator was for the abundance of invasive species (#16), and at two other locations, for the low diversity of functional and structural groups (#12) and plant mortality and decadence (#13). The remaining ratings beyond the normal range occurred across the remaining eight assessment locations.

Long-term vegetation monitoring

Three nested plot frequency transects (NPFT) were surveyed in 1987/1988, 1991, 1993, and 2011 (Map 1). They were photographed in 1987, 1988/1989, 1989/1990, 1991, 2004 (two locations), and 2011. All three transects were located in the Loamy 12-16 mountain big sagebrush/Idaho fescue/bluebunch wheatgrass ecological site. Transect 03S09E21A was located in the southwest part of the allotment at 4,200 feet elevation, 0.1 mile east of Ryegrass Creek, in the Badge-Immiant-Ruckles-Rubble Land Complex soil type with 20-70% slope (a soil type that makes up ~half of the allotment area). Transect 02S09E33 (0.1 miles east of the west fork of Cold Creek at 5,800 feet elevation) and transect 02S09E31 (0.9 miles west of the west fork of Cold Creek at 6,300 feet elevation) were located 1.4 miles apart in the northwest portion of the allotment, in the Gaib-Elkcreek-Simonton Association soil type with 20-60% slopes (this soil type makes up ~one quarter of the allotment area). None of the trend plots have had a recorded fire.

Results of long-term monitoring indicated an overall downward trend in plant frequencies. At lower elevations shrub frequencies were decreasing, there were few medium and large perennial grasses, small perennial grass frequencies were decreasing, and annual grass frequencies, including cheatgrass, were increasing. At the medium elevation, shrubs increased and large bunchgrasses decreased. At the highest elevation, there was a downward trend for large and medium bunchgrasses. Sagebrush frequency decreased significantly in 02S09E21A (lowest elevation), increased significantly in 02S09E33 (medium elevation), and was static in 02S09E31 (highest elevation) (Figure 4). Other shrub and tree frequencies were static, except for rabbitbrush, which decreased significantly at the highest elevation (Figure 5, Figure **6**, and Figure 7). Large perennial bunchgrasses were not encountered in the lowest elevation, decreased significantly at the medium elevation, and were extirpated from the highest elevation (Figure 8).

Medium perennial bunchgrasses were not encountered in the lowest elevation, were at a low static frequency at the medium elevation, and were static or decreased significantly at the highest elevation (Figure 9). Small perennial grass (Sandberg bluegrass) decreased significantly at the lowest elevation, and was extirpated from the medium and highest elevations (Figure 10). Annual grasses were more abundant at lower elevations (Figure 11). Native sixweeks fescue was only encountered at the lowest elevation where its frequency increased in the long term. Exotic cheatgrass decreased as elevation increased. It was found at low and medium elevations, where its frequency fluctuated in the short term but was static in the long term.

Repeat photographs at the lowest elevation indicated that the shrub canopy changed moderately while the understory changed dramatically and predictably. The understory was heavily trampled in 1987 and 1991, and then it was dominated by annual grasses in 2011. At the medium elevation, grasses were reduced as shrub canopy increased. At the highest elevation, the tree and shrub canopy increased and grasses thinned.

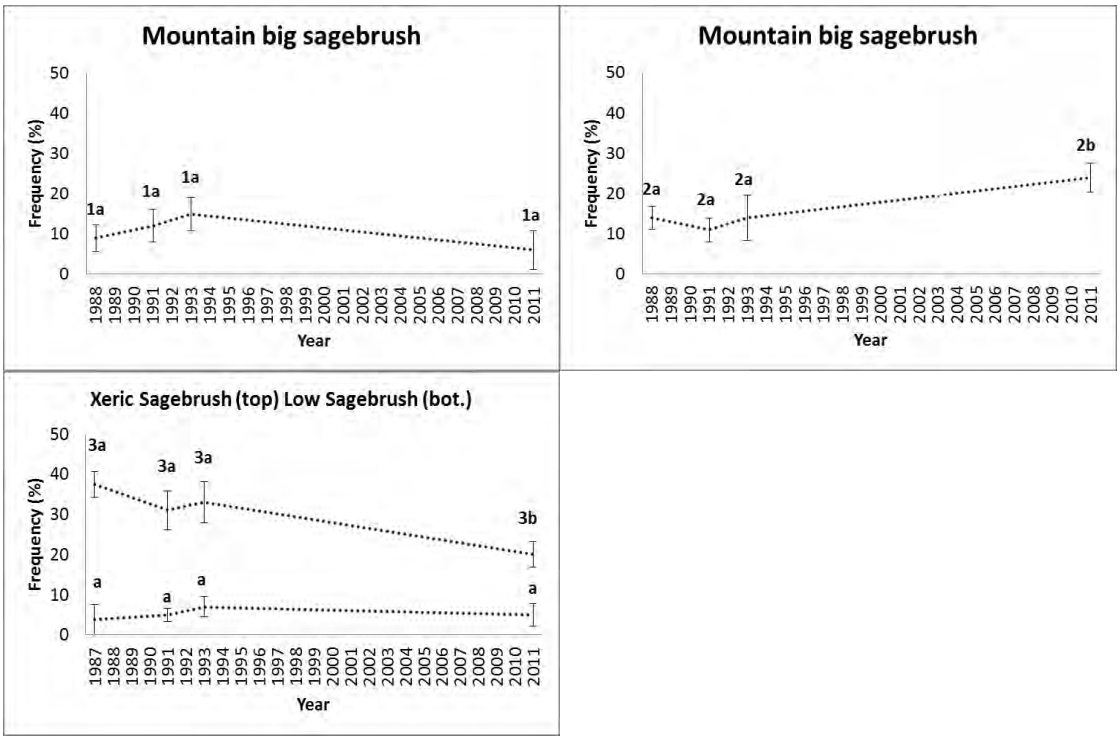


Figure 4. Sagebrush frequencies in the East Hammett #5 Allotment, Elmore County, Idaho, in 02S09E31 (1; highest elevation), 02S09E33 (2; medium elevation), and 02S09E21A (3; lowest elevation). Different letters above error bars indicate significant differences (P<0.1).

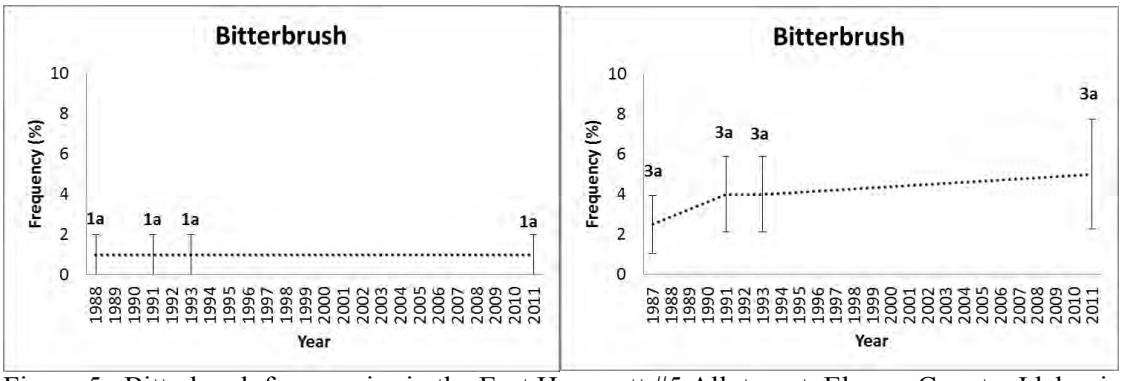


Figure 5. Bitterbrush frequencies in the East Hammett #5 Allotment, Elmore County, Idaho, in 02S09E31 (1; highest elevation) and 02S09E21A (3; lowest elevation). Bitterbrush was not encountered in 02S09E33. Different letters above error bars would indicate significant differences (P<0.1); however, there were no significant changes for this species.

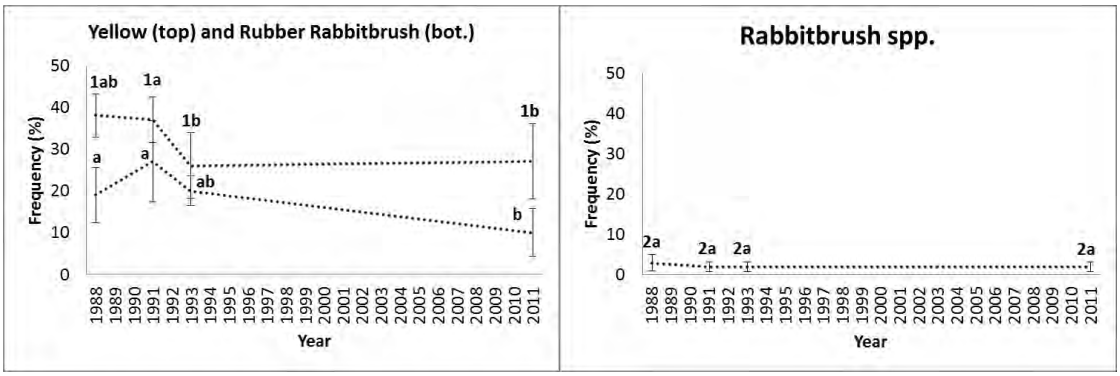


Figure 6. Rabbitbrush frequencies in the East Hammett #5 Allotment, Elmore County, Idaho, in 02S09E31 (1; highest elevation) and 02S09E33 (2; medium elevation). Rabbitbrush was not encountered in 02S09E21A. Different letters by error bars indicate significant differences (P<0.1).

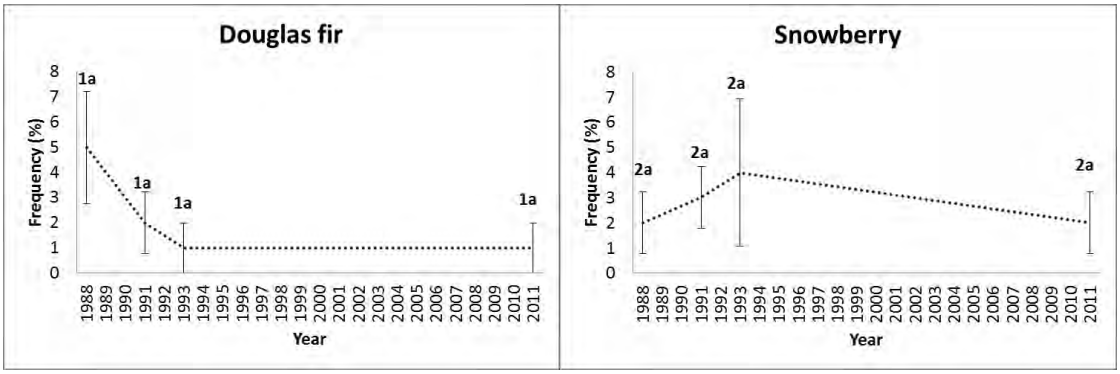


Figure 7. Other woody species frequencies in the East Hammett #5 Allotment, Elmore County, Idaho, in 02S09E31 (1; highest elevation) and 02S09E33 (2; medium elevation). No other woody species were encountered in 02S09E21A. Different letters above error bars would indicate significant differences (P<0.1); however, there were no significant changes for these species.

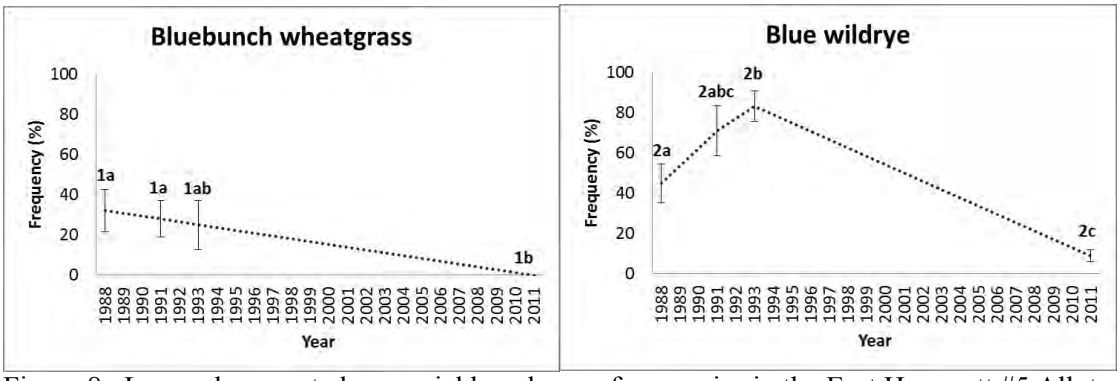


Figure 8. Large, deep-rooted perennial bunchgrass frequencies in the East Hammett #5 Allotment, Elmore County, Idaho, in 02S09E31 (1; highest elevation) and 02S09E33 (2; medium elevation). Large perennial bunchgrass was not encountered in 02S09E21A. Different letters by error bars indicate significant differences (P<0.1).

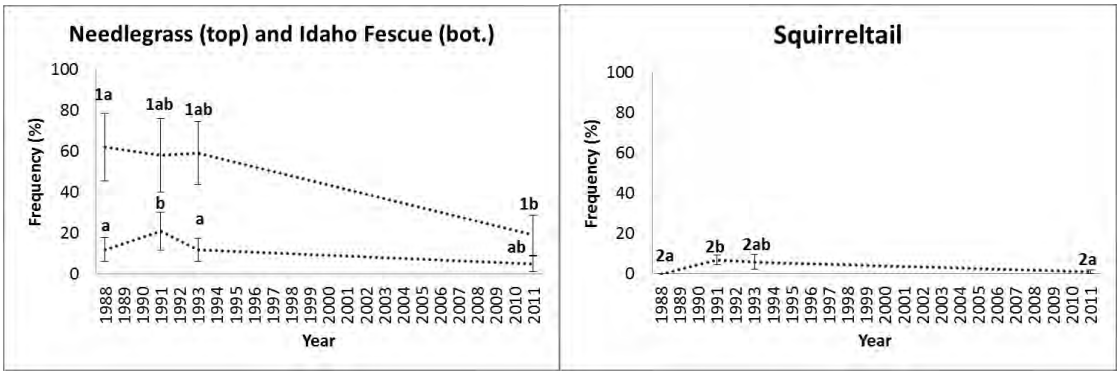


Figure 9. Medium perennial bunchgrass frequencies in the East Hammett #5 Allotment, Elmore County, Idaho, in 02S09E31 (1; highest elevation) and 02S09E33 (2, medium elevation). Medium perennial bunchgrasses were not encountered in 02S09E21A. Different letters by error bars indicate significant differences (P<0.1).

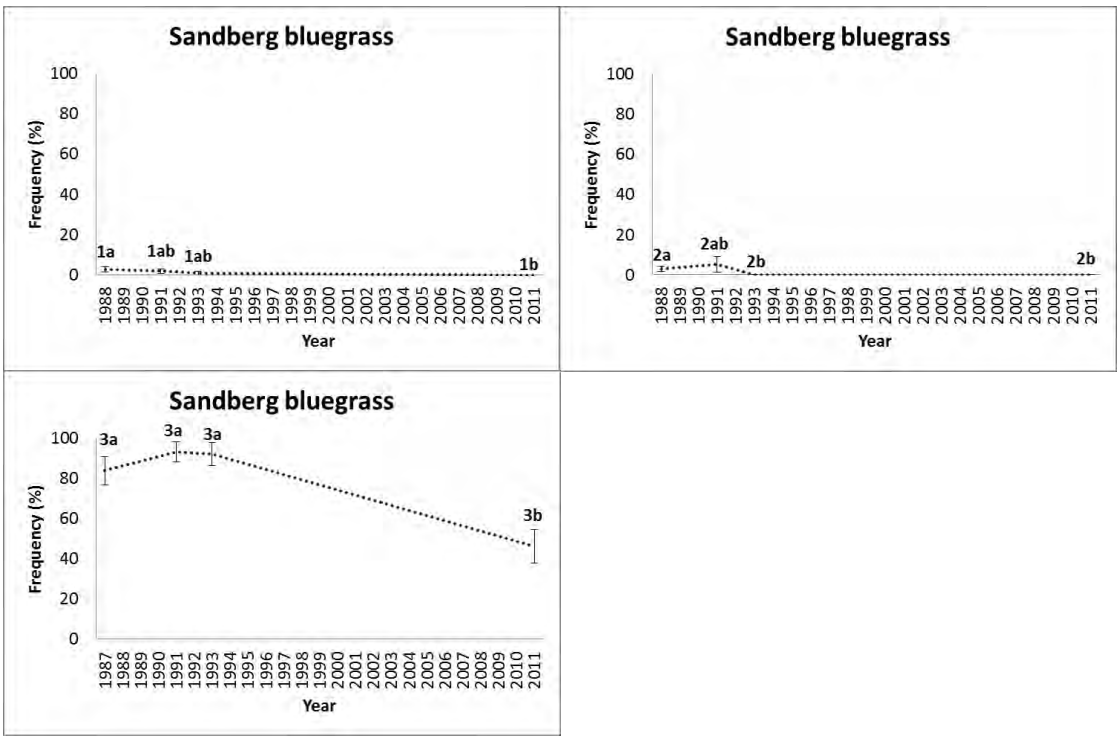


Figure 10. Sandberg bluegrass frequencies in the East Hammett #5 Allotment, Elmore County, Idaho, in 02S09E31 (1; highest elevation), 02S09E33 (2; medium elevation), and 02S09E21A (3; lowest elevation). Different letters above error bars indicate significant differences (P<0.1).

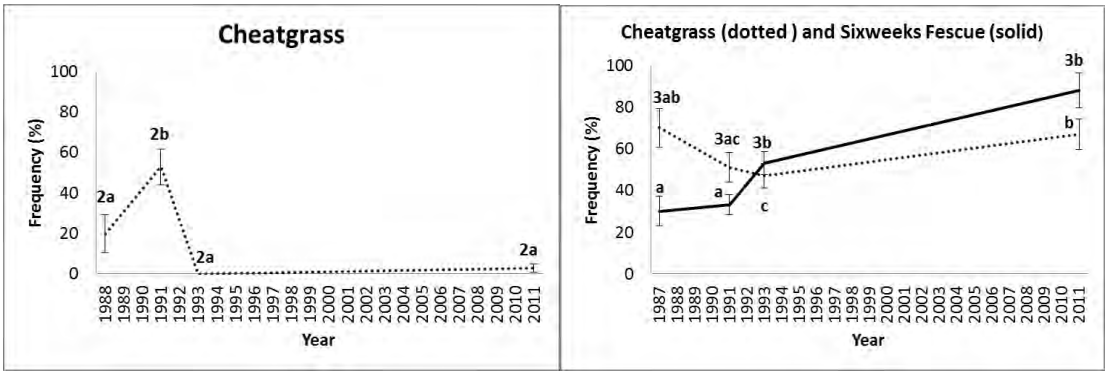


Figure 11. Annual grass frequencies (exotic cheatgrass and native sixweeks fescue) in the East Hammett #5 Allotment, Elmore County, Idaho, in 02S09E33 (2; medium elevation) and 02S09E21A (3; lowest elevation). Annual grass was not encountered in 02S09E31 (highest elevation). Different letters by error bars indicate significant differences (P<0.1).

Standard 5: Seeding

No seedings have occurred on public lands in this allotment; therefore, this standard does not apply.

Standard 6: Exotic Plant Communities

Although exotic annual plants occur in this allotment, they do not occur to the extent that this standard applies.

Standard 7: Water Quality

Cold Springs and Ryegrass creeks were placed on the Idaho Department of Environmental Quality (IDEQ) 303(d) list of water quality impaired streams in 1998. However, IDEQ found no impairment to water quality when examined for the C. J. Strike/King Hill Total Maximum Daily Load (TMDL evaluation, and the streams were subsequently removed from the list in 2008 (IDEQ 305(b) Integrated Report, 2008). BLM did not collect temperature data from these streams.

Standard 8: Threatened and Endangered Species

Plants

Twenty acres of public land were surveyed for federally listed and BLM Special Status Species in September 2004. None were found; although, suitable habitat exists for the special status plant mourning milkvetch (*Astragalus atratus* var *inseptus*).

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. However, it remains a BLM Special Status Species. In 2003 and 2008, gray wolves that had been predating on livestock were removed from the allotment.

Wildlife habitat condition was evaluated using riparian information (Standard 2) and native upland plant community information (Standard 4). These assessments provide information regarding abundance, diversity, vigor, cover of plants, structure and trend of plant communities, grazing utilization, and weed presence. Species-specific assessments and monitoring results are also presented.

Greater Sage-grouse

The allotment supports 6,922 acres of Preliminary Priority Habitat (PPH) for greater sage-grouse (Map 2). Most of the allotment has steep terrain which does not provide desirable sage-grouse breeding habitat (flat ridges or gentle slopes <40%). Aerial surveys for sage-grouse leks were conducted in 2002 and 2004 and no leks were found, the nearest active lek is located approximately 7.8 miles northwest of the allotment. Recent telemetry data (2008-present) does not document sage-grouse occupying the area during the breeding season.

Nesting and Brood-rearing Habitat - Low elevation portions of the allotment provide limited potential late brood rearing and wintering habitat. Overall, the frequency of sagebrush has decreased at the lower elevations and the frequency of exotic annual grasses has increased in the shrub interspaces and understory, which provided marginal to unsuitable nesting habitat. Frequencies of tall- and mid-stature bunchgrasses have been significantly reduced at lower elevations, and did not provide suitable nesting and foraging cover for sage-grouse.

Blue-eyed Mary and slenderleaf collomia, were common preferred sage-grouse forbs at higher elevations, while the frequency of perennial preferred forbs (e.g. hawksbeard, desert parsley,

mountain dandelion) were sparse to non-existent at low elevations. The sagebrush canopy cover on the upper portions of the allotment is so dense in areas that little understory is present, and is not known to be used by sage-grouse (personal communication w/Kelly Riggs, 2008).

Special Status Animals

Surveys for flammulated owl and northern goshawk were conducted from June to July 2004; one flammulated owl was detected, but no goshawks. In 2004, a mountain quail survey was conducted along the East Fork of Cold Springs Creek in a canyon. Two mountain quail responded to a taped assembly call deep in the canyon; however, no visual confirmation could be made. In 2005, the West Fork of Cold Springs Creek canyon was surveyed for mountain quail; none were detected. In 2006, 2007 and 2008, mountain quail were reintroduced into some of the Bennett Mountain drainages. Additional surveys were conducted by IDFG in 2010 along the East Fork of Cold Springs Creek; three males responded to audio playback and one was observed.

Fish

Electro-fishing surveys (1996) conducted by BLM confirmed that redband trout were present in the lower segments of Cold Springs (1.3 all age classes/m^2), East Fork Cold Springs, and West Fork Cold Springs (0.25 adults/m² in lowermost segment) creeks. Cold Springs Creek is providing adequate aquatic habitat to support viable populations of redband trout. High levels of fine sediment may limit salmonid spawning success in the upper portions of West Fork Cold Springs Creek. East Fork Cold Springs Creek has limited potential to support a salmonid fishery due to intermittent flow regimes; although, the stream is often used for spawning early in the spring and a few deeper pools support a small population of adult redband trout throughout the summer. No fisheries exist in Ryegrass Creek due to intermittent stream flows.

Appendices and Maps

Appendix 1. Indicators of Rangeland Health

Allotment - Pasture		1037	1037	1037	1037	1037	1037	1037
Identifier		B-109	B-192	B-193	B-194	B-239	B-240	B-242
Location		03S09E24	03S09E21	03S09E21	03S09E28	03S09E23	03S09E23	02S09E31
Ecological Site		Shallow Stony Loam	Shallow Stony	Loamy 12-16	Shallow Stony	Shallow Stony	Loamy 12-16	Loamy 12-16
Indicator	Attribute							
1. Rills	S-H	N-S	N-S	N-S	N-S	N-S	N-S	N-S
2. Water Flow Patterns	S-H	S-M	S-M	N-S	N-S	S-M	S-M	N-S
3. Pedestals/Terracettes	S-H	S-M	M	S-M	N-S	S-M	N-S	N-S
4. Bare Ground	S-H	S-M	N-S	N-S	N-S	S-M	N-S	S-M
5. Gullies	S-H	N-S	N-S	N-S	N-S	M	N-S	N-S
6. Wind Scoured, Blowouts and/or Depositions	S-H	N-S	N-S	N-S	N-S	N-S	N-S	N-S
7. Litter Movement	S-H	N-S	N-S	S-M	N-S	N-S	N-S	N-S
8. Soil Surface to Erosion	S-H-B	N-S	N-S	S-M	S-M	S-M	N-S	S-M
9. Soil Surface Loss or Degradation	S-H-B	N-S	S-M	N-S	S-M	S-M	S-M	N-S
10. Plant Community Composition & Distribution Relative to Infiltration & Runoff	H	N-S	M	S-M	M	S-M	M	S-M
11. Compaction Layer	S-H-B	N-S	N-S	N-S	N-S	S-M	N-S	N-S
12. Functional / Structural Groups	B	N-S	M	S-M	S-M	M	M	M
13. Plant Mortality / Decadence	B	M	N-S	S-M	N-S	S-M	S-M	S-M
14. Litter Amount	H-B	N-S	S-M	N-S	N-S	S-M	N-S	N-S
15. Annual Production	B	N-S	S-M	N-S	N-S	M	N-S	N-S
16. Invasive Plants	B	N-S	S-M	S-M	M	S-M	M	M
17. Reproductive Capability of Perennial Plants	B	N-S	N-S	S-M	S-M	S-M	N-S	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

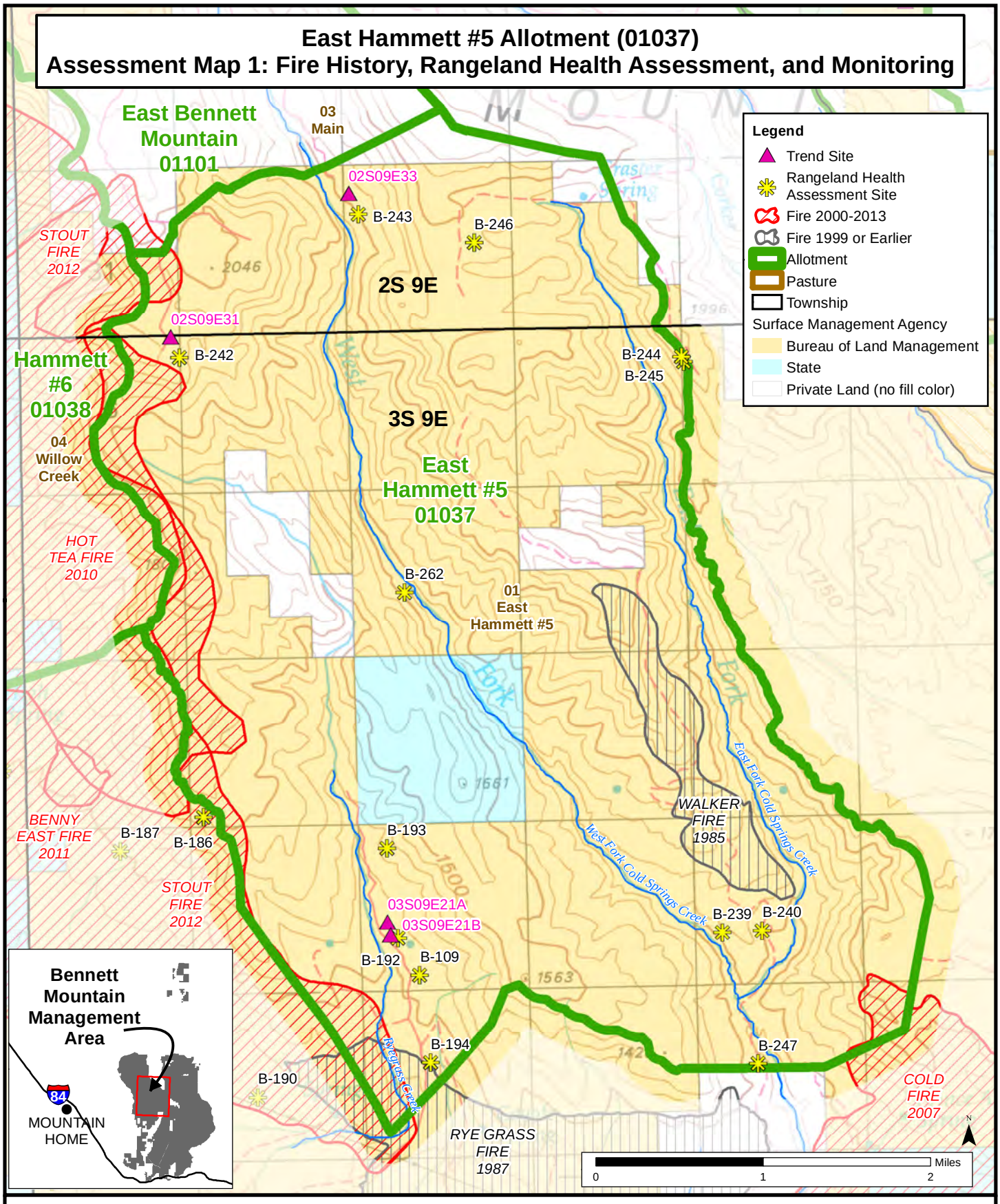
Allotment - Pasture		1037	1037	1037	1037	1037	1037
Identifier		B-243	B-244	B-245	B-246	B-247	B-262
Location		02S09E33	02S09E02	03S09E03	02S09E33	03S09E26	03S09E09
Ecological Site		Fractured S. Stony	Shallow Stony	Loamy 12-16	Loamy 12-16	Loamy 12-16	Fractured S. Slope
Indicator	Attribute						
1. Rills	S-H	N-S	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	M
3. Pedestals/Terracettes	S-H	N-S	S-M	N-S	N-S	S-M	M
4. Bare Ground	S-H	M-E	S-M	S-M	S-M	S-M	N-S
5. Gullies	S-H	N-S	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	N-S
7. Litter Movement	S-H	N-S	N-S	S-M	S-M	S-M	M-E
8. Soil Surface to Erosion	S-H-B	M	N-S	S-M	M	S-M	S-M
9. Soil Surface Loss or Degradation	S-H-B	N-S	S-M	S-M	N-S	S-M	S-M
10. Plant Community Composition & Distitribution Relative to Infiltration & Runoff	H	M-E	N-S	S-M	M	S-M	S-M
11. Compaction Layer	S-H-B	N-S	N-S	N-S	N-S	N-S	N-S
12. Functional / Structural Groups	B	M-E	S-M	M	M	M	S-M
13. Plant Mortality / Decadence	B	S-M	S-M	M	M	S-M	N-S
14. Litter Amount	H-B	N-S	S-M	S-M	N-S	S-M	S-M
15. Annual Production	B	S-M	S-M	N-S	S-M	S-M	S-M
16. Invasive Plants	B	S-M	M	M	M	M	M
17. Reproductive Capability of Perennial Plants	B	N-S	S-M	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

Maps

East Hammett #5 Allotment (01037)
Assessment Map 1: Fire History, Rangeland Health Assessment, and Monitoring



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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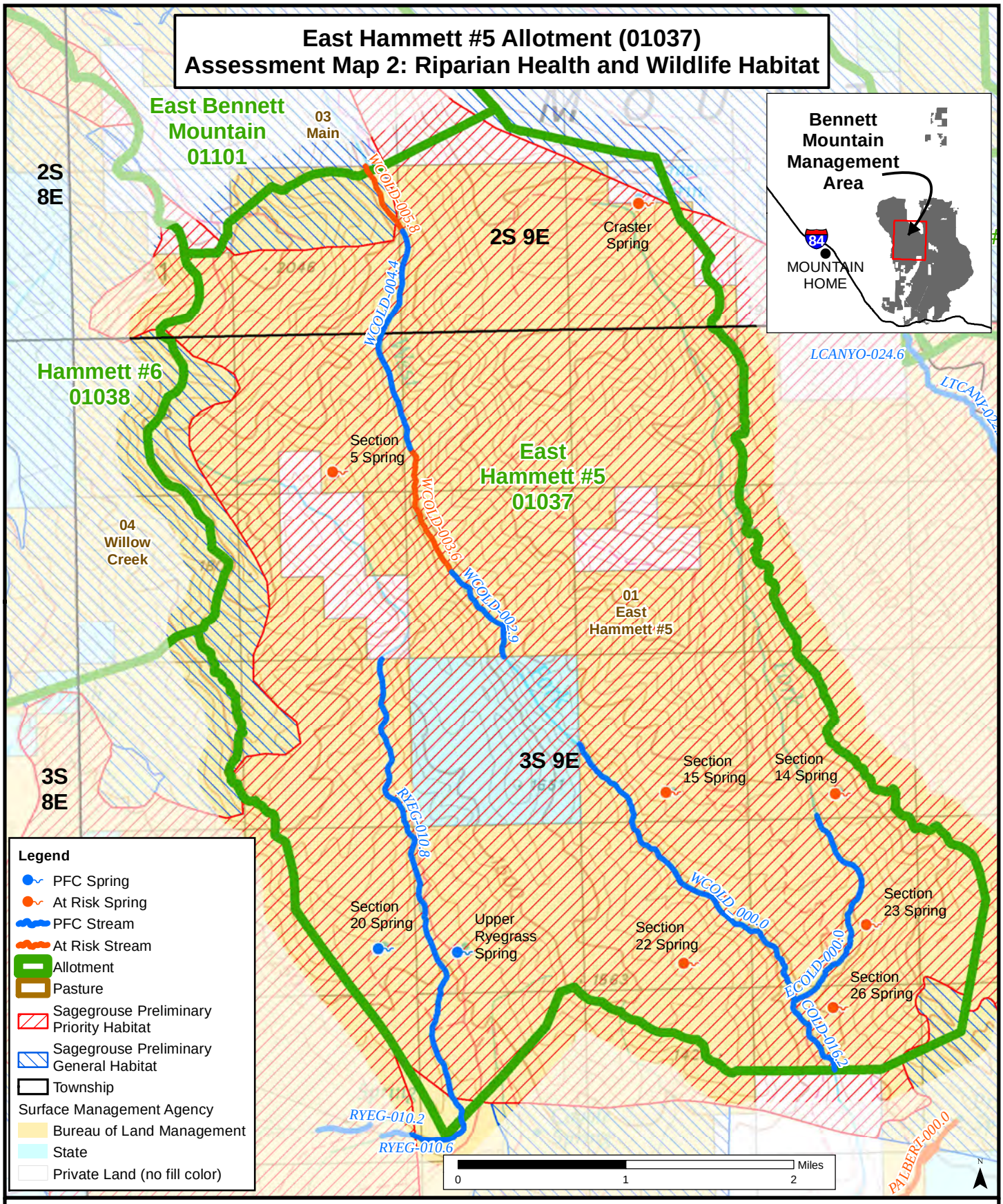
East Hammett #5 Allotment (01037)
Assessment Map 2: Riparian Health and Wildlife Habitat



U.S. Department of the Interior
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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

Allotment Name and Number: East Hammett #5 (01037)

Name of Permittee(s): Kelly Riggs, Double Anchor Ranch (1101847)

Introduction

The East Hammett #5 Allotment (01037) is located approximately 14 miles NW of Glenns Ferry, Idaho. The allotment consists of federal, state, and private lands totaling 11,803 acres, of which 10,471 are federal, 638 are State, and 694 are private.

Applicable Standards

The Idaho Standards for Rangeland Health and Guidelines for Livestock Grazing Management (Standards) 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 is the evaluation of information presented in the allotment rangeland health assessment and whether 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**.**

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

EVALUATE STANDARDS

Since the Assessments, Evaluations, and draft Determinations were completed (February 2010), plant community trend data have been updated across the Bennett Mountain Management Area. Plant frequency and ground cover data were collected at permanent study locations in 2011. 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 1987/1988 to 2011 were used to assess the state and trend of watershed conditions.

Rangeland Health and Long-Term Trend
These data sets indicate that, in general, there was an overall decline in the plant community's ability to protect the watershed and ecological condition, as key native species declined at all elevations and cheatgrass increased at lower elevations. Degradation of the native plant community and replacement by cheatgrass at lower elevations has compromised watershed function. Thirteen rangeland health field assessments were conducted. Plant communities at several assessment sites lacked mid- and large-stature perennial bunchgrasses. Such grasses have root systems and above ground biomass effective at capturing and cycling water, and residual biomass which protects the soil surface from thermal extremes, raindrop impacts, and erosion.

Trends varied by elevation. At the highest elevations, the canopy closed and the understory thinned, basal cover of persistent vegetation decreased, and bare ground between these stems was static. All of these trends would be expected as shrubs grow larger and would result in a net neutral effect on the watershed. At the medium elevations, basal cover of persistent vegetation was static and bare ground increased, while sagebrush frequency increased, large perennial grass frequency decreased, small perennial grasses were extirpated, and cheatgrass frequency was static in the long term. The increase in bare ground and reduction in perennial grasses would be expected to lead to watershed degradation, because there would be less vegetation to hold soil in place. At the lowest elevations, basal cover of persistent vegetation was static and bare ground decreased, sagebrush frequency decreased, Sandberg bluegrass was the only perennial grass present and its frequency decreased, native annual sixweeks fescue increased, and cheatgrass was static and prevalent in the long term. The decrease in Sandberg bluegrass would be expected to lead to degradation of the watershed, due to a loss of its soil holding ability.

Evaluation Finding – Allotment/watershed is:
____ Meeting the Standard
____ Not Meeting the Standard, but making significant progress towards meeting
_X_ Not Meeting the Standard

Rationale for Evaluation Finding
Plant communities at over half of the assessment areas and all the trend locations were not providing for proper watershed protection, due to a degraded understory.

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
Functioning condition assessments, field visits, topographic maps, aerial photography, and GIS data.

Rangeland Health
Streams
A total of 9.2 miles of East Fork Cold Springs, West Fork Cold Springs, Cold Springs, and Ryegrass creeks were in proper functioning condition (PFC) and 1.3 miles of West Fork Cold Springs Creek were functioning at risk (FAR) condition. Segments in PFC contain diverse assemblages of woody and/or herbaceous obligate hydric vegetation appropriate to streambank substrates and flow regime. Segments in FAR condition have low frequencies, densities, and diversity of hydric vegetation along suitable sites in the understory. The woody overstory is relatively healthy and dense; however, understory species are depleted and often missing from areas accessible to livestock. The greenline is often occupied by early seral species including Kentucky bluegrass, and disturbance related forbs such as common mullein and false hellebore.

Springs
Two springs are rated in PFC and seven springs were in FAR condition. Springs in PFC are vegetated primarily with rushes and sedges. Riparian vegetation at FAR condition springs consists mostly of Baltic rush, spikerush, and occasional arroyo willows. Considerable pugging and hummocking is present throughout the spring areas.

Rangeland Health Changes
Riparian vegetation, particularly streams, has become more vigorous and dense, thus improving overall condition of the majority of riparian areas assessed.

Evaluation Finding – Allotment/watershed is:
____ Meeting the Standard
____ Not Meeting the Standard, but making significant progress towards meeting
_X_ Not Meeting the Standard

Rationale for Evaluation Finding
Two segments (1.3 miles) of West Fork Cold Springs Creek (WCOLD-003.6 and WCOLD-005.8) did not meet Standard 2. These stream segments were in FAR condition with static trends due to low hydric vegetation frequency, density, and diversity along suitable sites in the understory. Seven springs in FAR condition did not meet Standard 2. Considerable pugging and hummocking were present throughout the spring areas. Therefore, these riparian-wetland areas are not providing 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
Functioning condition assessments, field visits, topographic maps, aerial photography, and GIS data.

Rangeland Health
A total of 9.2 miles of streams were in PFC, including segments of East Fork Cold Springs, West Fork Cold Springs, Cold Springs, and Ryegrass creeks. These segments were densely vegetated with woody and herbaceous riparian plants and often armored by rocks providing vertical and lateral stability to stream channels and floodplains. A total of 1.3 miles of West Fork Cold Springs Creek (WCOLD-003.6 and WCOLD-005.8) did not meet Standard 3. These stream segments were in FAR condition with static trends. These stream segments were entrenched in some reaches, and often had high width/depth ratios, low sinuosity, and high sediment levels. The segments were laterally unstable as the stream channels continue to adjust to high sediment levels. Bank trampling and hoof shearing were common along accessible portions with finer substrates, and deep-rooted hydric vegetation was insufficient to protect streambanks from mechanical damage (hoof shearing and pugging) associated with livestock use.

Evaluation Finding – Allotment/watershed is:
____ Meeting the Standard
____ Not Meeting the Standard, but making significant progress towards meeting
_X_ Not Meeting the Standard

Rationale for Evaluation Finding
Two segments (1.3 miles) of West Fork Cold Springs Creek (WCOLD-003.6 and WCOLD-005.8) did not meet Standard 3 because of high width/depth ratios, low sinuosity, poor pool/riffle ratios, and high sediment levels. Most of the sediment originates from poor streambank conditions and headcuts upstream on private lands.

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
Thirteen Rangeland Health Field Assessments evaluated the biotic integrity in 2004. Three long-term monitoring locations were used to evaluate the trend of the native plant community from 1987/1988 to 2011.

Rangeland Health and Long-Term Trend
The native understory declined at all elevations. At lower elevations it was being replaced by exotic annual grasses—putting all nearby plant communities at a greater risk of frequent wildfire. Rangeland health indicators were outside the range of historic variability and the native plant community ecological condition was declining. Mid- and large-stature perennial grasses were missing from several sites where invasive plants were common. Invasive exotic plants compete with native plant seedlings for critical resources, such as water, nutrients, and space, and increase in extent and density when native plants become weak and die. At high and medium elevations,

large and small bunchgrasses were disappearing. At lower elevations, shrubs and small bunchgrasses were declining, large and medium bunchgrasses were missing, and exotic annual grasses had the greatest frequencies.

Evaluation Finding – Allotment/watershed is:

____ Meeting the Standard
____ Not Meeting the Standard, but making significant progress towards meeting
_X_ Not Meeting the Standard

Rationale for Evaluation Finding
The lack of perennial grasses in the plant community and the increase in invasive plants are not providing healthy, productive, and diverse native habitat or providing proper nutrient cycling, hydrologic cycling, and energy flow.

Standard 5: Seedings _X_ 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 trend monitoring data and/or photographs, field visits, actual use reports, and allotment files.

Standard 6: Exotic Plant Communities, Other than Seedings _X_ 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 trend monitoring data and/or photographs, field visits, actual use reports, 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
Cold Springs Creek is meeting IDEQ total maximum daily load requirements for bank erosion. BLM has no temperature or bacterial data for East or West Fork Cold Springs creeks; however, streams that are in proper functioning condition generally meet applicable water quality standards. The extent that short segments of functioning at risk segments of West Fork Cold Spring Creek (1.3 miles total) may affect overall water quality in this stream is currently unknown. Ryegrass Creek meets IDEQ applicable water quality standards for intermittent streams (i.e., season cold water biota). The springs do not have sufficient flows to apply water quality standards.

Evaluation Finding – Allotment/watershed is:
_X_ Meeting the Standard
____ Not Meeting the Standard, but making significant progress towards meeting
____ Not Meeting the Standard

Rationale for Evaluation Finding
Streams in the allotment are in compliance with Idaho water quality standards.

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 assessment, site photographs, field visits, CDC database, plant and wildlife surveys.

Rangeland Health
Plants
No federally listed or BLM Special Status Species are known to occur. Twenty acres of public land was surveyed in September, 2004. Suitable habitat exists for mourning milkvetch (*Astragalus atratus* var *inseptus*), but no plants were found.

Wildlife
No federally listed wildlife species are known to occur. Greater sage-grouse, a candidate species under the Endangered Species Act, could occur in the southern portion of the allotment which provides brood-rearing and wintering habitat. Approximately 7,119 acres are classified as preliminary priority habitat (6,922 acres of sagebrush and 197 acres of grassland). The area was aerially surveyed for sage-grouse leks in 2002 and 2004; none were detected. Most of the allotment is in steep terrain and does not provide good sage-grouse breeding habitat.

Lower elevation sites do not provide suitable nesting and brood-rearing habitat for sage-grouse as frequencies of sagebrush and tall and mid-stature bunchgrasses have been significantly reduced. Exotic annual grasses have replaced tall and mid-stature bunchgrasses in shrub interspaces and understories, and provide unsuitable nesting and foraging cover. Low species diversity and availability of perennial and preferred sage-grouse forbs (food and cover) at low elevation sites provide marginal to unsuitable brood-rearing habitat.

Fish
Electro-fishing surveys (1996) conducted by BLM confirmed that redband trout were present in the lower segments of Cold Springs, East Fork Cold Springs, and West Fork Cold Springs creeks. Cold Springs Creek is providing adequate aquatic habitat to support viable populations of redband trout. High levels of fine sediment may limit salmonid spawning success in the upper portions of West Fork Cold Springs Creek, although the standard is being met overall. East Fork Cold Springs Creek has limited potential to support a salmonid fishery due to intermittent flow regimes; although, the stream is often used for spawning early in the spring and a few deeper

pools support a small population of adult redband trout throughout the summer. No fisheries exist in Ryegrass Creek due to intermittent stream flows.

Electro-fishing data collected in 2001 recorded redband trout, a Type 2 BLM Special Status Species, in Cold Springs Creek at a density of 1.3 per m^2 (all age classes), and 0.25 adults per m^2 in lowermost West Fork Cold Springs Creek. High levels of fine sediment may limit salmonid spawning success in the upper portions of West Fork Cold Springs Creek. Aquatic habitat condition was fair (sediment issues) to good throughout perennial streams in the allotment. No fishery exists in Ryegrass Creek due to intermittent stream flows. Standard 8 was being met on all perennial streams.

Rangeland Health Changes
The decline in rangeland health, especially the loss of native plant diversity and the corresponding increase in invasive annuals, has decreased the potential for these areas to support populations of special status plants or animals.

Evaluation Finding – Allotment/watershed is:
____ Meeting the Standard
____ Not Meeting the Standard, but making significant progress towards meeting
_X_ Not Meeting the Standard

Rationale for Evaluation Finding
Standard 4 is not being met and upland vegetation communities are not suitable to maintain viable populations of threatened and endangered, sensitive, and other special status species.