

Rangeland Health Assessment Hammett #7 Allotment (01039)

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General Allotment Information

The Hammett #7 Allotment (01039) is located south of State Highway 20, approximately eight miles west of Hill City, Idaho (Map 1). The allotment is divided into 17 pastures, comprising Federal, State, and private lands totaling 21,803 acres (Table 1). These numbers represent the most current and accurate estimates of allotment acreages based on existing fence lines.

Table 1. Land ownership acres by pasture, Hammett #7 Allotment, Elmore County, Idaho.

| Pasture | BLM | Private | State | USFS | Total |
|------------------|-------|---------|-------|------|--------|
| 1-Grampa’s Field | 0 | 705 | 0 | 13 | 718 |
| 2-Ann Wilson | 50 | 1,112 | 0 | 0 | 1,162 |
| 3-Bud Allen | 68 | 614 | 0 | 0 | 682 |
| 4-Steen’s | 0 | 391 | 0 | 0 | 391 |
| 5-McCallum | 0 | 487 | 0 | 0 | 487 |
| 6-Sackrider 1 | 17 | 1,315 | 639 | 0 | 1,971 |
| 7-Sackrider 2 | 800 | 1,363 | 188 | 0 | 2,351 |
| 8-Blackwell | 5 | 189 | 0 | 0 | 194 |
| 9-Blackwell | 4 | 193 | 0 | 0 | 197 |
| 10-Vina 1 | 418 | 637 | 0 | 0 | 1,055 |
| 11-Twin Tanks | 0 | 1,253 | 56 | 0 | 1,309 |
| 12-Antelope | 0 | 1,591 | 440 | 0 | 2,031 |
| 13- Black Hawk | 705 | 1,642 | 1,379 | 0 | 3,726 |
| 14-Long Draw | 82 | 911 | 0 | 0 | 993 |
| 15-Horse Pasture | 0 | 450 | 0 | 0 | 450 |
| 16-Westfork | 48 | 3,366 | 0 | 0 | 3,414 |
| 17-Vina 2 | 68 | 1 | 603 | 0 | 672 |
| Total | 2,265 | 16,220 | 3,305 | 13 | 21,803 |

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 side slopes, toe slopes, and ridgelines. Several soil types occur throughout the allotment; on BLM land, the most common soils are the Gaib-Elkcreek-Simonton association, Elkcreek-Gaib-Simonton complex, Simonton-Bauscher loams, and Elkcreek-Demast complex. Many other soil types occur within the allotment; however, they mostly occur on private or State lands. The most common ecological site across the allotment is a Loamy 12-16” [ecological sites are named by their general soil type and precipitation (inches); actual precipitation at nearby Anderson Dam and Glens Ferry varied (Figure 1)]. Based on the soil survey for Elmore County, this represents approximately 90% of the allotment. The native plant community associated with this site is dominated by mountain big sagebrush with Idaho fescue and bluebunch wheatgrass (USDA-SCS 1991).

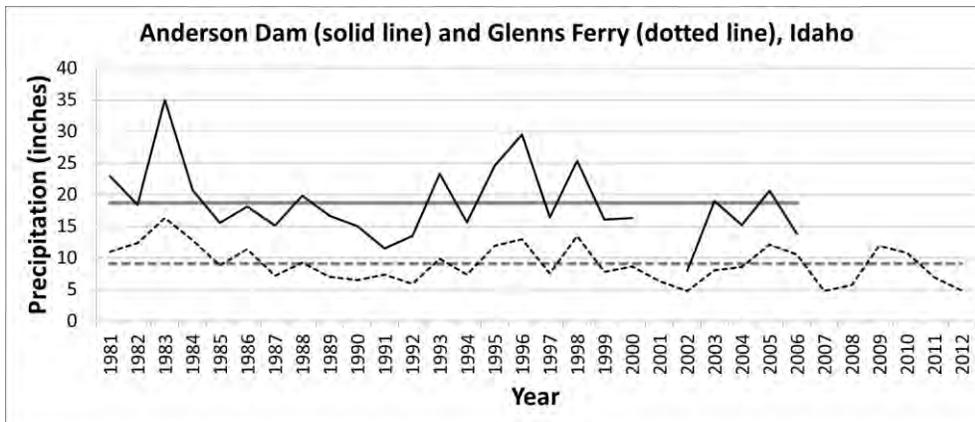


Figure 1. Annual and mean precipitation at Anderson Dam and Glens Ferry, Idaho (Source: National Climate Data Center).

The BLM fire database does not show any history of wildfires occurring on public lands within this allotment from 1957 to the present.

Livestock Grazing Management

The allotment was created in the late 1960s or early 1970s. Livestock grazing is authorized to occur between June 15 and November 30 for a total of 345 Animal Unit Months (AUMs; Table 2).

Table 2. Authorized use summary, Hammett #7 Allotment, Elmore County, Idaho.

| Authorization Number | Livestock | | Season of Use | | % Public Land | Authorized AUMs | | |
|----------------------|-----------|--------|---------------|-------|---------------|-----------------|-----------|------------|
| | Kind | Number | Begin | End | | Active | Suspended | Permitted |
| 1101868 ^a | Cattle | 3 | 06/15 | 09/15 | 100 | 9 | 0 | 64 |
| | Cattle | 54 | 07/01 | 07/31 | 100 | 54 | | |
| 1101603 ^a | Cattle | 117 | 07/01 | 09/30 | 40 | 142 | 0 | 142 |
| 1101651 ^b | Cattle | 27 | 07/01 | 11/30 | 100 | 136 | 0 | 137 |
| Total | | | | | | 342 | 0 | 343 |

^a Use occurs in pastures 7, 10, and 17.

^b Use occurs in pastures 13, 14, and 16.

Based on actual use reports submitted by the authorized livestock operator or annual authorizations, annual use ranged from 228 to 345 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 use between 1997 and 2013, Hammett #7 Allotment, Elmore County, Idaho.

| Grazing Year | Use Period | | AUMs |
|--------------|------------|----------|------|
| | On Date | Off Date | |
| 1997 | 06/15 | 11/30 | 345* |
| 1998 | 06/15 | 11/30 | 269 |
| 1999 | 06/15 | 11/30 | 282 |
| 2000 | 06/15 | 11/30 | 345* |
| 2001 | 06/15 | 11/30 | 330 |
| 2002 | 06/15 | 11/30 | 333 |
| 2003 | 06/15 | 11/30 | 339 |
| 2004 | 06/15 | 11/30 | 337 |
| 2005 | 06/15 | 11/30 | 342 |
| 2006 | 06/15 | 11/30 | 281 |
| 2007 | 06/15 | 10/10 | 258 |
| 2008 | 06/15 | 10/10 | 228 |
| 2009 | 06/15 | 10/31 | 315 |
| 2010 | 06/15 | 10/28 | 333 |
| 2011 | 06/15 | 09/30 | 243 |
| 2012 | 06/15 | 09/30 | 276 |
| 2013 | 06/15 | 10/10 | 277 |

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

Idaho Standards for Rangeland Health

In 2004, BLM conducted three field assessments in the Hammett #7 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 of this document discuss resource conditions as they relate to each of the applicable eight 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, an update to the assessments based on additional photographs from 2014, aerial photography from 2003 to 2013, and long-term monitoring of the plant community and other watershed health indicators from 1990 to 2014 were used to assess the state and trend of watershed conditions. These data sets indicate that there was excessive soil movement; resulting in gullies, pedestalled bunchgrasses, and pockets of cheatgrass. Raw gullies and bare ground were also observed in Sackrider 2 Pasture in 2014. However in Blackhawk Pasture, recruitment of bluebunch wheatgrass into bare patches indicated an upward trend in watershed protection in some areas, due to the species’ ability to grow deep roots, hold water, and resist erosion.

Rangeland Health Field Assessment

Twelve of the 17 rangeland health indicators (1-11 and 14) relate to soil stability and hydrologic function (Table 4). These were based on assessments in 2004. Observations and photographs from 2014 provided additional information, but were not used in the ratings. The number in the range of departure columns represented the number of assessments with the indicator rating in that category. For example, the indicator for the ability of the soil surface to resist erosion (#8) rated in the “slight to moderate” range of departure from expected conditions for the ecological site at three locations, etc.

Table 4. Watershed indicators of rangeland health, Hammett #7 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 | | | | | 3 |
| 2-Water Flow Patterns | | | 1 | 2 | |
| 3-Pedestals/Terracettes | | | | 3 | |
| 4-Bare Ground | | | | 3 | |
| 5-Gullies | | | 2 | | 1 |
| 6-Wind Scoured blowouts/depositions | | | | | 3 |
| 7-Litter Movement | | 1 | | 1 | 1 |
| 8-Soil Surface Resistance to Erosion | | | | 3 | |
| 9-Soil Surface Loss or Degradation | | | | 3 | |
| 10-Plant Community Composition and Distribution Relative to Infiltration and Runoff | | | | 1 | 2 |
| 11-Compaction Layer | | | | | 3 |
| 14-Litter Amount | | | | 2 | 1 |
| Total Indicator Units = 36 (12 indicators x 3 locations) | 0 | 1 | 3 | 18 | 14 |

Of the 36 indicator units relating to watershed health, four were rated outside the normal range of variability of expected conditions for the ecological site in 2004 (Table 6, Appendix 1, Map 1). These four indicator ratings occurred at two assessment locations. At location B-103 [Blackhawk Pasture (Pasture 13)], the indicator for the presence of gullies (#5) rated in the moderate range of departure. At location B-106 [Vina 1 Pasture, (Pasture 10)], three indicators rated beyond the normal range of variability: accentuated water flow patterns (#2), litter movement (#7), and gullies (#5). All rangeland health indicators relating to soil stability and hydrologic function rated within the normal range of variability of expected conditions at

location B-105 (also Vina 1 Pasture). Ratings indicated that the watershed in the Blackhawk and Vina 1 pastures were not adequately protected from erosion and excessive runoff in 2004, based on moderate water flow patterns, moderate gullies, and moderate to extreme litter movement. Trailing was heavy in some locations, creating bare ground and cheatgrass incursions into the native vegetation.

Photographs from 2014 indicated partial recovery in Blackhawk Pasture and bare ground and raw gullies in Sackrider 2 Pasture (Pasture 7). Vina 1 Pasture was not revisited in 2014; therefore, it is not known if this area is recovering. Aerial photographs showed that the gullies and bare ground in all three pastures developed sometime before 2003 and were associated with livestock trails (note that round bare spots formed by ant colonies were also observed, but not considered in this assessment). Gullies in Sackrider 2 Pasture were located along a livestock trail between meadows on state land and a salt block on a saddle on BLM land.

Long-term Vegetation Monitoring

Basal cover of persistent vegetation (stems of perennial grasses, perennial forbs, shrubs, and trees) and bare ground were quantified in two locations (03S10E02A and 03S10E02B in Blackhawk Pasture; Map 1) in 1990 and 2009 using the point cover method and photo-points in 1990, 2004, 2009, and 2014. In both locations, based on point-cover, basal cover of persistent vegetation increased (Figure 2) and the amount of bare ground between them did not change (Figure 3). Photo-points indicated a long-term static trend in vegetative cover. Static to increasing cover of persistent vegetation indicated static to increasing protection against excessive runoff and erosion in the Blackhawk Pasture. The trend was not known for Sackrider 2 and Vina 1 pastures.

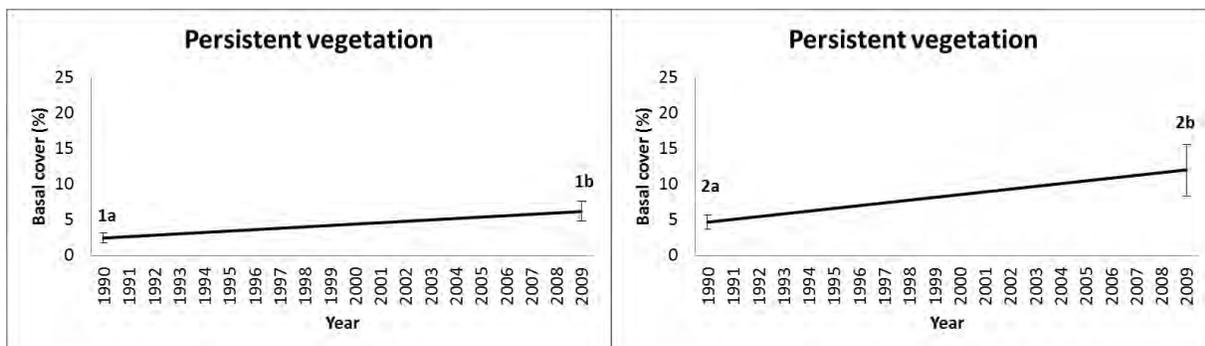


Figure 2. Basal cover of persistent vegetation in the Hammett 7 Allotment (Pasture 13), Elmore County, Idaho, in 03S10E02A (1) and 03S10E02B (2). Different letters above error bars indicate significant differences (P<0.1).

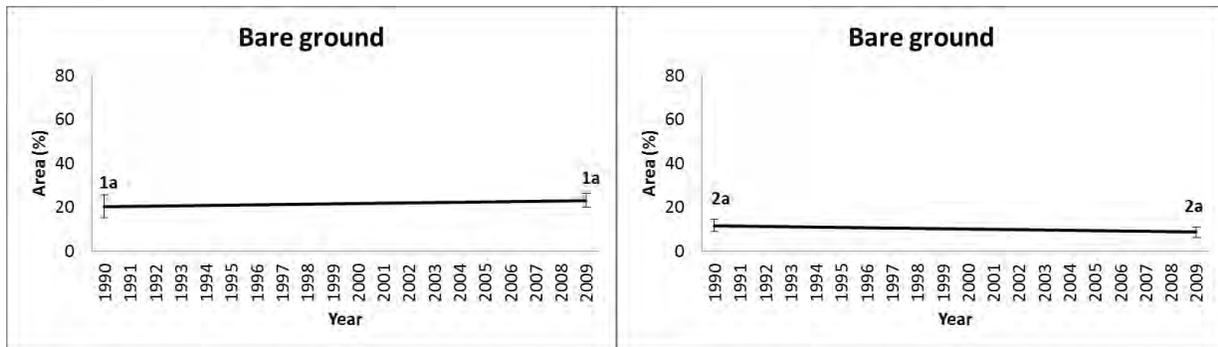


Figure 3. Bare ground in the Hammett 7 Allotment (Pasture 13), Elmore County, Idaho, in 03S10E02A (1) and 03S10E02B (2). Different letters above error bars would indicate significant differences ($P < 0.1$).

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

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

Evaluations of Standards 2 and 3 are based on field inventories and examinations of streams and springs from 2009 through 2013 (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 1.8 miles of stream were in PFC (Table 5, Map 1). The functioning condition ratings were the same for Standards 2 and 3 on any discretely stratified stream segment. Vegetation in all segments was represented by healthy, dense communities of Geyer's willow and coyote willow. Good densities of sedges and rushes were also present to provide bank stability in the stream segments with finer substrates. Stream channels were laterally and vertically stabilized by riparian vegetation and some rock armoring.

Table 5. Stream name, segment ID, segment length, and functioning condition rating summaries for streams, Hammett #7 Allotment, Elmore County, Idaho.

| Stream Name | Segment ID | Flow Regime ¹ | PFC ² Miles | FAR ² Miles | Total miles | H2O quality met? | Redband trout present? ³ |
|----------------------------|---------------|--------------------------|------------------------|------------------------|-------------|------------------|-------------------------------------|
| Sheep Creek | SHEEP-001.5 | P | 0.6 | | 1.2 | Y | S |
| | SHEEP-002.1 | P | 0.6 | | | | |
| Sheep Creek Tributary | SHEEPTR-000.1 | I | 0.2 | | 0.2 | Y | N |
| Camas Creek Tributary | CAMASTR-000.1 | I | 0.4 | | 0.4 | Y | N |
| Total Miles | | | 1.8 | | 1.8 | | |
| Percentage of Total | | | 100% | 0% | 100% | | |

¹ P = perennial flow regime I = intermittent flow regime

² PFC = proper functioning condition, FAR = functional-at-risk condition

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

Spring Conditions

North Bourbon Spring, a developed spring near the southern allotment boundary (Map 2), was rated in FAR condition due to heavy trampling, soil compaction, and absence of riparian vegetation in the wetted areas. Large areas of bare soil were present throughout the spring area, and extended into the adjacent uplands.

Section 10 Spring was rated in FAR condition (Map 2). This perennial spring originates in the Hammett #7 Allotment, flows into small a small pond, then into another pond in the Hammett #1 Allotment. Vegetation was mostly composed of watercress at the spring head, surrounded by upland grasses and dense quaking aspen. The general area has about 30% bare ground. The spring head was well protected by aspen deadfall. There was an active headcut caused by construction of the small pond many years ago.

Standard 4: Native Plant Communities

Rangeland Health Field Assessments, indicating the state of the rangeland in 2004, and long-term monitoring of the plant community and other watershed health indicators from 1990 to 2009 were used to assess the state and trend of watershed conditions. These data sets indicated that trampling and trampling reduced the native plant community; bare ground, erosion, and cheatgrass intrusions occurred. Long-term trends were only known for Blackhawk Pasture, where sagebrush and squirreltail frequencies decreased, and Sandberg bluegrass frequency increased.

Rangeland Health Assessment

All rangeland health field assessments were conducted in native plant communities. 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, Hammett #7 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 | | | | 3 | |
| 9-Soil Surface Loss or Degradation | | | | 3 | |
| 11-Compaction Layer | | | | | 3 |
| 12-Functional/Structural Groups | | | 1 | 2 | |
| 13-Plant Mortality/Decadence | | | | 1 | 2 |
| 14-Litter Amount | | | | 2 | 1 |
| 15-Annual Production | | | | 1 | 2 |
| 16-Invasive Plants | | | | | 3 |
| 17-Reproductive Capability of Perennial Plants | | | | 2 | 1 |
| Total Indicator Units = 27 (9 indicators x 3 locations) | | | 1 | 14 | 12 |

One of the 27 indicator units of biotic integrity in native plant communities in this allotment rated in the “moderate” range of departure from expected conditions for the ecological site (Table 6, Appendix 1, Map 1). This indicator rating occurred at location B-106 (Vina 1 Pasture), and represented functional and structural group diversity. At the other two locations (B-105 in Vina 1 Pasture and B-103 in Blackhawk Pasture), all of the resource indicators relating to biotic integrity were rated within the normal range of variability. Photographs and notes indicate trampled vegetation, bare ground from trailing, and cheatgrass incursions into the native vegetation.

Long-term Vegetation Monitoring

Two nested plot frequency transects, located 0.25 miles apart in the extreme southeast end of the allotment at 5,800 feet elevation, were surveyed in 1990 and 2009 (Map 1). Other large BLM parcels [2/3 of the BLM land area in the allotment (Sackrider 2 and Vina 1 pastures)] were located 5 miles to the northwest and were not surveyed. Repeat photographs were taken in 1990, 2004, 2009, and 2014.

Results of long-term monitoring in Blackhawk Pasture indicated a static trend for shrub frequency at 03S10E02A and a downward trend in 03S10E02B [Figure 4; note shrub species with static low frequencies were not shown, including rabbitbrush and bitterbrush (<5% frequencies in 03S10E02A) and bitterbrush (<10% frequency in 03S10E02B)]. The trend for the deep rooted perennial grass, bluebunch wheatgrass, was static in both locations (Figure 5). Medium rooted perennial grass frequencies were as follows: squirreltail was static in 03S10E02A and decreasing in 03S10E02B (Figure 6), oniongrass and California brome decreased in 03S10E02A and oniongrass was static in in trace frequencies 03S10E02B (Figure 7), and needlegrass species were static in both locations at <10% frequency (not shown). Shallow rooted perennial grass frequency was static at trace frequencies in 03S10E02A and increased in 03S10E02B (Figure 8). Exotic annual grass frequencies were static in both locations (Figure 9).

Repeat photographs in Blackhawk Pasture showed an upward trend in native perennial vegetation due to recruitment of young perennial grasses, including bluebunch wheatgrass, into bare spots by 2014.

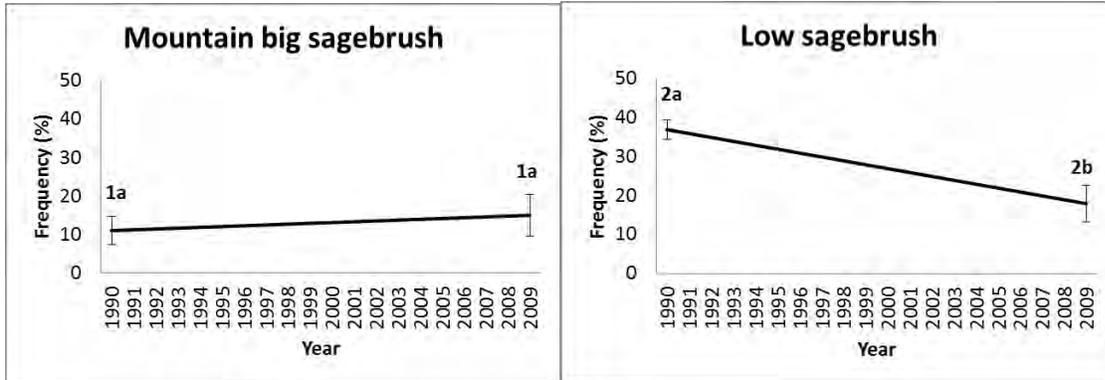


Figure 4. Sagebrush frequency in the Hammett 7 Allotment (Pasture 13), Elmore County, Idaho, in 03S10E02A (1) and 03S10E02B (2). Different letters above error bars indicate significant differences ($P < 0.1$).

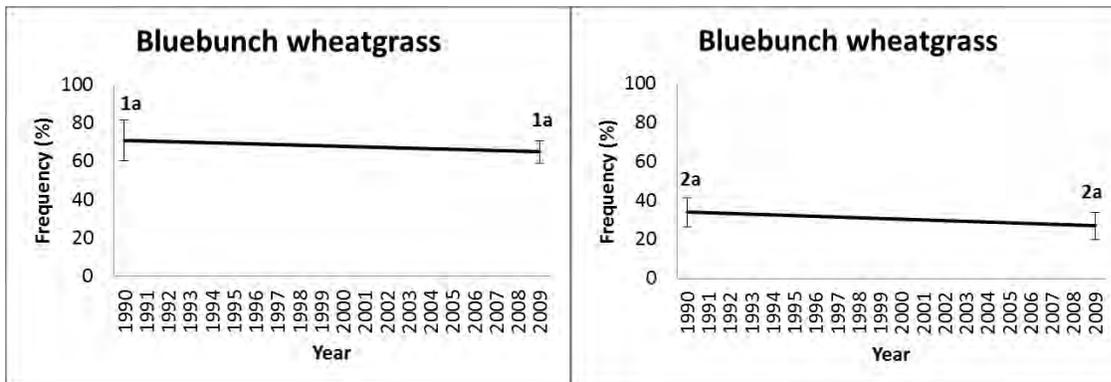


Figure 5. Bluebunch wheatgrass frequency in the Hammett 7 Allotment (Pasture 13), Elmore County, Idaho, in 03S10E02A (1) and 03S10E02B (2). Different letters above error bars would indicate significant differences ($P < 0.1$).

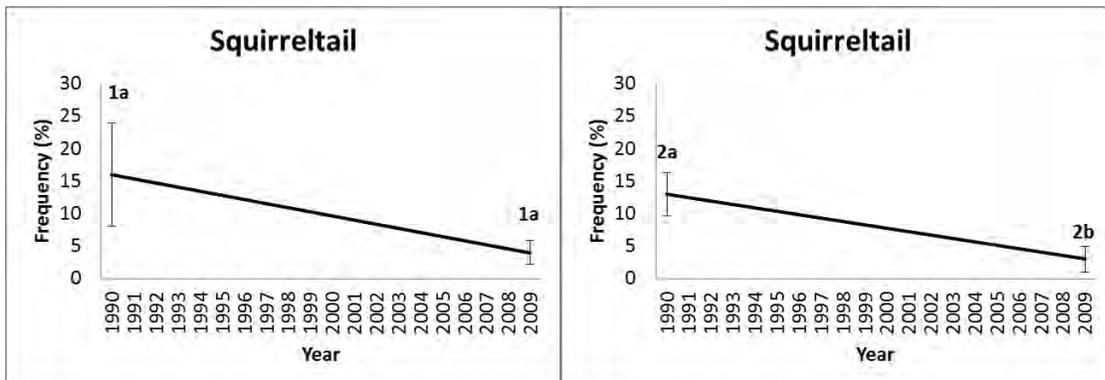


Figure 6. Squirreltail frequency in the Hammett 7 Allotment (Pasture 13), Elmore County, Idaho, in 03S10E02A (1) and 03S10E02B (2). Different letters above error bars indicate significant differences ($P < 0.1$).

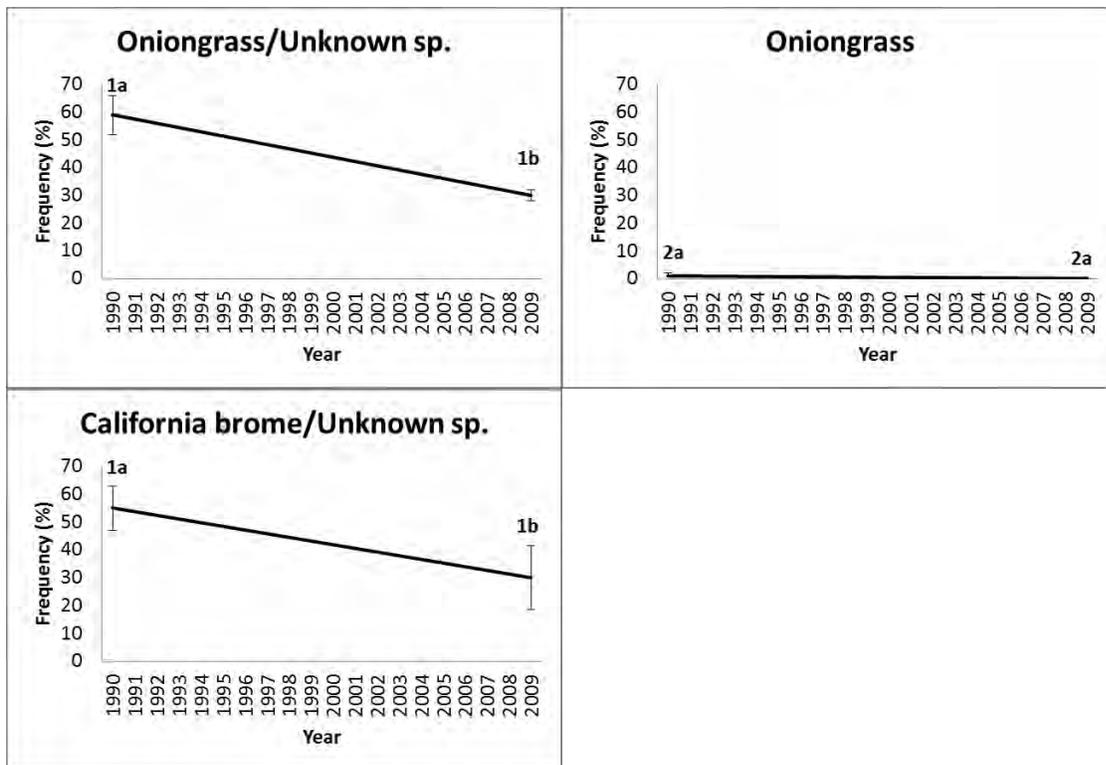


Figure 7. Oniongrass and California brome frequency in the Hammett 7 Allotment (Pasture 13), Elmore County, Idaho, in 03S10E02A (1) and 03S10E02B (2). Different letters above error bars would indicate significant differences ($P < 0.1$). Note: Unidentified grass was recorded in 03S10E02A in 2009 and was analyzed as oniongrass and as California brome; no matter what species it was, oniongrass and California brome frequencies both decreased in 03S10E02A between 1990 and 2009.

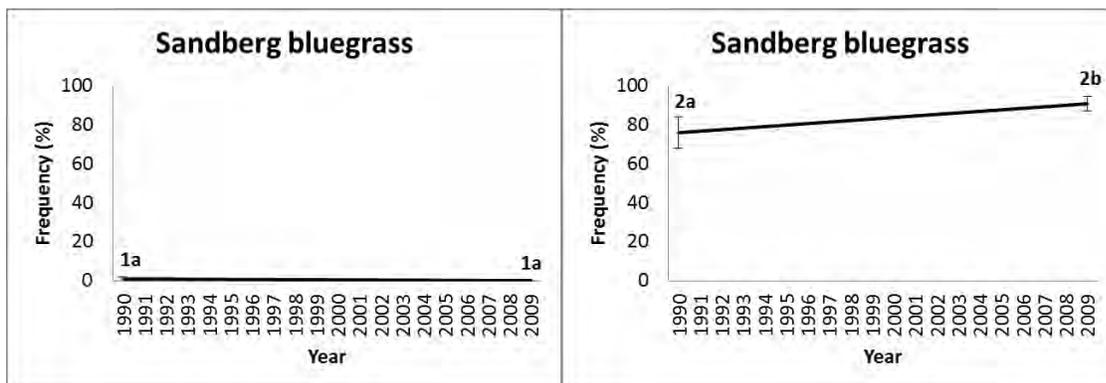


Figure 8. Sandberg bluegrass frequency in the Hammett 7 Allotment (Pasture 13), Elmore County, Idaho, in 03S10E02A (1) and 03S10E02B (2). Different letters above error bars indicate significant differences ($P < 0.1$). Note: Unidentified grass was recorded in 03S10E02A in 2009; if all occurrences were Sandberg bluegrass, then there would have been a significant increase of this species.

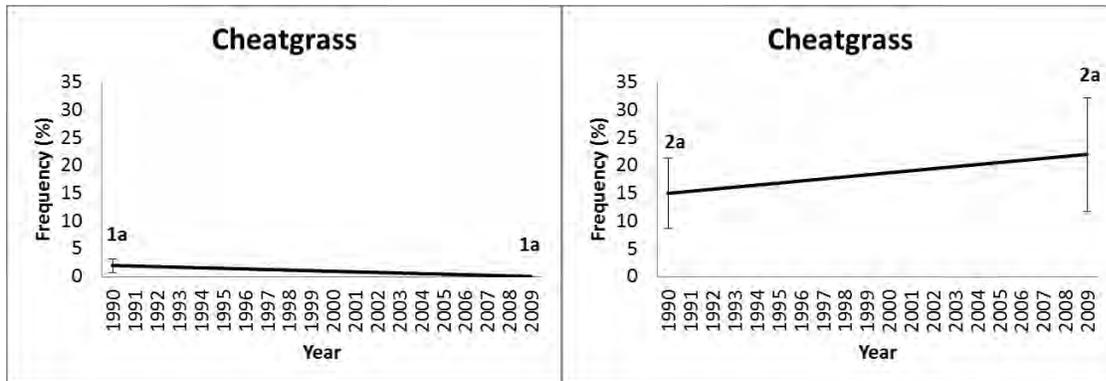


Figure 9. Cheatgrass frequency in the Hammett 7 Allotment (Pasture 13), Elmore County, Idaho, in 03S10E02A (1) and 03S10E02B (2). Different letters above error bars would indicate significant differences ($P < 0.1$).

Standard 5: Rangeland Seeding

No rangeland seedings have occurred on public land in this allotment; 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 the standard for native plant communities would not apply. Therefore, this standard does not apply.

Standard 7: Water Quality

Each of the tributaries to Camas Creek (Sheep Creek, and the Sheep Creek tributary) is 303(d) listed in the Camas Creek Subbasin Assessment and Total Maximum Daily Load (TMDL; IDEQ 2005). TMDL targets were developed for sediment, nutrients, and temperature for all perennial stream orders within the Camas Creek Watershed. Although BLM did not sample water quality in these reaches, the PFC condition of these streams indicates that they are at full capability to meet water quality standards and assigned TMDL targets. The reaches had good streambank stability and good shading levels. Because few impacts from livestock were occurring in accessible portions of these streams, it is likely that nutrient levels are low, and bacterial levels would also meet standards for secondary contact recreation.

Standard 8: Threatened and Endangered Species

Plants

No federally listed or BLM Special Status Species are known to occur. Three acres of public land were surveyed for federally listed and BLM Special Status plant species in August 2004. However, the majority of the allotment has never been surveyed.

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 in the allotment. 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 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

Aerial surveys for sage-grouse leks were conducted in 2002 and 2004; none were detected in the allotment. However, two leks were detected south of the allotment on windswept ridges where snow does not accumulate (Map 2). Sage-grouse could use un-forested portions of the allotment in the Blackhawk Pasture for brood-rearing habitat. The pasture's elevation is at the upper limit of suitable breeding habitat. In years with normal precipitation, the majority of the area is still under snow at the beginning of nesting season. Telemetry data documents sage-grouse in neighboring areas during late brood rearing season, which occurs during late summer and early fall.

Recent site visits to the Blackhawk Pasture in 2014 confirmed that sagebrush cover was adequate to provide suitable nesting cover for sage-grouse. Tall- and mid-stature perennial bunchgrass cover (predominantly bluebunch wheatgrass) was adequate to provide suitable nesting and foraging cover for sage-grouse. Exotic annual grasses were typically restricted to portions of south facing aspects in the pasture and do not retract from the sites overall quality. Sage-grouse preferred forbs and perennial forbs were common and diverse across the pasture and provide suitable brood-rearing habitat. Common forbs included buckwheat, groundsel, phlox, hawksbeard, desert parsley, western yarrow, lupine, woodland star flower, and blue-eyed Mary.

Special Status Animals

Potential habitat for flammulated owls and northern goshawks (Type 3 Special Status Species) exists in conifer stands throughout Pasture 7. Lewis' woodpecker, another Special Status Species, was observed in the area in spring 2009 and during recent sites visits in spring 2014.

Big Game

Conifer, aspen, and shrub stands provide summer/fall habitat for mule deer and elk.

Fish

Although BLM did not collect electrofishing data or ocular fish surveys in the Camas/Sheep Creek watershed, the perennial flow regimes, and connection to known redband trout populations in Camas Creek are strong evidence that redband would be present at least seasonally in these stream segments. Redband trout may also be seasonally present in the Sheep Creek tributary stream depending on the water year.

Appendices and Maps

Appendix 1. Indicators of Rangeland Health

| Allotment - Pasture | | 1039 | 1039 | 1039 |
|--|-----------|-------------|-------------|-------------|
| Identifier | | B-103 | B-105 | B-106 |
| Location | | 03S10E02 | 02S10E17 | 02S10E18 |
| Ecological Site | | Loamy 12-16 | Loamy 12-16 | Loamy 12-16 |
| Indicator | Attribute | | | |
| 1. Rills | S-H | N-S | N-S | N-S |
| 2. Water Flow Patterns | S-H | S-M | S-M | M |
| 3. Pedestals/Terracettes | S-H | S-M | S-M | S-M |
| 4. Bare Ground | S-H | S-M | S-M | S-M |
| 5. Gullies | S-H | M | N-S | M |
| 6. Wind Scoured, Blowouts and/or Depositions | S-H | N-S | N-S | N-S |
| 7. Litter Movement | S-H | N-S | S-M | M-E |
| 8. Soil Surface to Erosion | S-H-B | S-M | S-M | S-M |
| 9. Soil Surface Loss or Degradation | S-H-B | S-M | S-M | S-M |
| 10. Plant Community Composition and Distribution Relative to Infiltration and Runoff | H | N-S | N-S | S-M |
| 11. Compaction Layer | S-H-B | N-S | N-S | N-S |
| 12. Functional / Structural Groups | B | S-M | S-M | M |
| 13. Plant Mortality / Decadence | B | N-S | N-S | S-M |
| 14. Litter Amount | H-B | S-M | N-S | S-M |
| 15. Annual Production | B | N-S | N-S | S-M |
| 16. Invasive Plants | B | N-S | N-S | N-S |
| 17. Reproductive Capability of Perennial Plants | B | N-S | S-M | S-M |

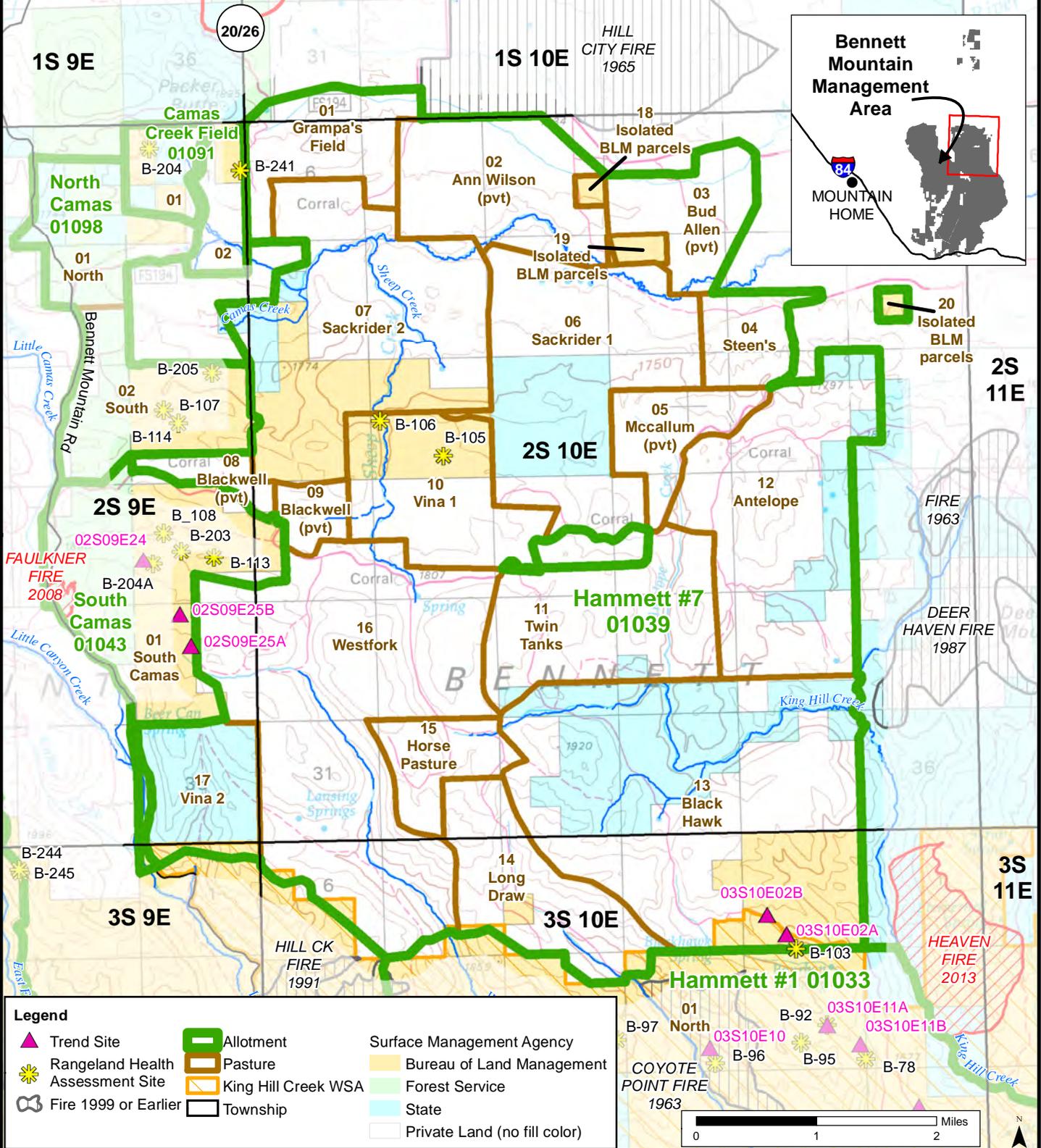
S= Soil/Site Stability; **H**= Hydrologic Function; **B**= Biotic Integrity

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

Map(s)

Hammett #7 Allotment (01039)

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



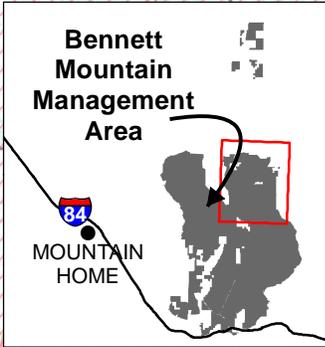
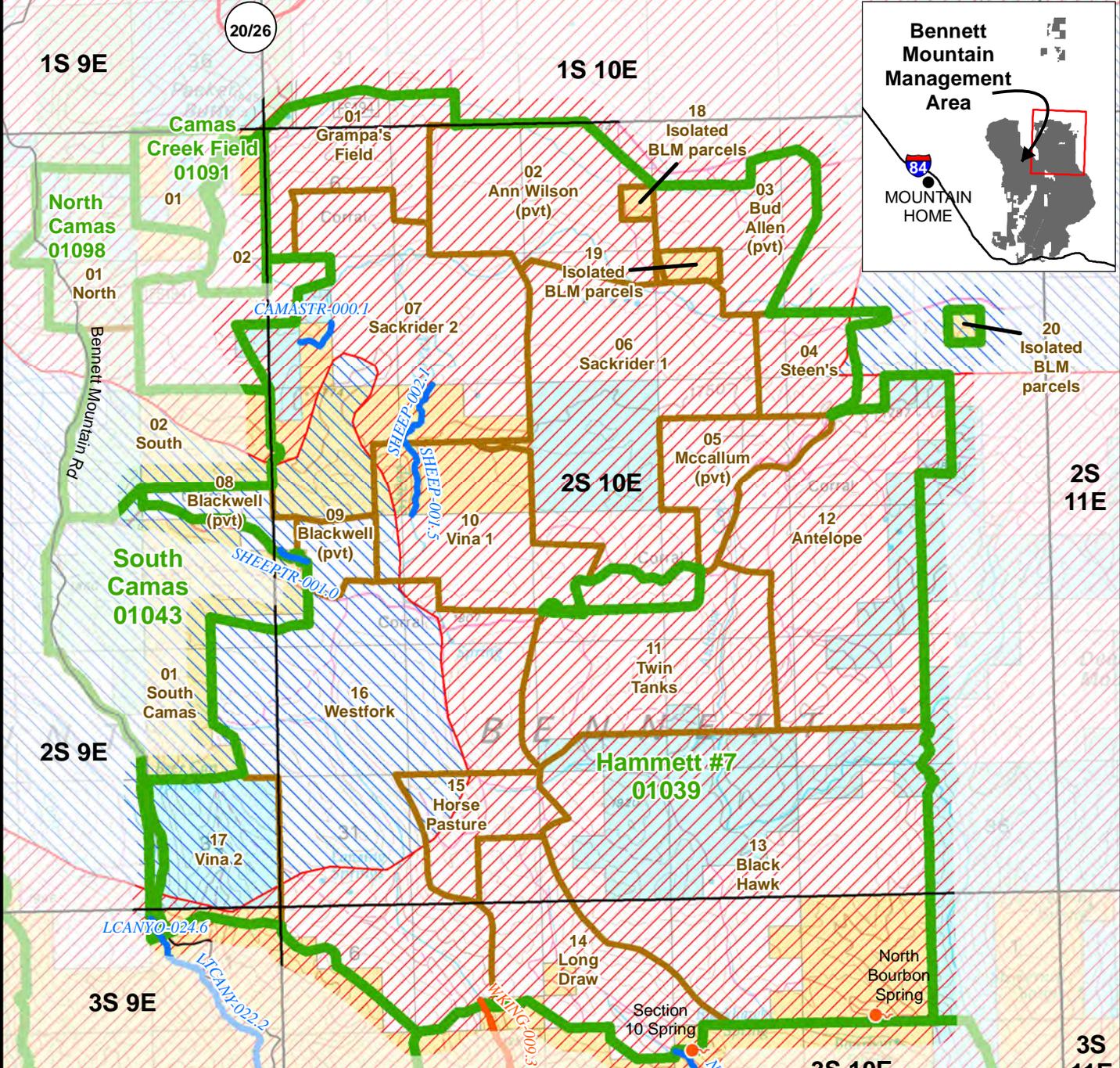
U.S. Department of the Interior
 Bureau of Land Management, Idaho
 Boise District, Four Rivers Field Office
 Map date: May 26, 2014



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Hammett #7 Allotment (01039) Assessment Map 2: Riparian Health and Wildlife Habitat



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



U.S. Department of the Interior
Bureau of Land Management, Idaho
Boise District, Four Rivers Field Office
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EVALUATION REPORT

Achieving the Idaho Standards for Rangeland Health

Field Office: IDB010 Four Rivers

Grazing Allotment Name and Number: Hammett #7 (01039)

Name of Permittee(s): Barber/Caven Ranches % Jim Chambers; #1101603
Crescent Moon LLC % Jim Chambers; #1101668
Iron Horse Ranch LLC % John McCallum; #1101651

Introduction

The Hammett #7 (#01039) Allotment is located south of State Highway 20, approximately eight miles west of Hill City, Idaho. It is divided into 17 pastures, comprising approximately 2,271 acres of Federal, 3,305 acres of State, and 15,854 acres of private lands, totaling 21,430 acres.

Applicable Standards:

The Idaho Standards for Rangeland Health and Guidelines for Livestock Grazing Management are used as management goals to maintain or improve resources, protect cultural resources, and sustain productivity of the land. Standards that are appropriate to a particular allotment are used, and provide information which is used to determine the health and condition of public lands.

This document is the evaluation of information presented in the allotment rangeland health assessment and whether rangeland health standards are being achieved. The determination of what significant factors or causal agents are involved and whether or not livestock management practices are in conformance with applicable guidelines is presented in the Determination Document.

Standards 1 (Watersheds), Standards 2 (Riparian Areas & Wetlands), 3 (Stream Channels & Floodplains), 4 (Native Plant Communities), 7 (Water Quality), and 8 (Threatened and Endangered Plants and Animals) apply to the allotment's public lands. Standard 5 (Seeding) does not apply because no seeded areas occur here. Standard 6 (Exotic Plant Communities) does not apply because, although exotic annual plants do occur in the allotment, they do not occur in sufficient densities and frequencies that Standard 4 (Native Plant Communities) would not be applicable.

EVALUATE STANDARDS

Standard 1: Watersheds

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

Evaluation and Information Sources

Rangeland Health Field Assessments, indicating the state of the rangeland in 2004, and long-term monitoring of the plant community and other watershed health indicators from 1990 to 2009 were used to assess the state and trend of watershed conditions.

Rangeland Health and Long-Term Trends

Gullies, long water-flow patterns, pedestalled bunchgrasses, and cheatgrass incursions into the native plant community have resulted in watershed degradation and could exacerbate erosion following a wildfire, resulting in a downward trend in ecological condition. Three rangeland health field assessments were conducted on public land in 2004. Gullies associated with livestock trailing were observed at two of the locations (Blackhawk and Vina 1 pastures). A third location with gullies associated with livestock trailing was also observed in 2014 (Sackrider Pasture) and aerial photographs indicated that they were present in 2004, at the time that rangeland health assessments documented gullies elsewhere. In this location, water is channeled down livestock trails that lead from meadows on State land to a salt block on a saddle above. In Blackhawk Pasture, gullies and bare patches were recovering in 2014 as native vegetation recruited into these areas. Increasing basal cover of persistent vegetation also indicated an improvement in watershed protection in the Blackhawk Pasture, due to the vegetation's soil holding properties. Vina 1 Pasture was not revisited in 2014; therefore, it is not known if the gullies and bare ground were recovering like in Blackhawk Pasture, or still raw like in Sackrider Pasture.

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 resource issues identified in the rangeland health field assessments (gullies, water flow patterns, litter movement, pedestalling and cheatgrass incursions associated with livestock trails) indicate that this standard is not being achieved. In Blackhawk Pasture, partial recovery of upland vegetation is beginning to stabilize the soil; therefore, this pasture was making significant progress towards meeting Standard 1. It is not known if Vina 1 Pasture is making progress towards meeting this standard. Sackrider 2 Pasture is not, as erosion is still prevalent between meadows on state land and a salt block on BLM land.

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 (2009), and functioning condition assessments.

Rangeland Health

Streams

A total of 1.8 miles of Sheep Creek, Sheep Creek tributary, and a Camas Creek tributary were rated in proper functioning condition (PFC). Vegetation was a healthy and dense community of Geyer's willow and coyote willow. Good densities of sedges and rushes were providing bank stability where finer substrates were present.

Springs

North Bourbon Spring was rated in functional-at-risk (FAR) condition. Heavy trampling, soil compaction, and absence of wetland obligate vegetation in the spring's wetted areas were observed. Disturbance resulting in large bare areas were present around the spring and into the surrounding uplands. Section 10 Spring was also rated in FAR condition; however, more wetland obligate vegetation was present.

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

Poor conditions at North Bourbon Spring in the form of soil compaction and a lack of obligate riparian vegetation are not providing for proper nutrient cycling, 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 (2009), and functioning condition assessments.

Rangeland Health

A total of 1.8 miles of Sheep Creek, Sheep Creek tributary, and Camas Creek tributary were rated in proper functioning condition (PFC). Woody and herbaceous riparian vegetation on all segments was healthy and dense providing hydrologic stability. Other portions of the streams are rock-controlled and also very stable.

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

Sheep Creek, and Sheep and Camas Creek tributaries were in PFC.

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 1990 to 2009 were used to assess the state and trend of watershed conditions.

Rangeland Health and Long-Term Trends

Rangeland Health Assessments indicated that native plant communities were within the normal range of variability. Long-term trend data, which was only collected in the Blackhawk Pasture, indicated a static trend for large bunchgrasses, a static to downward trend for shrubs and medium bunchgrasses, and a static to upward trend for small bunchgrasses. General observations in Blackhawk Pasture indicated that bluebunch wheatgrass and other native upland species were beginning to occupy gullies and previously bare patches by 2014. General observations in Sackrider 2 Pasture in 2014 and aerial photographs from several years indicated that persistent disturbance between the meadows on State land and a salt block on BLM land have led to a degraded native plant community in a localized area. Vina 1 Pasture was not revisited in 2014; therefore, it is not known if native vegetation was recovering after disturbances noted in 2004.

Evaluation Finding – Allotment/watershed is:

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

Rationale for Evaluation Finding

Rangeland health field assessments and trend data indicate that native plant communities were being maintained in a satisfactory condition. Vegetation in the majority of uplands was in the normal range of variability. However, 2004 assessments indicated exposed areas (unvegetated) associated with isolated gullies. Based on a 2014 site visit, presence of native upland vegetation indicates that isolated exposed areas in Blackhawk Pasture were recovering. Current conditions of exposed areas in the Vina 1 Pasture are unknown, as it was only visited in 2004. Based on a 2014 site visit, native vegetation was not established on exposed areas in Sackrider 2 Pasture.

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 studies, 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 assessments, long-term monitoring studies, 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

Topographic maps, aerial photography, GIS data and imagery, Idaho Department of Environmental Quality (IDEQ) data, and field visits.

Rangeland Health

The Sheep Creek segments, Camas Creek tributary segments, and tributary to Sheep Creek segments meet applicable IDEQ water quality standards for seasonal cold water biota. Shading and limited livestock impacts make it likely that bacterial levels would meet standards for secondary contact recreation, as well. Downstream segments outside the allotment were not meeting Total Maximum Daily Load (TMDL) targets. Within the allotment, streambanks were stable and vegetation provided appropriate shading; therefore, stream conditions were not contributing to TMDL issues.

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 are in compliance with Idaho water quality standards in the allotment.

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 candidate species are known to occur.

Wildlife

No federally listed are known to occur. Greater sage-grouse, a candidate species, could use un-forested portions of the allotment in the Blackhawk Pasture for brood-rearing habitat. The canopy cover of sagebrush and bluebunch wheatgrass, and the availability of perennial and preferred forb species provide suitable brood-rearing habitat for sage-grouse.

FAR conditions at North Bourbon Spring limit the ability to support various life history requirements (e.g., food, cover) for most wildlife species including sage-grouse.

Fish

No fisheries data are available for Sheep Creek or the small tributaries to Sheep Creek or Camas Creek. However, it is likely that these streams could support redband trout. The proper functioning condition of these streams suggests that aquatic habitat requirements for persistence of a viable redband trout fishery would be met.

Rangeland Health Changes

The plant community is functioning; however, trend is downward at the long-term monitoring sites. If this trend continues, the habitat for special status plants and animals will be at risk.

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 depleted condition of North Bourbon Spring does not provide for the needs of special status wildlife.