

BUREAU OF LAND MANAGEMENT

Rangeland Vegetation Including Noxious Weeds and Invasive Plants Specialist Report

Owyhee Field Office Group 2 Chipmunk Allotments
May 2013

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Rangeland Vegetation Including Noxious Weeds and Invasive Plants Specialist Report

Introduction and Background

In 1997, the Idaho BLM adopted rangeland health standards (Appendix A - *Idaho Standards for Rangeland Health and Guidelines for Livestock Grazing Management*), which were developed in coordination with the agency's three Resource Advisory Councils during the previous 2 years. The Standards outline the Bureau of Land Management's (BLM) rangeland management goals for the betterment of the environment and sustained productivity of the range. They were developed with the specific intent of providing for the multiple uses of public lands managed by the BLM within Idaho. Application of the standards should involve collaboration between the authorized officer, interested publics, and resource users.

The eight Idaho Standards of Rangeland Health (ISRH) are expressions of the level of physical and biological condition or degree of function required for healthy, sustainable rangelands, based on a number of indicators of rangeland health. Rangelands should be meeting or making significant progress toward meeting the Standards through proper nutrient and hydrologic cycling and energy flow.

Appropriate to soil type, climate, and landform, indicators are a list of typical physical and biological factors and processes that can be measured and/or observed (e.g., photographic monitoring). They are used in combination to provide information necessary to determine the health and condition of the rangelands. Usually, no single indicator provides sufficient information to determine rangeland health, and only those indicators appropriate to a particular site are to be used. The indicators listed below each Standard are not intended to be all-inclusive, and the issue of scale must be considered when evaluating each indicator. In some cases, individual isolated sites within a landscape may not be meeting the Standards, but broader areas must be in proper functioning condition. Furthermore, fragmentation of habitat that reduces the effective size of large areas must also be evaluated for its consequences.

The Specialist Report is a compilation and analysis of all data and information available for an allotment or group of allotments that describes the current rangeland health conditions and identifies changes or trends in rangeland health over time. Rangeland health field assessments (RHFAs) are used in association with other quantitative monitoring and inventory information as a qualitative evaluation tool to provide early warnings of resource problems in rangeland uplands. These allotment reviews incorporates procedures for assessing Standards 1, 4, 5, and 6, and compares 17 indicators to a reference state or Ecological Site Descriptions (USDA NRCS, 2010) and expresses a degree of departure from what is expected.

This specialist report draws on monitoring reports and information on representative sites to determine rangeland health, condition, and trend, based on a number of indicators of rangeland health. It answers two major questions:

1. Is the allotment meeting the Idaho Standards for Rangeland Health?
2. If the allotment is not meeting the ISRH, is it making significant progress toward meeting the ISRH?

Group 2 Allotments and Livestock Grazing Management

The Group 2 Chipmunk allotments, which include Alkali-Wildcat (514), Elephant Butte (513), Poison Creek (603), Rats Nest (522), Sands Basin (521), Blackstock Springs (515), Corral Creek FFR (602),

Chipmunk Field FFR (523), Jackson Creek (506), Texas Basin FFR (472), Baxter Basin (530), Burgess (572), Burgess FFR (638), Chimney Pot FFR (464), Cow Creek (562), Ferris FFR (545), Franconi (558), Joint (531), Lowry FFR (477), Madriaga (557), R Collins FFR (612), Soda Creek (652), Stanford FFR (608), Trout Creek (529), and Trout Creek/Lequerica (560) (Map GEN-1).

The 25 Chipmunk Group allotments are located in Owyhee County, Idaho, and occupy the northwestern portions of the Owyhee Mountains along the state line from just south-southwest of Marsing, Idaho, to east of Jordan Valley, Oregon. Elevations range from around 2,324 feet in pasture 3 of the Elephant Butte allotment to 7,400 feet in pasture 5 of the Jackson Creek allotment.

In the northern third of the Chipmunk Group area, the terrain is diverse and extends from the low salt-desert shrubland flats above the Snake River plains across the abruptly rising steep rocky foothills and structural benches along the northern boundary of the Owyhee Mountains. Beyond the rim, the landscape consists of undulating plateaus that are bisected by major stream systems, such as Jump Creek and Squaw Creek.

The 25 Chipmunk Group allotments include the 150-acre Squaw Creek Research Natural Area (RNA) and Area of Critical Environmental Concern (ACEC) and are adjacent to the 612-acre Jump Creek Canyon ACEC, as designated by the Owyhee Resource Management Plan (ORMP) (**USDI BLM, 1999**). Two of the three physically separated portions of Squaw Creek are represented by excellent-condition, low-elevation Wyoming sagebrush/bluebunch wheatgrass communities (Map ACEC-1). Grazing is excluded from the Squaw Creek RNA, prohibited from the Jump Creek Canyon and restricted along the Jump Creek Canyon rim.

Overview of Allotments

Alkali-Wildcat Allotment

Approximately 65 percent of this allotment has burned since the early 1960s, with the most recent fire in 2012. Post-fire seeding occurred in the 1960s, with only remnant crested wheatgrass (*Agropyron cristatum*) remaining. This allotment is dominated by a sagebrush/rabbitbrush overstory with Sandberg bluegrass (*Poa secunda*) and invasive annuals co-dominating the understory and bluebunch wheatgrass a minor component. Historic grazing practices, wildfire, and exotic vegetation are the drivers in failing to meet Standard 4. The RHFA data for the allotment identify a shift towards shallower-rooted bunchgrasses and evidence of soil surface erosion contributing to the departure from site potential and a lack of ecological balance. Trend data support RHFA findings with a documented short-term increase of annual grasses and sprouting shrubs. Two noxious weed sites of tamarisk are present, one of which was chemically treated recently. Both will continue to be monitored and treated as part of the Boise District weed program.

Baxter Basin Allotment

Of the three pastures in the Baxter Basin allotment, pastures 1 and 2 are dominated by native plant communities and are evaluated under Standard 4 (Native Plant Communities); pasture 3 is dominated by invasive annuals and is evaluated under Standard 6 (Exotic Plant Communities). There is no long-term trend information available for this allotment.

Pasture 1: The native plant community, including shrubs, has reestablished following the 1960 wildfire and subsequent re-seeding. The plant community is characterized by scattered basin big sagebrush and antelope bitterbrush, with an understory consisting of Sandberg bluegrass, crested wheatgrass, bulbous bluegrass, bottlebrush squirreltail, and bluebunch wheatgrass. The invasive annual grass medusahead wildrye (*Taeniatherum caput-medusae*) occurs in dense stands in small pockets in pasture 1. Overall,

plant vigor and seedstalk production of shrubs and grasses is good and appears adequate to enable recruitment in response to favorable climatic events.

Pasture 2: The native plant community resemble reference condition, with minimal changes in the plant community composition, resulting in minimal deviation of organic matter content in the soil and residual plant material. Relative to the structural diversity of the plant communities, the soils are replenished with appropriate organic inputs, which are necessary for nutrient cycling and continued productivity of the soils and plant communities.

Pasture 3: The 1960 wildfire resulted in significant changes to the plant community structure and composition. This pasture is largely dominated by medusahead wildrye. Although this invasive annual has replaced the native plant community, the requirements for soil stability are being met. There is little indication of accelerated erosion occurring, and noxious weeds were not found in this pasture. The remnant perennial grasses appear vigorous and reproductively capable; however, the populations do not appear large enough to compete with the medusahead wildrye, or to contribute to recruitment of native plant communities.

Blackstock Springs Allotment

All three pastures in the Blackstock Springs allotment are evaluated under Standard 4 (Native Plant Communities). Noxious weeds are present in the Blackstock Springs allotment, and all are part of the Boise District weed program, through which they will continue to be monitored and treated as appropriate.

Pasture 1: In 1960, approximately 90 percent of this allotment burned, and a portion was subsequently seeded with crested wheatgrass. Previously seeded areas have a shrub cover of Wyoming big sagebrush, horsebrush, and rabbitbrush, which are common to scattered, and Sandberg bluegrass, squirreltail, and invasive annuals in comparable amounts. Invasive annual weeds are scattered throughout the area, with concentrations in disturbed areas. Crested wheatgrass is present in minor amounts. The native portion of the pasture has low diversity of plants, with native perennial shrubs and grasses, with the shrub component, particularly rabbitbrush, and Sandberg bluegrass being higher than expected. Few native forbs are present. Invasive annual weeds have a common presence. This pasture is not meeting Standard 4.

Pastures 2 and 3: Both pastures are located at higher elevation (4,500'+), which provides greater moisture and cooler temperatures and, therefore, more resilience to disturbance. Both pastures display a diverse array of shrub, grass, and forb species. Trend data in pasture 2 identify a concern for an increase in annual weeds, while annual weed invasion in pasture 3 was noted to be in trace amounts. Shrub composition is in balance while the understory has a slight shift away from potential with Sandberg bluegrass a strong component of the understory in pasture 2. Healthy, productive, and diverse populations of native plants are being maintained in both pastures to provide for proper nutrient cycling, hydrologic cycling, and energy flow. These pastures are meeting Standard 4.

Burgess Allotment

Pastures 1 and 3 are managed by the BLM. Pasture 2 is private land and therefore will not be discussed below. Both pastures are evaluated under Standard 4 (Native Plant Communities).

Pastures 1 and 3: Current vegetation of pastures 1 and 3 is a shrub overstory with an understory of perennial grasses co-dominant with annual weeds. While the diversity of species is present, non-natives are higher than expected in pasture 3. Trend data in pasture 3 show large bunchgrasses increasing significantly and therefore making progress toward meeting Standards of rangeland health. Whitetop is

known to occur in this allotment. The four sites (Table VEG-7) will continue to be monitored and treated as part of the Boise District weed program.

Burgess FFR Allotment

Of the two pastures in the Burgess FFR allotment, pasture 1 is dominated by native plant communities and is meeting Standard 4 (Native Plant Communities); pasture 2 is dominated by invasive annuals and is not meeting Standard 6 (Exotic Plant Communities). There is no long-term trend information available for this allotment.

Pasture 1: Current vegetation of pasture 1 is a sagebrush overstory with an understory of perennial grasses with patches of annual weeds.

Pasture 2: This pasture was located in an old burn area and has been invaded by a host of annual grasses consisting of medusahead, cheatgrass (*Bromus tectorum*), bulbous bluegrass, and North Africa grass. Annual grasses are common throughout the pastures with some patches of total dominance. Shrub and bunchgrass cover are largely lacking but when present only in trace amounts.

Chimney Pot FFR Allotment

This one-pasture allotment is dominated by native plant communities and is meeting Standard 4 (Native Plant Communities). An RHFA was established in 2011 and shows a none to slight departure from expected conditions for the ecological site.

Chipmunk Field FFR Allotment

This one-pasture allotment is dominated by native plant communities and is meeting Standard 4 (Native Plant Communities). Dominant visual aspect was a mix of mountain big sagebrush, antelope bitterbrush, and rabbitbrush, with bluebunch wheatgrass, Idaho fescue, squirreltail, and Sandberg bluegrass in the understory. Some cheatgrass was present; however, the native plant community is vigorous and healthy and able to compete for resources. All indicators of biotic integrity were near expected conditions for this ecological site.

Corral Creek FFR Allotment

This one-pasture allotment is dominated by native plant communities and is meeting Standard 4 (Native Plant Communities). Dominant visual aspect was sagebrush with Sandberg bluegrass dominating the understory, while bluebunch wheatgrass was less common. Some cheatgrass was present; however, the native plant community is vigorous and healthy and able to compete for resources.

Cow Creek Allotment

All five pastures of the Cow Creek allotment are evaluated under Standard 4 (Native Plant Communities). Pastures 1, 3, 4, and 5 are meeting the Standard and pasture 2 is not. Three noxious weed sites are known in the allotment but are not contributing factors in failing to meet Standard 4. Canada thistle and Scotch thistle will continue to be monitored and treated by the Boise District weed program.

Pasture 1: Pasture 1 was partially burned in 1960. In the 1970s, pasture 1 was seeded after a prescribed burn. The pasture is currently host to a mix of shrubs (bitterbrush, rabbitbrush, and sagebrush), perennial grasses (Sandberg bluegrass, crested wheatgrass), forbs, and annual grasses (medusahead, cheatgrass, six-weeks fescue). This pasture is meeting Standard 4. Trend in perennial grasses is generally static, and increases of six-weeks fescue and medusahead have been detected in the recent years.

Pasture 2: Two-thirds of this allotment burned in 1960. Vegetation trend data reflect a low sage canopy and an understory dominated by medusahead, squirreltail, field brome, and bluebunch wheatgrass. Trend in perennial grasses is mostly decreasing with an increase in annual weeds (medusahead, field brome, and North Africa grass). Low sagebrush has a long-term decrease in frequency. Biotic integrity of this pasture is compromised due to the strong presence of invasive annuals and therefore is not meeting Standard 4.

Pasture 3, 4, and 5: All three pastures were burned in 1960. A diversity of shrubs, perennial grasses, and forbs are present in each pasture in amounts similar to reference condition. The exception is the presence of bulbous bluegrass in trace amounts and greater-than-expected juniper presence in pastures 4 and 5. The strong understory of perennial grasses contributes to a stable soil surface. Vegetation trend data show a static to increasing frequency of bluebunch wheatgrass and a recent presence of cheatgrass in pasture 5. Overall biotic integrity of these pastures is being maintained and they are meeting Standard 4.

Elephant Butte Allotment

The dominating presence of non-native annual weeds is the determining factor for evaluating the rangeland health of the Elephant Butte allotment under Standard 6 (Exotic Plant Communities). Fire has affected all pastures except pasture 4. Pasture 1 was mildly affected by fire in the 1980s, with only 3 percent burning. Approximately 18 percent of pasture 3 burned in 2002. Pastures 2 and 5 have had multiple fires throughout several years, with 67 percent and 57 percent of area burned respectively. There is no record of post-fire seeding occurring within the allotment. Invasive annuals dominate the understory of these pastures, with a subdominant overstory of mixed shrubs consisting of Wyoming big sagebrush, shadscale, spiny hopsage, or budsage. Remnant native vegetation is being maintained in pastures 1, 3, 4, and 5, which are meeting Standard 6. Perennial grasses and annual weeds are mostly static, according to trend data, and shrub cover is mostly declining. Pasture 2 is not meeting Standard 6. Recent data show remnant native populations are degrading. Trend data within the native vegetation show a significant increase in cheatgrass in the short term and a static trend in perennial grasses. Shrub cover is decreasing for shadscale saltbush and increasing at one site for low sagebrush. Whitetop is present at one site in pasture 2, has been chemically treated, and will continue to be monitored and treated as a part of the Boise District weed program. This noxious weed site does not play a role in the pasture failing to meet Standard 6.

Ferris FFR Allotment

This allotment consists of three pastures. Pasture 1 is merged with Joint allotment pasture 5. All three pastures are dominated by native vegetation and were evaluated under Standard 4 (Native Plant Communities).

Pastures 1, 2, and 3: All three pastures were affected to varying degrees by a 1960 wildfire. Pastures 1 and 3 burned 70 percent or less, and pasture 2 burned 5 percent. Pastures 1 and 3 have a shrub overstory and understory of bunchgrasses, with interspaces occupied by annual invasive grasses. These two pastures are not meeting Standard 4 due to the minor presence of bunchgrasses and common occurrence of invasive annual grasses such as cheatgrass, North Africa grass, medusahead, and bulbous bluegrass. Pasture 2 is not meeting Standard 4 due to moderate to extreme functional and structural groups and increased invasive annuals. Five sites of whitetop occur in the allotment but are not a contributing factor to the allotment's failure to meet Standard 4. These sites are currently on the Boise District weed program and will continue to be monitored and treated as appropriate.

Franconi FFR Allotment

All three pastures in the Franconi FFR allotment are dominated by native plant communities and are evaluated under Standard 4 (Native Plant Communities).

Pastures 1: Overall, the indicators relating to native plant communities show a slight departure from reference condition. Bulbous bluegrass is common. At the evaluation locations, the native plant communities are supporting proper functioning of ecological processes (i.e., energy and nutrient cycling). Plant vigor and seedstalk production of perennial species is adequate to enable reproduction and recruitment of plants in response to favorable climatic events. At these evaluation locations, there is adequate litter and vegetative cover present for site protection relative to site potential. This pasture is meeting Standard 4. A photo plot monitoring site was established in this allotment in 1989 and was re-evaluated in 2003. The photographs indicate that the native plant community has changed little in terms of species composition and abundance during this 14-year period. The perennial plants appear vigorous and reproductively capable.

Pastures 2 and 3: The 2006 Chubby Spain wildfire burned 57 percent of the BLM lands and was re-seeded with a mixture of shrub, grass, and forb species prior to the 2007 growing season. The dominant visual aspect is grasses and invasive annuals, such as medusahead wildrye, and the allotment is therefore not meeting Standard 4 in these pastures. Trend photos indicate increased invasive annuals.

Jackson Creek Allotment

Of the five pastures in Jackson Creek allotment, pasture 1 is dominated by invasive annual weeds and pastures 2, 3, 4, and 5 are dominated by native plant communities. Therefore pasture 1 was evaluated under Standard 6 (Exotics other than seedlings) and pastures 2, 3, 4, and 5 were evaluated under Standard 4 (Native Plant Communities).

Pasture 1: This pasture does not have any previous fire history. The current dominant vegetation is a mix of annual weeds, North Africa grass, and medusahead, with Sandberg bluegrass and squirreltail as subordinates. This pasture is not meeting Standard 6. Sandberg bluegrass and squirreltail have been on a steady decline since 1990, continuing through 2012. Other perennial grasses are scarce to absent. Annual weeds have increased in the short and long term. Noxious weeds including tamarisk and whitetop have been chemically treated in this pasture and will continue to be monitored and treated as a part of the Boise District weed program. The occurrences of noxious weeds in this pasture do not contribute to the failure to meet the Standard.

Pastures 2, 3, 4, and 5: Pasture 2 has no fire history, pastures 3 and 5 have a minor fire history of 5 percent or less burned area, and one-third of pasture 4 was burned in 1960. No known post-fire seedlings occurred in these pastures. The sites have a dominant shrub overstory (mountain big sagebrush, low sagebrush, snowberry, antelope bitterbrush, rabbitbrush) with Sandberg bluegrass dominating the understory and other larger perennial grasses such as Idaho fescue and bluebunch wheatgrass as subordinates. Annual invasive weeds are not common throughout the pastures but are present in disturbed areas, with some scattered populations. These pastures are meeting Standard 4. Vegetation trend data, only available for pastures 3 and 4, show a relatively static frequency of perennial grasses and shrub cover. The annual weed North Africa grass has increased in pasture 3.

Joint Allotment

Of the five pastures within this allotment, four are managed by BLM (pastures 2, 4, 3, and 5). Pasture 5 is used in conjunction with Ferris FFR. Pastures 2 and 4 are dominated by native vegetation and are evaluated under Standard 4 (Native Plant Communities). Pasture 3 is dominated by a rangeland seeding and is evaluated under Standard 5 (Seedlings). The noxious weed whitetop is present at 15 sites within the allotment. These sites are currently on the Boise District weed program and will continue to be monitored and treated as appropriate.

Pastures 2 and 4: Both pastures burned in the 1960s, pasture 2 just under 50 percent and pasture 4 in entirety. Half of pasture 4 burned again in 2006 and was aerially seeded with a native seed mix. Seeded areas of pasture 4 were noted to be fully successful, according to the Chubby Spain ESR (USDI BLM, 2006). Vegetation photo monitoring for pasture 6 and the unseeded portion of pasture 4 reflects a scattered canopy of mountain sagebrush and bitterbrush with pockets of low sagebrush and rabbitbrush, and an understory of squirreltail, Idaho fescue, bluebunch wheatgrass, and a scattered mix of annual grasses. These two pastures are meeting Standard 4.

Pasture 3: More than 90 percent of pasture 3 burned in 1960 and approximately 7 percent burned in 2006. The site was seeded with intermediate wheatgrass, which currently co-dominates the site with Sandberg bluegrass. This site is not meeting Standard 5. Species diversity is lacking, with the absence of any shrub cover. Annual invasive grasses like North Africa grass, cheatgrass, medusahead, and six-weeks fescue have recently been detected.

Pasture 3 RHFA data indicate that the Chubby Spain fire burned 90 percent of pasture 3, moderate departure for biotic attribute, annual weeds, soil surface loss, litter amount and functional structural group concern. The biotic integrity of pasture 3 is not meeting Standard 4. The pasture 3 community, as represented by the trend site, contains a Dominant Intermediate wheatgrass and Sandberg bluegrass with a trace of medusahead. No shrub component has been recorded on the site.

Lowry FFR Allotment

This is a one-pasture allotment dominated by invasive annual weeds and is not Standard 6 (Exotic plant communities). The community is dominated by low sagebrush and Sandberg bluegrass, as well as invasive annuals and medusahead wildrye. Shrub component is higher than expected.

Madriaga Allotment

Both pastures in the Madriaga allotment are evaluated under Standard 4 (Native Plant Communities). In 1960, one-third of pasture 1 burned. No fires for pasture 2 have been recorded. The majority of pastures 1 and 2 have low shrub cover with a Sandberg bluegrass and an invasive annual understory. Bluebunch wheatgrass and Idaho fescue are a minor component of the community. Both pastures were evaluated under Standard 4 and are not meeting due to high presence of, and increase in, annual invasive grasses. Shrub interspaces are dominated by Sandberg bluegrass and annual invasive grasses such as North Africa grass, bulbous bluegrass, and cheatgrass. Most recent data show an increase in North Africa grass, medusahead, bulbous bluegrass, and field brome. Trend data also reflect a recent decline in low sagebrush density. The noxious weed whitetop is present at five sites within the allotment. These sites are currently on the Boise District weed program and will continue to be monitored and treated as appropriate.

Poison Creek Allotment

In 2002, approximately 75 percent of this single-pasture allotment was burned by wildfire, and was subsequently reseeded with a shrub/perennial grass mixture. The majority of the allotment is a healthy, productive, vigorous seeding (USDI BLM, 2005) and therefore has been evaluated under Standard 5 (Seedings), which it is meeting. The diversity of species within the seeding is as expected, with perennial grasses dominating and trace amounts of shrubs and forbs. Trend data depict an expected decrease in shrub component and native perennial grasses post-fire, with an increased frequency of seeded grasses. In addition, invasive annual weeds have an increased presence post-fire but appear to be only lightly scattered throughout the seeding. The remaining native plant community is a sagebrush-dominated overstory with interspatial Sandberg bluegrass, squirreltail, and bluebunch wheatgrass. Species diversity is good, even though shrub cover is higher than expected. Noxious weeds within the allotment include

seven different species (Table VEG-7). All are part of the Boise District weed program and will continue to be monitored and treated.

R Collins FFR Allotment

This one-pasture allotment is dominated by native plant communities and is meeting Standard 4 (Native Plant Communities). The dominant visual aspect is sagebrush overstory and bluebunch wheatgrass understory that resembles reference site conditions. Healthy, productive, and diverse 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. Plant vigor, including total plant production, seed and seedstalk production, and cover are adequate to enable reproduction and recruitment of plants in response to favorable climatic conditions.

Texas Basin FFR Allotment

This one-pasture allotment is dominated by native plant communities and is meeting Standard 4 (Native Plant Communities). The dominant visual aspect is a sagebrush overstory and Sandberg bluegrass and bluebunch wheatgrass understory, with shrub cover higher than expected and scattered cheatgrass. Although bluebunch wheatgrass vigor appears to be reduced, seedhead production of Sandberg bluegrass is observed. Little recruitment of interspatial bluebunch wheatgrass plants is observed.

Rats Nest Allotment

Approximately 57 percent of this allotment has been affected by wildfire since the 1970s. This allotment is predominately a sagebrush overstory with a Sandberg bluegrass understory. Invasive annual grass species are present in trace amounts. Although the RHFA data only indicate a slight to moderate reduction in deep-rooted bunchgrasses, the trend data identify an apparent decrease in deep-rooted bunchgrasses and shrub density at all sites and an increase of invasive annual weeds at half of the sites. Standard 4 (Native Plant Communities) is not met on Rats Nest allotment. Russian olive and tamarisk are present in the northernmost portion of the allotment. These sites are currently on the Boise District weed program monitoring and treatment program and will continue to be treated in the future.

Sands Basin Allotment

Of the four pastures in the Sands Basin allotment, pastures 1 and 2 are dominated by range seedings, and pasture 4 is dominated by native plant communities. Much of pasture 3 has been seeded, but both the seeded and unseeded areas have been substantially invaded by annual grasses. Therefore, pastures 1 and 2 were evaluated under Standard 5 (Seedings), pasture 3 was evaluated under Standard 6 (Exotic Plant Communities) and pasture 4 was evaluated under Standard 4 (Native Plant Communities).

Pastures 1 and 2: Most of pasture 1 burned in 1960 and was aerially seeded. A majority of pasture 2 was burned and drill seeded with crested wheatgrass in the early 1980s. In pasture 1, Wyoming big sagebrush and rabbitbrush are dominant, with crested wheatgrass between shrubs. Few forbs and native grasses are present. Pasture 2 has a diversity of native perennial shrubs, forbs, and grasses intermixed with crested wheatgrass. Cheatgrass is found in patches on one side of the pasture. These pastures are meeting Standard 5 (Seedings). Vegetation trend data reflect a scattered canopy of big sagebrush with pockets of low sagebrush, and an understory dominated by Sandberg bluegrass, squirreltail, bluebunch wheatgrass, and crested wheatgrass. In pasture 1, trend in perennial grasses is mostly static, but an increased occurrence of cheatgrass has been detected in recent years. In pasture 2, both bluebunch wheatgrass and crested wheatgrass have declined since 1988, while Sandberg bluegrass has remained stable, and density and frequency of shrubs, including Wyoming big sagebrush, low sagebrush and rabbitbrush have increased. Noxious weeds including tamarisk, Canada thistle, and Scotch thistle have been chemically

treated in this pasture and will continue to be monitored and treated as a part of the Boise District weed program.

Pasture 3: In 2002, this pasture burned almost in entirety and was seeded following the fire. However, since treatment, this pasture has been substantially invaded by annual weeds, which are now the dominant vegetation in much of the pasture. While there are some inclusions of intact seedings and native communities within pasture 3, the biotic integrity of the pasture has been dramatically compromised due to the dominance of exotic annual species. This pasture is meeting Standard 6 (Exotic Plant Communities, other than Seedings). Species diversity is low, with trend data reflecting a decline in perennial grasses and shrubs and an increase in annual grasses. Noxious weeds, including Canada thistle and Russian olive (invasive), have been chemically treated in this pasture and will continue to be monitored and treated as a part of the Boise District weed program.

Pasture 4: Pasture 4 was evaluated under Standard 4 (Native Plant Communities) and is not meeting the Standard. The majority of this pasture burned in the 1960s and was subsequently seeded with crested wheatgrass. The 2002 Trimby fire affected approximately 15 percent of the pasture, which was treated with a native seed mix. The existing condition for most of the pasture is dominated by a sagebrush/rabbitbrush overstory and Sandberg bluegrass, with invasive annuals scattered throughout the understory, according to the Trimby Fire ESR (USDI BLM, 2005). Trend data show a decline for sagebrush, bluebunch wheatgrass and squirreltail, but an increased occurrence of rabbitbrush has been detected in the most recent years. Noxious weeds, including puncture vine, purple loosestrife, and whitetop, have been chemically treated in this pasture and will continue to be monitored and treated as a part of the Boise District weed program.

Stanford FFR Allotment

This one-pasture allotment is dominated by native plant communities and is not meeting Standard 4 (Native Plant Communities). The rangeland health assessment was conducted in a Shallow Claypan 11-13" ecological site; the main indicators relating to biotic integrity that are affecting the site are the functional and structural group. The site has transitioned to one dominated by annuals and lacks a deep-rooted cool-season bunchgrass component. The reference native plant community for this site is low sagebrush/bluebunch wheatgrass. Bluebunch wheatgrass is present in trace amounts and both bluebunch wheatgrass and squirreltail are primarily isolated under shrub canopy.

Soda Creek Allotment

All four pastures in the Soda Creek allotment are dominated by native plant communities and are therefore evaluated under Standard 4 (Native Plant Communities). The ecological potential for all pastures is dominated by a mountain sagebrush overstory and bluebunch wheatgrass understory. The 1996 Cow Creek fire burned approximately 30 percent of pasture 2, 90 percent of pasture 3, and 50 percent of pasture 4; the other half of pasture 4 was burned by the 2006 Chubby Spain fire and was rested from grazing from 2007 to 2010. The 2009 monitoring report noted that the seedings had been fully successful and livestock grazing was resumed the following year. The site was reported at good canopy and basal cover, and correspondingly low susceptibility to wind or water erosion, according to the Chubby Spain ESR (USDI BLM, 2006). This whole allotment is at risk for invasive annuals because of the fires.

Pasture 1: Pasture 1 was evaluated under Standard 4 (Native Plant Communities) and was found to be meeting the Standard. The RHFA indicate functional structural group have good vigor age class and recruitment and the biotic integrity is meeting the Standard.

Pasture 2: Pasture 2 was evaluated under Standard 4 (Native Plant Communities), and found to meeting the standard. The functional structural groups are higher than expected, and Sandberg bluegrass and bluebunch wheatgrass dominate the interspaces. Idaho fescue and juniper are scattered throughout the pasture, and bulbous bluegrass is common. The biotic integrity of pasture 2 is meeting Standard 4.

Pastures 3, 5 and 7: These three pastures are grazed separately but were evaluated as one pasture. Functional structural groups are off slightly due to Wyethia dominating the understory. Bluebunch wheatgrass has shown a short-term increase and long-term decrease in frequency. Idaho fescue has shown a decrease and squirreltail has shown a short-term increase and long-term decrease in frequency since it was first recorded. Sandberg bluegrass, cheatgrass, and bulbous bluegrass show an increase in frequency. Medusahead is starting to appear on the site. The biotic integrity of pasture 3 is meeting Standard 4, based on evaluation of trend data.

Trout Creek Allotment

Pastures 1, 2, and 3 have a dominance of native species and are evaluated under Standard 4 (Native Plant Communities). Wildfire has affected minor portions of pasture 1 (6 percent) and pasture 2 (20 percent), with pasture 3 remaining fire-free. Low sagebrush dominates the overstory, and perennial grasses and annual invasive grasses co-dominate in the understory. These pastures are not meeting Standard 4 due to the presence of annual invasive grasses and their increasing occurrence. Vegetation trend data reflect a generally static frequency of perennial grasses, with some species slightly decreasing or increasing in the short term. Medusahead, North Africa grass, and field brome appear to be the main increasing annual grasses. Density of low sagebrush is also on the decline. Noxious weeds including Scotch thistle (six sites) and whitetop (two sites) are present in the allotment and are currently part of the Boise District weed program, through which they will continue to be monitored and treated.

Trout Creek/Lequerica

This two-pasture allotment has a dominance of native species and is evaluated under Standard 4 (Native Plant Communities). Historical plant communities at these sites were dominated by mountain and low sagebrush overstory with an understory of bluebunch wheatgrass and Idaho fescue. Current condition, as described below using RHFAs and trend data, has been altered as a result of past fires and various land management activities.

Pasture 1: The community, as represented by the photo site, is dominated by antelope bitterbrush, Wyoming Big sagebrush and western juniper. Bluebunch wheatgrass, Idaho fescue, and Sandberg bluegrass make up the interspaces with scattered forbs. RHFAs show none-to-slight departure from the expected plant community and is therefore meeting Standard 4.

Pasture 2: The shrub component is too high, and low vigor of bunchgrasses occurs. There is a moderate departure from expected conditions due to invasive juniper on the site. The biotic integrity of pasture 2 is meeting Standard 4. The community, as represented by the photo site, is dominated by antelope bitterbrush and big sagebrush. Western wheatgrass and basin wildrye with scattered cheatgrass and forbs make up the interspaces.

Current Livestock Grazing Management

Allotment grazing management rotation schedules implemented since 1997 are described below by allotment. The tables below show the latest decision or allotment management plan (AMP) that describes rotations; in some cases, these decisions do not represent is the current management. In those cases, an additional table was created for the allotment to display the latest rotation that reflects the actual use reports as submitted by permittees (Appendix C). On allotments where no grazing rotation schedule has

been developed (i.e., one-pasture allotments), the BLM would continue to authorize use on a yearly basis following mandatory terms and conditions, as stated on the permit.

Fenced Federal Range Allotments

An FFR is a small amount of public land fenced with a large amount of private land (ORMP). The number of livestock and the season of use are described as 12/1 through 12/31; however, the allotment can be used any time of year at the discretion of the permittee, with authorized officer's prior approval. Utilization of key forage plants is not to exceed 50 percent of annual production. FFR allotments include Corral Creek FFR, Chipmunk Field FFR, Texas Basin FFR, Burgess FFR, Chimney Pot FFR, Ferris FFR, Lowry FFR, R. Collins FFR, and Stanford FFR. Although the Franconi allotment is described in the ORMP as an allotment, it is actually managed as an FFR, as described in the permit. The FFRs will not be described in a table below because no additional livestock grazing management activities are currently authorized other than mandatory terms and conditions.

Alkali-Wildcat Allotment

Table ALLOT-1 describes the grazing management from the 2002 Decision on the allotment. Livestock numbers and season may vary with prior BLM approval as long as total AUMs in each pasture are not exceeded annually. Actual use reports submitted between 1998 and 2011 indicate that AUMs have ranged from 179 to 602 and average actual use on the allotment was 312 AUMs.

Table ALLOT-1: Alkali-Wildcat allotment grazing schedule (2002 Decision)

Pasture	Year 1	Year 2
Pasture 1 (623 AUMs)	4/1-5/31	4/1-5/31

Baxter Basin Allotment

Table ALLOT-2 describes the grazing management on the allotment in accordance with the 1991 Decision. In addition to the grazing rotation, the following livestock grazing management flexibility and allotment management objectives were included: Utilization of key forage plants may not exceed 50 percent of annual production.

Table ALLOT-2: Baxter Basin allotment three-pasture rest-rotation grazing system (1991 Decision)

Pasture	Year 1	Year 2	Year 3
Pasture 1 (35% active preference)	4/16-5/4	5/7-5/26	Rest
Pasture 2 (28% active preference)	5/5-5/20	Rest	4/16-5/1
Pasture 3 (37% active preference)	Rest	4/16-5/6	5/2-5/22

However, livestock grazing management between 1997 and 2011, in accordance with actual use reports, has varied in comparison with the 1991 Decision (Table ALLOT-3). Changes have been made in the turn-in and -out dates for livestock by pasture. Actual use reports submitted between 1997 and 2011 indicate that AUMs have ranged from 191 to 428 and average actual use was 326 AUMs for the allotment.

Table ALLOT-3: Baxter Basin allotment three-pasture rest-rotation grazing system, as described in actual use reports (Appendix B)

Pasture	2009	2010	2011
Pasture 1	Rest	5/15-6/5	Rest
Pasture 2	5/13-6/1	Rest	5/10-6/5
Pasture 3	4/2-5/12	4/15-5/14	4/10-5/9

Blackstock Springs Allotment

Table ALLOT-4 describes the grazing management on the allotment from the 1984 Allotment Management Plan (AMP). Dates are approximate and may vary according to fluctuations in climatic conditions and utilization. Flexibility would be allowed on the allotment if mutually agreed upon by the permittees and approved by the Field Office Manager; spring use may begin as early as May 1. Utilization levels on crested wheatgrass may not exceed 50 percent in the seeded portion of pasture 1. After seed ripe (July 21), pasture rotations may be at the discretion of the permittees, not to exceed the specified utilization levels of the key forage grasses. However, since the AMP was finalized, the allotment has been divided into three pastures and has been authorized on an annual basis, as described in Table ALLOT-6.

Table ALLOT-4: Blackstock Springs allotment two-pasture grazing system (1984 AMP)

Pasture	Year 1	Year 2	Year 3
Pasture 1	5/21 ² -7/20 & 10/1-11/15 ¹	5/21-5/31 8/15-11/15 ¹	5/21-7/20 10/1-11/15 ¹
Pasture 2	7/21 with 50% utilization & 10/1-10/15	6/1-8/15	7/21 with 50% utilization & 10/1-10/15

¹Fall use in pasture 1 is subject to grazing conditions and 50 percent utilization. Pasture 2 should be used from 10/1 to 10/15. Fall use of pasture 1 will begin no earlier than 10/1.

²Permit issued for 5/1 to 11/18

However, livestock grazing management between 1997 and 2011, in accordance with actual use reports, has varied in comparison with the 1984 Blackstock Springs AMP (Table ALLOT-5). Changes include the creation of pasture 3 and changes in the turn-in and -out dates for livestock by pasture. Actual use reports submitted between 1997 and 2011 indicate that AUMs have ranged from 1,841 to 2,248 and average actual use was 2,105 AUMs for the allotment.

Table ALLOT-5: Blackstock Springs allotment three-pasture grazing system, as described in actual use reports (Appendix B)

Pasture	2009	2010	2011
Pasture 1	5/1-7/14 10/1-11/15 ¹	5/1-7/14 10/19-11/20 ¹	5/2-7/11 10/15-11/14 ¹
Pasture 2	6/10-8/3	9/14-10/19	7/11-8/23
Pasture 3	8/4-10/7	7/14-9/14	8/24-10/14

¹Fall use in pasture 1 subject to grazing conditions.

Burgess Allotment

Table ALLOT-6 describes the grazing management on the allotment in accordance with the 1982 Decision. In addition to the grazing rotation, the following livestock grazing management flexibility and allotment management objectives were included: Utilization of key forage plants may not exceed 50 percent of annual production. Dates of use vary, depending on climatic conditions and availability of the key forage species.

Table ALLOT-6: Burgess allotment two-pasture deferred grazing system (1982 Decision)

Pasture	Year 1	Year 2
Pasture 1 (22% active preference)	5/1-6/14	8/4-9/17
Pasture 2 (63% active preference)	6/15-9/17	5/1-8/3

However, livestock grazing management between 1997 and 2011, in accordance with actual use reports, has varied in comparison with the 1982 Decision (Table ALLOT-7). Changes have been made in the turn-

in and -out dates for livestock by pasture. Actual use reports submitted between 1997 and 2011 indicate that AUMs have ranged from 153 to 267 and average actual use was 231 AUMs for the allotment.

Table ALLOT-7: Burgess allotment two-pasture grazing system, as described in actual use reports (Appendix B)

Pasture	2009	2010	2011
Pasture 1	4/16-5/18	4/16-5/20	4/16-5/22
Pasture 2	5/19-8/16	5/21-8/16	5/23-8/16

Cow Creek Allotment

Table ALLOT-8 describes the grazing management on the allotment in accordance with the 1986 Decision. In addition to the grazing rotation, the following livestock grazing management flexibility and allotment management objectives were included: Utilization on pasture 1 may not exceed 50 percent of annual production for 2 of 3 years and 30 percent on the third year; native pastures will be utilized at 30 percent. Dates of use vary, depending on climatic conditions and availability of the key forage species.

Table ALLOT-8: Cow Creek allotment five-pasture grazing system (1986 Decision)

Pasture	Year 1	Year 2	Year 3
Pasture 1	4/1-5/31	4/1-5/31 ¹	6/1-6/30 ²
Pasture 2	4/1-6/30	4/1-6/30 ¹	6/1-6/30
Pasture 3	4/25-5/8 & 7/1-7/15	4/25-5/8 & 7/1-7/15	4/25-5/8 & 7/1-7/15
Pasture 4	5/9-8/31	5/9-8/31	5/9-8/31
Pasture 5	6/1-9/30	6/1-9/30	6/1-9/30

¹Graze in seeding first until desired utilization is reached, then move to native vegetation;

²May bypass and make after seed ripe use until snow

However, livestock grazing management between 1997 and 2011, in accordance with actual use reports, has varied in comparison with the 1986 Decision (Table ALLOT-9). Since the Decision, the allotment was split into a five-pasture grazing system and changes were made in the turn-in and -out dates for livestock by pasture. Actual use reports submitted between 2000 and 2011 indicate that AUMs have ranged from 871 to 1,234 and average actual use was 1,188 for the allotment.

Table ALLOT-9: Cow Creek allotment five-pasture grazing system, as described in actual use reports (Appendix B)

Pasture	2011
Pasture 1	4/7-5/1
Pasture 2	5/2-6/18
Pasture 3	7/2-7/15
Pasture 4	6/10-9/15
Pasture 5	7/2-9/22

Elephant Butte Allotment

Table ALLOT-10 describes the grazing management from the 2002 Decision on the allotment. Livestock numbers and season may vary with prior BLM approval as long as total AUMs in each pasture are not exceeded annually. Actual use reports submitted between 1997 and 2011 indicate that AUMs have ranged from 179 to 531 and average actual use was 320 AUMs for the allotment.

Table ALLOT-10: Elephant Butte allotment grazing schedule (2002 Decision)

Pasture	Year 1	Year 2	Year 3
Pasture 1 (131 AUMs)	4/1-5/16	12/1-1/31	5/1-5/31
Pasture 2 (98 AUMs)	12/1-1/31	4/21-5/31	4/1-4/30
Pasture 3 (57 AUMs)	5/17-5/31	4/1-4/20	12/1-1/31
Pasture 4 (32 AUMs)	12/10-12/31	3/15-3/31	12/10-12/31
Pasture 5 (94 AUMs)	3/15-4/16	12/1-1/31	3/15-4/16

A spring-deferred rotation grazing system is implemented for pastures 1, 2 and 3, and a separate deferred rotation for pastures 4 and 5.

Jackson Creek Allotment

Table ALLOT-11 describes the grazing management on the allotment in accordance with the 1982 Decision. In addition to the grazing rotation, the following livestock grazing management flexibility and allotment management objectives were included: Utilization of key forage plants may not exceed 50 percent of annual production.

Table ALLOT-11: Jackson Creek allotment three-pasture rest-rotation and two-pasture deferred grazing system (1982 Decision)

Pasture	Year 1	Year 2	Year 3
Pasture 1	Rest	4/16-5/5	5/15-5/30
Pasture 2	4/16-5/11	5/6-5/30	Rest
Pasture 3	5/12-5/30	Rest	4/16-5/14
Pasture 4	6/1-8/15	8/16-11/15	6/1-8/15
Pasture 5	8/16-11/15	6/1-8/15	8/16-11/15

However, livestock grazing management between 1997 and 2011, in accordance with actual use reports, has varied in comparison with the 1982 Decision (Table ALLOT-12). Changes have been made in the turn-in-and-out dates for livestock by pasture. Actual use reports submitted between 1997 and 2011 indicate that AUMs have ranged from 837 to 1,233 and average actual use was 1,142 for the allotment.

Table ALLOT-12: Jackson Creek allotment three-pasture rest-rotation and two-pasture grazing system as described in actual use reports (Appendix B)

Pasture	2008	2009	2010	2011
Pasture 1	4/8-5/18	4/13-4/23	4/18-6/1	4/26-5/5
Pasture 2	5/19-6/19	6/14-6/23	6/2-6/15	6/5-6/21
Pasture 3	Rest	4/24-6/13	No Data	5/6-6/4
Pasture 4	6/4-11/5	6/24-10/31	6/18-10/31	6/22-10/31
Pasture 5	6/4-11/5	6/24-10/31	6/18-10/31	6/22-10/31

Joint Allotment

Table ALLOT-13 describes the grazing management on the allotment, in accordance with the 1986 Decision. In addition to the grazing rotation, the following livestock grazing management flexibility and allotment management objectives were included: Utilization on key forage plants may not exceed 50 percent of annual production. Dates of use vary, depending on climatic conditions and availability of the key forage species.

Table ALLOT-13: Joint allotment four-pasture grazing system (1986 Decision)

Pasture	Year 1	Year 2	Year 3
Pasture 1	7/1-9/15	4/16-5/30	7/1-8/15
Pasture 2	6/16-7/15	6/1-6/30	4/16-5/30
Pasture 3	5/8-6/15	8/1-6/30	8/16-9/15
Pasture 4	4/16-5/7-10	7/1-7/31	6/1-6/30

However, livestock grazing management between 1997 and 2011, in accordance with actual use reports, has varied in comparison with the 1986 Decision (Table ALLOT-14). Since the Decision, the allotment was split into a three-pasture grazing system and changes were made in the turn-in and -out dates for livestock by pasture. Actual use reports submitted between 200 and 2011 indicate that AUMs have ranged from 293 to 1,061 and average actual use was 615 AUMs for the allotment.

Table ALLOT-14: Joint allotment three-pasture grazing system, as described in actual use reports (Appendix B)

Pasture	2009	2010	2011
Pasture 2	6/6-7/18	6/12-6/24	6/1-7/12
Pasture 3	4/25-6/5	4/17-6/11	4/26-5/31
Pasture 4	Rest	ND	7/13-8/15

Madriaga Allotment

Table ALLOT-15 describes the grazing management on the allotment, in accordance with the 1986 Decision. In addition to the grazing rotation, the following livestock grazing management flexibility and allotment management objectives were included: Utilization on key forage plants may not exceed 50 percent of annual production. Dates of use may vary, depending on climatic conditions and availability of the key forage species.

Table ALLOT-15: Madriaga allotment one-pasture grazing system (1986 Decision)

Pasture	Year 1	Year 2	Year 3
Pasture 1	6/16-7/15	6/1-6/30	8/16-9/15

However, livestock grazing management between 1997 and 2011, in accordance with actual use reports, has varied in comparison with the 1986 Decision (Table ALLOT-16). Since the Decision, the Madriaga allotment was converted to a two-pasture grazing system that uses a temporary hotwire fence in pasture 1 to better manage the pasture; consequently, actual use was reported for three pastures instead of two. In addition, changes in the turn-in and -out dates for livestock by pasture have occurred. Actual use reports submitted between 1998 and 2011 indicate that AUMs have ranged from 183 to 908 and average actual use was 574 AUMs for the allotment.

Table ALLOT-16: Madriaga allotment three-pasture grazing system, as described in actual use reports (Appendix B)

Pasture	2009	2010	2011
Pasture 1	5/9-6/19	4/16-7/3	4/17-6/17
Pasture 2	6/20-8/22	6/16-8/28	6/18-8/20
Pasture 3	8/23-9/13	8/7-9/30	8/21-8/27

Poison Creek Allotment

The grazing schedule identified in table ALLOT-17 describes the 2002 Decision for the single pasture in the Poison Creek allotment. Additionally, the allotment is used in the fall for a few days at a time while

trailing cattle or sheep to the Homedale, Idaho, area. Actual use reports submitted between 1997 and 2011 indicate that AUMs have ranged from 269 to 742 and average actual use was 474 AUMs for the allotment.

Table ALLOT-17: Poison Creek grazing schedule (2002 Decision)

Year	Date
1	4/1-5/31

Rats Nest Allotment

Table ALLOT-18 describes the grazing management from the 2002 Decision on the allotment. Grazing occurs from 4/1 to 5/31 in alternate years. Livestock numbers and season may vary with prior BLM approval as long as total AUMs in each pasture are not exceeded annually. Actual use reports submitted between 1997 and 2011 indicate that AUMs have ranged from 251 to 605 and average actual use was 458 AUMs for the allotment. Although Table ALLOT-19 shows every other year as rest, no rest has occurred on the allotment, per the 2002 partial stay.

Table ALLOT-18: Rats Nest allotment grazing schedule (2002 Decision)

Pasture Name	Year 1	Year 2
Pasture 1 (428 AUMs)	4/1-5/31 ¹	Rest

¹Permit is issued from 4/1 to 5/27.

Sands Basin Allotment

Table ALLOT-19 describes the grazing management in accordance with the 2002 Decision on the allotment. In addition to the grazing rotation, the following grazing management flexibility was included: livestock grazing is authorized in the spring from 4/1 to 6/05 with cow/calf pairs, and in the fall from 10/1 to 10/10 with dry cows or yearlings annually. Livestock numbers and season may vary with prior BLM approval as long as total AUMs in each pasture are not exceeded annually.

Table ALLOT-19: Sands Basin allotment grazing schedule (2002 Decision)

Pasture	Year 1	Year 2
Pasture 1 (190 AUMs)	4/1-4/20	4/11-4/30
Pasture 2 (409 AUMs)	5/1-5/20 10/1-10/10 ¹	5/17-6/5 10/1-10/10 ¹
Pasture 3 (80 AUMs)	4/21-4/30	4/1-4/10
Pasture 4 (320 AUMs)	3/21-6/5	5/1-5/16

¹Fall grazing in pasture 2 may occur with dry cows or yearlings only.

However, livestock grazing management between 1997 and 2011, in accordance with actual use reports, has varied in comparison with the 2002 Decision (Table ALLOT-20). Changes were made in the turn-in and -out dates for livestock by pasture. Actual use reports submitted between 1997 and 2011 indicate that AUMs have ranged from 750 to 994 and average actual use was 883 AUMs for the allotment.

Table ALLOT-20: Sands Basin allotment grazing schedule, in accordance with actual use reports (Appendix B)

Pasture	2007	2008	2009	2010	2011
Pasture 1	3/31-4/30	4/1-5/1	4/1-4/10 10/8-10/12	4/1-5/15	4/3-4/24
Pasture 2	10/28-11/6	5/2-6/6 10/28-11/6	3/11-4/25 10/1-10/7 10/13-10/31	5/16-6/6 10/29-10/31	5/1-6/7 11/6-11/7
Pasture 3	4/1-4/30	4/2-5/4	4/1-4/30	4/1-4/30	4/2-4/30
Pasture 4	5/1-5/24	5/5-6/2 11/8-11/10	5/1-5/30	5/1-6/3	4/25-6/4

Soda Creek Allotment

Table ALLOT-21 describes the grazing management on the allotment in accordance with the 1988 Decision for grazing management. In addition to the grazing rotation, the following livestock grazing management flexibility and allotment management objectives were included: Utilization on key forage plants may not exceed 50 percent of annual production. Dates of use may vary, depending on climatic conditions and availability of the key forage species.

Table ALLOT-21: Soda Creek two-pasture grazing system (1988 Decision)

Pasture	Year 1	Year 2
Pasture 1	Summer- 6/1 to 50% use	Fall- 8/1 to 50% use
Pasture 2	6/2-7/14	ND

However, livestock grazing management between 2000 and 2011, in accordance with actual use reports, has varied in comparison with the 1988 Decision (Table ALLOT-22). Since the Decision, the allotment was split into a four-pasture grazing system, and changes were made in the turn-in and -out dates for livestock by pasture. Actual use reports submitted between 2000 and 2011 indicate that AUMs have ranged from 177 to 711 and average actual use was 431 AUMs for the allotment.

Table ALLOT-22: Soda Creek four-pasture grazing system, as described in actual use reports (Appendix B)

Pasture	2008	2009	2010	2011
Soda Creek 1	ND	7/15-10/13	6/1-7/13	6/6-7/6
Soda Creek 5	6/2-7/14	ND	ND	9/23-10/2
Soda Creek 2	6/1-7/13	6/1-7/15	6/5-7/13	6/5-7/1
Soda Creek 3	7/14-9/18	6/2-7/15	7/14-9/17	7/7-9/23

Trout Creek Allotment

Table ALLOT-23 describes the grazing management on the allotment in accordance with the 1981 Decision. In addition to the grazing rotation, the following livestock grazing management flexibility and allotment management objectives were included: Utilization on key forage plants may not exceed 50 percent of annual production. Dates of use may vary, depending on climatic conditions and availability of the key forage species.

Table ALLOT-23: Trout Creek three-pasture grazing system (1981 Decision)

Pasture	Year 1	Year 2	Year 3
Pasture 1	5/21-7/10 ¹	8/16-9/30	7/1-8/20
Pasture 2	7/11-8/31	5/27-7/10 ¹	8/21-9/30
Pasture 3	9/1-9/30	7/11-8/15	5/23-6/30 ¹

¹Earlier use may be allowed, but movement into the second pasture may not occur earlier than specified above.

However, livestock grazing management between 1997 and 2011, in accordance with actual use reports, has varied in comparison with the 1981 Decision (Table ALLOT-24). Changes have been made in the turn-in and -out dates for livestock by pasture. Actual use reports submitted between 1997 and 2011 indicate that AUMs have ranged from 240 to 725 and average actual use was 342 AUMs for the allotment.

Table ALLOT-24: Trout Creek three-pasture grazing system as described in actual use reports (Appendix B)

Pasture	2008	2009	2010	2011
Pasture 1	ND	5/15-8/15	5/17-8/14	5/16-8/14
Pasture 2	4/2-4/20	4/1-5/14	4/1-5/15	4/1-5/15
Pasture 3	8/15-9/2	8/16-10/1	8/15-9/12	8/15-9/12

Trout Creek/Lequerica Allotment

Table ALLOT-25 describes the grazing management on the allotment in accordance with the 1984 Decision for grazing management. In addition to the grazing rotation, the following livestock grazing management flexibility and allotment management objectives were included: Utilization on key forage plants may not exceed 50 percent of annual production. Dates of use may vary, depending on climatic conditions and availability of the key forage species.

Table ALLOT-25: Trout Creek/Lequerica allotment two-pasture grazing system (1984 Decision)

Pasture	Year 1	Year 2
Pasture 1	Summer: 6/25 to 50% use	Fall: 7/16 to 50% use
Pasture 2	Fall: 7/16 to 50% use	Summer: 6/25 to 50% use

However, livestock grazing management between 1997 and 2011, in accordance with actual use reports, has varied in comparison with the 1984 Decision (Table ALLOT-26). Changes have been made in the turn-in and -out dates for livestock by pasture. Actual use reports submitted between 1997 and 2010 indicate that AUMs have ranged from 68 to 131 and average actual use was 103 AUMs for the allotment.

Table ALLOT-26: Trout Creek/Lequerica allotment three-pasture grazing system, as described in actual use reports (Appendix B)

Pasture	2008	2009	2010	2011
Pasture 1	7/19-10/1	6/20-9/13	6/20-8/18	ND
Pasture 2	7/3-7/18	9/14-10/4	8/19-9/27	ND

Livestock Trailing

Trailing, or moving animals across federal, state, or private land, is a component of regular grazing management practices in the Chipmunk Group allotments. Livestock are primarily actively trailed on the existing roads, where no or limited forage is consumed and the trailing occurs for short durations. For the majority of situations, trailing activities have not been documented, nor are they expected to substantially affect resources. Thus, they are not affecting the ability of these allotments to meet or make significant progress toward meeting Standards. For specific livestock routes, see Map RNGE-4 Trailing.

The timing of specific trailing events varies annually based on factors such as forage production, drought, resource conditions, weather, wildfire, court decisions, and individual livestock operations across the Owyhee Mountains. Livestock trailing effects are analyzed over a 10-year period and referenced to the 2012 Trailing EA (USDI BLM, 2012b). Table ALLOT-28 describes the new trailing routes and miles by route and allotment.

Table ALLOT-28: Trailing/Crossing miles by allotment and material crossed (new routes that were not analyzed in the 2012 trailing EA)

Route and Allotment	Kind of Livestock	Gravel	Native Material	Paved	Unknown/No Data	Grand Total
Boulder Flat Route		6.04	5.70	2.91	11.13	25.78
Baxter Basin	sheep				0.68	0.68
Berrett FFR		0.49	0.36			0.85
Boulder			1.37		0.41	1.79
Boulder Flat					2.83	2.83
Cow Creek Individual					6.24	6.24
Glass Creek		1.55	0.29		0.07	1.91
Gusman		0.05		2.01	0.23	2.29
Jordan Creek FFR				0.61		0.61
Lower Deer Creek			1.29		0.52	1.80
Lowry FFR				0.29		0.29
Morgan		3.38	0.22		0.16	3.76
Upper Deer Creek			2.08			2.08
Walt's Pond FFR		0.56	0.09			0.65
Rats Nest Route			4.02			4.02
Rats Nest	cattle		4.02			4.02
Rockville Route			9.43	0.10	3.92	13.45
Corral Creek FFR	cattle		0.33			0.33
Rockville			9.10	0.10	3.92	13.12
Strodes Basin Route			3.52		0.86	4.38
Strodes Basin	cattle		3.52		0.86	4.38
Grand Total		6.04	22.67	3.01	15.91	47.63

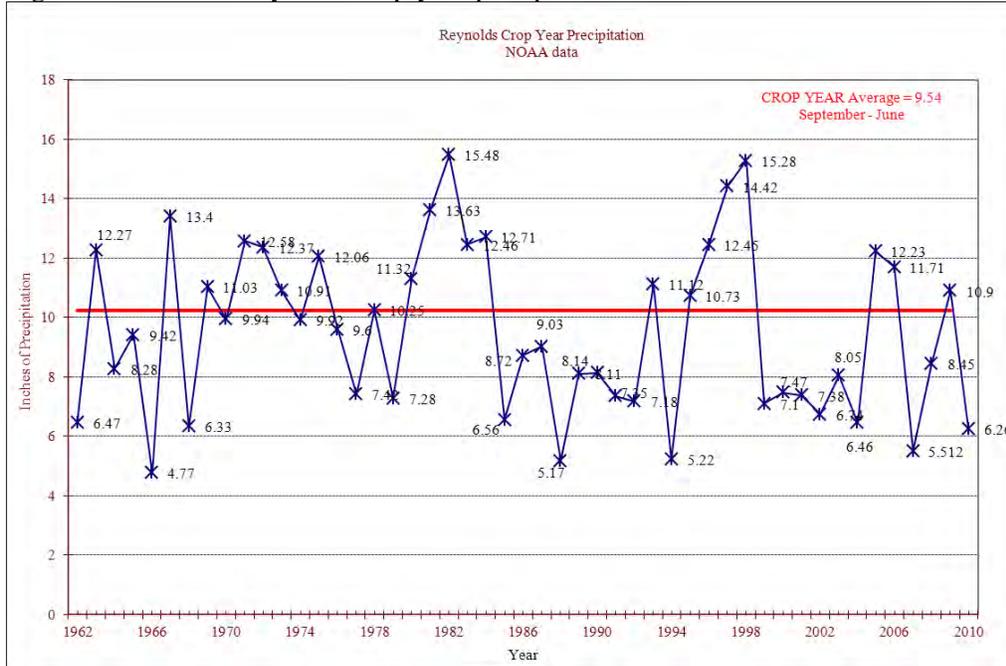
Allotment and Pasture	GIS Acreage Calculations				Standard 4 Native Plant Communities		Standard 5 Seedlings		Standard 6 Exotic Plant Communities	
	BLM	Private	State	Total	Meeting	Not Meeting	Meeting	Not Meeting	Meeting	Not Meeting
1	1677	1512	3	3192	0	0	0	0	1677	0
2	1734	168	21	1923	0	0	0	0	0	1734
3	2122	257	0	2380	0	0	0	0	2122	0
4	453	269	0	722	0	0	0	0	453	0
5	953	5	0	958	0	0	0	0	953	0
Ferris FFR										
1	393	759	0	1152	0	393	0	0	0	0
2	121	154	0	275	121	0	0	0	0	0
3	537	1179	0	1716	0	537	0	0	0	0
Franconi										
1	82	162	0	244	82	0	0	0	0	0
2	196	656	0	852	0	196	0	0	0	0
3	351	613	0	964	0	351	0	0	0	0
Jackson Creek										
1	1375	30	0	1405	0	0	0	0	0	1375
2	601	0	0	601	601	0	0	0	0	0
3	1181	210	0	1391	1181	0	0	0	0	0
4	2050	656	1154	3859	2050	0	0	0	0	0
5	618	309	2586	3513	618	0	0	0	0	0
Joint										
2	1598	22	0	1620	1598	0	0	0	0	0
3	1055	97	0	1152	0	0	0	1055	0	0
4	474	18	954	1446	474	0	0	0	0	0
Lowry FFR	37	229	0	266	0	0	0	0	37	0
Madriaga										
1	2576	116	0	2692	0	2576	0	0	0	0
2	1379	35	0	1414	0	1379	0	0	0	0
Poison Creek	5244	37	0	5280	0	0	5244	0	0	0
R Collins FFR	102	333	0	435	102	0	0	0	0	0

Allotment and Pasture	GIS Acreage Calculations				Standard 4 Native Plant Communities		Standard 5 Seedlings		Standard 6 Exotic Plant Communities	
	BLM	Private	State	Total	Meeting	Not Meeting	Meeting	Not Meeting	Meeting	Not Meeting
Rats Nest	4891	0	640	5531	0	4891	0	0	0	0
Sands Basin										
1	1438	0	389	1828	0	0	1438	0	0	0
2	2929	662	250	3841	0	0	2929	0	0	0
3	1903	77		1980	0	0	0	0	0	1903
4	4590	642	640	5873	0	4590	0	0	0	0
Soda Creek										
1	217	827	59	1103	217	0	0	0	0	0
2	296	330	4	630	296	0	0	0	0	0
3	1857	1014	482	3353	1857	0	0	0	0	0
4	0	412	0	412	0	0	0	0	0	0
5	106	1048	90	1244	106	0	0	0	0	0
6	504	1546	6	2055	504	0	0	0	0	0
Stanford FFR	544	1348	0	1892	0	544	0	0	0	0
Texas Basin FFR										
1	31	624	0	655	31	0	0	0	0	0
2	60	1282	0	1342	60	0	0	0	0	0
Trout Creek										
1	2095	23	0	2118	0	2095	0	0	0	0
2	383	9	0	392	0	383	0	0	0	0
3	883	54	0	937	0	883	0	0	0	0
Trout Creek/Lequerica										
1	696	323	0	1019	696	0	0	0	0	0
2	37	87	0	124	37	0	0	0	0	0
TOTAL	80,720	35,952	8,590	125,263	23,334	35,788	9,611	1,055	5,748	5,184

Precipitation

The nearest National Oceanic Atmospheric Administration (NOAA) weather station is in Reynolds, Idaho. Precipitation data from this station are available for the years 1962 to 2010. Average crop-year precipitation was 9.54 inches and varied from 4.8 inches in 1966 to 15.5 inches in 1985 (Figure ALLOT-1). Crop-year precipitation is the sum of monthly precipitation between September and June and is used as a predictor of forage production during the growing season during the crop year.

Figure ALLOT-1: Reynolds crop-year precipitation 1962-2010



Fire History

Table ALLOT-30 describes the acres burned, by allotment and decade. Fires have become more frequent than historic levels and big and low sagebrush, including bitterbrush, have been reduced in some upland vegetation communities. Early seral shrub species such as rabbitbrush have increased slightly, while more desirable understory species such as Idaho fescue and bluebunch wheatgrass have been reduced. These species have been replaced by Sandberg bluegrass and bulbous bluegrass (*Poa bulbosa*), along with a variety of annual and perennial forbs, including noxious and invasive plants in some burned areas. Cheatgrass and medusahead have invaded some sites. These fine fuels will continue to increase as the fire frequency increases due to the nature of fire disturbance and the ability of invasive annuals to out-compete natives in these sites. The majority of the Chipmunk Group allotments have been affected by fire. These fires have influenced the departures in reference community to early seral communities.

Table ALLOT-30: Fire history for the Chipmunk Group allotments by decade from 1960 to 2012

Allotment	1960 & earlier	1970-1979	1980-1989	1999-1999	2000-2009	2010-2012	No Dates	Total
Alkali-Wildcat	3,117	67	0	501	0	1,972	2,070	7,727
Baxter Basin	1,384	0	0	0	0	0	39	1,423
Blackstock Springs	6,987	562	0	0	0	0	10,179	17,728

Allotment	1960 & earlier	1970-1979	1980-1989	1999-1999	2000-2009	2010-2012	No Dates	Total
Burgess	0	0	0	0	0	0	1,310	1,310
Burgess FFR	0	0	0	0	0	0	723	723
Chimney Pot FFR	1,220	0	0	0	0	0	60	1,280
Chipmunk Field FFR	0	0	0	611	0	0	12,198	12,810
Corral Creek FFR	272	51	0	0	0	0	0	324
Cow Creek	4,004	0	0	0	0	57	3,894	7,956
Elephant Butte	982	494	701	0	693	98	6,794	9,761
Ferris FFR	1,893	0	0	0	0	0	1,249	3,142
Franconi	2,059	0	0	0	602	0	0	2,661
Jackson Creek	1,432	0	0	10	0	0	9,328	10,770
Joint	3,181	0	0	0	774	0	1,036	4,991
Lowry FFR	0	0	0	0	0	0	266	266
Madriaga	800	0	0	0	0	0	3,306	4,106
Poison Creek	0	0	7	41	3,927	10	1,387	5,371
R Collins FFR	0	0	0	0	0	0	435	435
Rats Nest	0	3,188	0	0	0	0	2,343	5,531
Sands Basin	4,546	193	0	0	3,141	0	5,643	13,523
Soda Creek	3,642	0	0	0	4,179	0	3,155	10,975
Stanford FFR	0	0	0	0	0	0	1,892	1,892
Texas Basin FFR	0	0	0	613	0	0	1,385	1,997
Trout Creek	210	0	0	0	0	1	3,236	3,447
Trout Creek/Lequerica	762	0	0	0	0	0	381	1,143
Total	36,492	4,556	708	1,776	13,315	2,137	72,309	131,293

Noxious Weeds

The BLM works closely with the Idaho Department of Agriculture, Tribal governments, and county governments to manage noxious weeds. Cooperative weed management arrangements would utilize local, state and federal resources to inventory and treat noxious weed infestations on both public and private lands.

No populations of noxious weeds are known to occur on BLM-managed lands in the Burgess FFR, Chimney Pot FFR, Chipmunk Field FFR, Franconi, Lowry FFR, R Collins FFR and Stanford FFR allotments. Noxious weed control is ongoing within the remaining areas of analysis. Undiscovered noxious weeds may also exist. As populations are identified, they would be recorded, treated, monitored, and re-treated, if necessary. Noxious weed species identified within the area of analysis are listed in Table ALLOT-31.

Table ALLOT-31: Noxious weed species within the Area of Analysis

Scientific Name	NRCS Common Name	Other Common Name	Category
<i>Acroptilon repens</i>	hardheads	Russian knapweed	control

Scientific Name	NRCS Common Name	Other Common Name	Category
<i>Cardaria draba</i>	whitetop	hoary cress	containment
<i>Centaurea diffusa</i>	diffuse knapweed		containment
<i>Centaurea stoebe</i> ssp. <i>micranthos</i>	spotted Knapweed		containment
<i>Chondrilla juncea</i>	rush skeletonweed		containment
<i>Cirsium arvense</i>	Canada thistle		containment
<i>Conium maculatum</i>	poison hemlock		containment
<i>Convolvulus arvensis</i>	field bindweed		containment
<i>Cynoglossum officinale</i>	gypsyflower	houndstongue	containment
<i>Euphorbia esula</i>	leafy spurge		containment
<i>Lepidium latifolium</i>	broadleaved pepperweed	perennial pepperweed	containment
<i>Lythrum salicaria</i>	purple loosestrife		containment
<i>Onopordum acanthium</i>	Scotch cottonthistle	Scotch thistle	containment
<i>Tamarix</i> sp.	tamarisk	saltcedar	containment
<i>Tribulus terrestris</i>	puncturevine	goathead	containment

Noxious Weed Categories:

- Early Detection and Rapid Response (EDRR) - Plants in this category must be reported to the Idaho State Department of Agriculture within 10 days of being identified by an approved, qualified authority. Eradication must begin in the same season the species is found. No known species of EDRR are known within the analysis area.
- Control – In some areas of the state control or eradication is possible, and a plan must be written that will reduce infestations within 5 years.
- Containment – New or small infestations can be reduced or eliminated, while established populations may be managed as determined by the weed control authority.

Desired Conditions

The following objectives are in the 1999 Owyhee Resource Management Plan (ORMP):

Livestock Grazing Management

- LVST 1: Provide for sustained level of livestock use compatible with meeting other resource objectives.
- MGMT ACTIONS: The livestock allocation is the current active permitted use for livestock in the Owyhee Resource Area. In order to meet resource objectives, the forage allocation will be adjusted based upon monitoring and assessment. Evaluation of monitoring data will determine future stocking levels.
- Limit upland forage use to 50 percent unless higher or lower level of use is appropriate to meet standards for healthy rangelands.

Soil Resources

- SOIL 1: Improve unsatisfactory and maintain satisfactory watershed health/condition on all areas.
- SOIL 2: Achieve stabilization of current, and prevent the potential for future, localized accelerated Soil erosion problems (particularly on stream banks, roads, and trails).

- **MGMT ACTIONS:** Implement grazing practices that during and at the end of the grazing season provide adequate amounts of ground cover (determined on an ecological site basis) to support proper infiltration, maintain soil moisture, stabilize soils, and maintain site productivity.

Vegetation

- **VEGE 1:** Improve unsatisfactory and maintain satisfactory vegetation health/condition on all areas.
- **MGMT ACTIONS:** Implement grazing practices that during and at the end of the grazing season provide adequate amounts of ground cover (determined on an ecological site basis) to support proper infiltration, maintain soil moisture, stabilize soils, and maintain site productivity.
- Implement grazing practices that improve or maintain native rangeland species to attain composition, density, foliar cover and vigor appropriate to site potential.

Wild Horse Management

- **WHRS 1:** Maintain wild and free-roaming horses in the Owyhee Wild Horse Herd Management Areas (HMAs) at appropriate management levels (AML) within a thriving natural ecological balance.
- **MGMT ACTIONS:** Manage wild horses for the appropriate management level (AML) in the Hardtrigger, Black Mountain and Sands Basin Herd Management Areas (HMAs). Allocate forage for wild horses at the AML.

Table WHMA-1: Forage allocation for HMAs in the analysis area

HMA	AML	Population Range	Forage Allocation (AUMs)
Hardtrigger	98	66-130	1,176
Black Mountain	45	30-60	540
Sands Basin	49	33-64	588
TOTAL	192	129-254	2,304

Source: ORMP 1999

Standards 4, 5 and 6

Summary of Findings

Allotments Meeting Standard 4

The allotments that are currently meeting Standard 4 (native vegetation) are Baxter Basin, Burgess, Burgess FFR, Chimney Pot FFR, Chipmunk Field FFR, Jackson Creek, Joint, R Collins FFR, Soda Creek, Texas Basin FFR, and Trout Creek/Lequerica.

Allotments Meeting Standard 5

The allotments that are currently meeting Standard 5 (seeding treatments) are Poison Creek and pastures 1 and 2 of Sands Basin. These allotments are functioning to maintain life form diversity, production, native animal habitat, nutrient cycling, energy flow and the hydrologic cycle to maintain these rangelands.

Allotments Meeting Standard 6

The allotments that are currently meeting Standard 6 (exotic plant communities) are Baxter Basin, and Lowry FFR. These allotments meet the minimum requirements of soil stability and maintenance of existing native and seeded plants.

Allotments Not Meeting Standard 4

Standard 4 is not being met in the Rats Nest, Blackstock Springs, and Sands Basin allotments. Livestock grazing management, exotic plant species encroachment into native communities, recreation, and wild horse grazing are believed to be influencing factors towards not meeting Standard 4 in these allotments.

Allotments Not Meeting Standard 6

Standard 6 is not being met in pasture 2 of Burgess FFR, pasture 2 of Elephant Butte, pasture 1 of Jackson Creek and pasture 3 of Sands Basin. Livestock grazing management and wild horse grazing are believed to be influencing factors towards not meeting Standard 6 in these allotments. Livestock and wild horse grazing are believed to be influencing factors associated with soil stability concerns that do not meet the minimum requirements to maintain these communities.

Allotments Not Meeting Standard 4

Wildfire frequency altered from the natural disturbance regime, exotic encroachment into native communities, and historic livestock grazing all are influencing factors contributed to the failure to meet Standard 4 in the Alkali-Wildcat, Corral Creek FFR, Cow Creek, Franconi FFR, Ferris FFR, Lowry FFR, Madriaga, Stanford FFR, and Trout Creek allotments.

Allotments Not Meeting Standard 5

A historic exotic monoculture seeding contributed to the failure to meet Standards 4 and 5 in pasture 3 of the Joint allotment. The pasture is lacking diversity and structure, including any shrub structure, and is dominated by intermediate wheatgrass.

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.

Indicators may include but are not limited to:

1. Native plant communities (flora and microbiotic crusts) are maintained or improved to ensure the proper functioning of ecological processes and continued productivity and diversity of native plant species.
2. The diversity of native species is maintained.
3. Plant vigor (total plant production, seed and seedstalk production, cover, etc.) is adequate to enable reproduction and recruitment of plants when favorable climatic events occur.
4. Noxious weeds are not increasing.

Rangeland Health – All allotments

Where applicable, available data used to develop this assessment include rangeland health field assessments (RHFA), upland trend data, the Noxious Weed GIS layer, actual use, utilization, photos, and Trimby Fire and Chubby Spain ESRs (USDI BLM, 2006) (USDI BLM, 2005). Monitoring methods are available in Appendix B.

RHFAs were performed during 2007 and 2008 at various locations in each of the 17 allotments. The RHFAs performed in each allotment are briefly described at the beginning of each section, along with the associated ecological sites for the specific area. Nine of the 17 rangeland health indicators examined during the RHFAs and included in the Standard matrix are related to Standard 4 and the attribute of biotic

integrity. Ratings for these nine indicators are summarized in Appendix D Rangeland Health Indicators by allotment and degree of departure from reference conditions.

The analysis of the biotic integrity attribute considers nine indicators: soil surface resistance to erosion, soil surface loss or degradation, compaction layer, functional/structural groups, plant mortality/decadence, litter amount, annual production, invasive plants, and reproductive capacity of perennial plants.

Alkali-Wildcat Allotment

Previous Assessment

The 2001 Determination for Alkali-Wildcat allotment (USDI BLM, 2001) specified that the allotment was not meeting the Standard but making significant progress toward meeting it. Indicators of concern leading to a failure to meet the Standard focused on functional/structural groups and recruitment of plants. Plant community integrity and native species diversity were adequate. However, the majority of large bunchgrasses were commonly found within the protective cover of sagebrush canopy throughout the allotment. Plant vigor was minimally adequate for recruitment of plants when favorable climatic events occurred. Large bunchgrasses were declining and signs of plant mortality were observed; however, vigor of small bunchgrasses was generally good. A lack of conformance with Guidelines for Livestock Grazing Management 1, 3, 4, 9, and 12 was also noted.

Rangeland Health Field Assessment (RHFA)

Three RHFAs were performed in 2007 within the Alkali-Wildcat allotment (Table VEG-1) (Map RNGE-1 Range Resources); two of these sites are within the vicinity of trend sites. In 1960, much of the southeastern portion of the allotment burned either in the Johnstone fire (1960) or the ION fire (1960). The Jump Creek fire of 1996 burned over a large portion of the panhandle in the northern portion of the allotment (Map FIRE-1).

Table VEG-1: Rangeland health field assessments (RHFAs) for the Alkali-Wildcat allotment

Alkali-Wildcat RHFAs	
#	Ecological Site
2	Loamy 10-13" (ION and Jump Creek fires)
1	Loamy 10-13" with inclusions of Shallow Claypan 12-16" (Johnstone fire)

The functional/structural group and soil surface loss indicators have been rated as a moderate departure from the Loamy 10-13" ecological site potential. The assessments indicate that Sandberg bluegrass is very common, with a greater dominance than would be expected at potential and an observed dominance in the shrub interspaces. Bluebunch wheatgrass, the dominant bunchgrass at potential, is present at all three assessment sites in less-than-expected amounts and, when present, are generally within shrub protection. Yellow rabbitbrush (*Chrysothamnus viscidiflorus*) was noted as a co-dominant, which is in higher amounts than expected.

Soil surface loss was apparent at two of the three sites in the shrub interspaces, with pedestalling/terraces noted at the third site. Litter amount was observed to be variable across the sites, with areas dominated by cheatgrass filling the litter void. Where large bunchgrasses are lacking and interspaces are dominated by Sandberg bluegrass, litter is less than expected. Litter amount rated at slight-to-moderate departure for the allotment.

Reproductive capability is reduced on large bunchgrasses in interspaces but appears to be present on Sandberg bluegrass and shrubs for a rating of slight-to-moderate. Plant mortality is an issue at one of the

three sites with large bunchgrasses, such as bluebunch wheatgrass. This same site is noted for pedestalling/terraces, which could contribute to plant mortality. The other two RHFA sites did not show any issue with plant mortality. Plant mortality was rated at a slight to moderate departure for all RHFA sites.

Cheatgrass was observed at two sites as patchy to scattered throughout. The third site had no indication of invasives. The invasive plant indicator is rated at slight to moderate departure for the allotment. Trace amounts of crested wheatgrass were noted at the site where the Johnstone fire burned the allotment. This is the only residual of crested wheatgrass that was noted during the 2007 assessment. Rabbitbrush also was observed in higher-than-expected amounts.

The overall biotic integrity attribute rating for the Alkali-Wildcat allotment is a moderate departure from ecological potential. This departure from potential is strongly influenced by soil surface loss or degradation and functional/structural group ratings.

Noxious Weeds

Within this single-pasture allotment, there are two documented noxious weed sites of tamarisk (*Tamarix* sp.) in the southeastern corner of the pasture. Both sites are less than 0.1 acres in size; one was treated in 2007 and the other was not. Both sites will continue to be targeted for treatment by the BLM Boise District weed program.

Trend

Two nested-plot frequency transect study sites (01S05W12 (section 12) and 01N05W15 (section 15)) were established in 1988 and re-visited in 1994, 2000, 2005 and 2010. The ecological site descriptions of both sites are a Loamy 10-13" Wyoming big sagebrush and bluebunch wheatgrass community. The community, as represented by the trend site, contains a moderate canopy of big sagebrush with pockets of low sagebrush. The interspatial areas are occupied by mostly Sandberg bluegrass, squirreltail, bluebunch wheatgrass, and cheatgrass on site 01N05W12, with medusahead starting to show up on site 01N05W15. Both sites fall within the fire line for the 1960 ION and Johnstone Fires, respectively, and 59 percent of the allotment has burned (Table ALLOT-30).

There has been a short-term increase and long-term decrease of bluebunch wheatgrass at both sites. Cheatgrass has been detected in 2005 and has slightly decreased in frequency at the site in section 12 and has increased in frequency at the site in section 15. Sandberg bluegrass has shown a short-term increase and long-term slight decrease in frequency at site 01N05W12 and a slight decrease at the other site. Squirreltail has increased in frequency at both sites (Tables VEG-2 and -3, Figures VEG-1 and 2).

The plant community at site 01N05W15 contains a good diversity within the shrub component overall. Wyoming big sagebrush has shown a short- and long-term significant increase in frequency on site 01N05W15, although density has decreased slightly. On both sites, low sagebrush is increasing in frequency and density, and there was a flush of seedlings of both low and big sagebrush. The shrub communities on site 01N05W15 showed a long-term decrease and a short-term increase in green rabbitbrush.

Table VEG-2: Nested plot frequency for grasses on site 01N05W12

Grasses		Percentage				
Species	Common Name	1988	1994	2000	2005	2010
AGSP	Bluebunch wheatgrass	20	11	19	14	15
BRTE	Cheatgrass	ND	ND	ND	91	89
POSA3	Sandberg bluegrass	100	98	100	87	95
SIHY	Squirreltail	12	15	11	16	21

ND = No Data recorded for annual grasses.

Figure VEG-1: Grass frequency at site 01N05W12 on the Alkali-Wildcat allotment

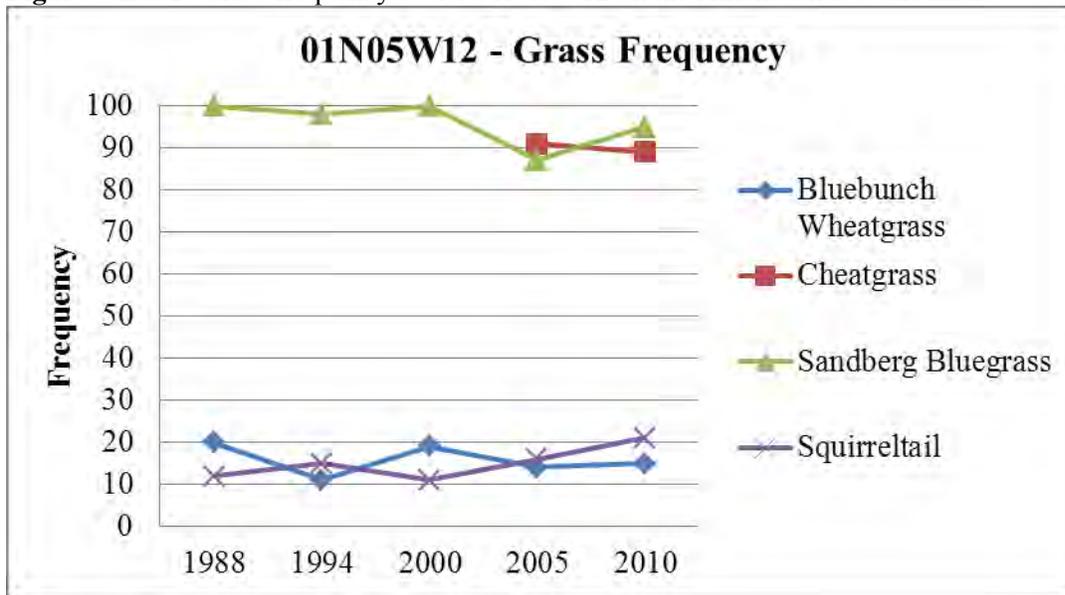
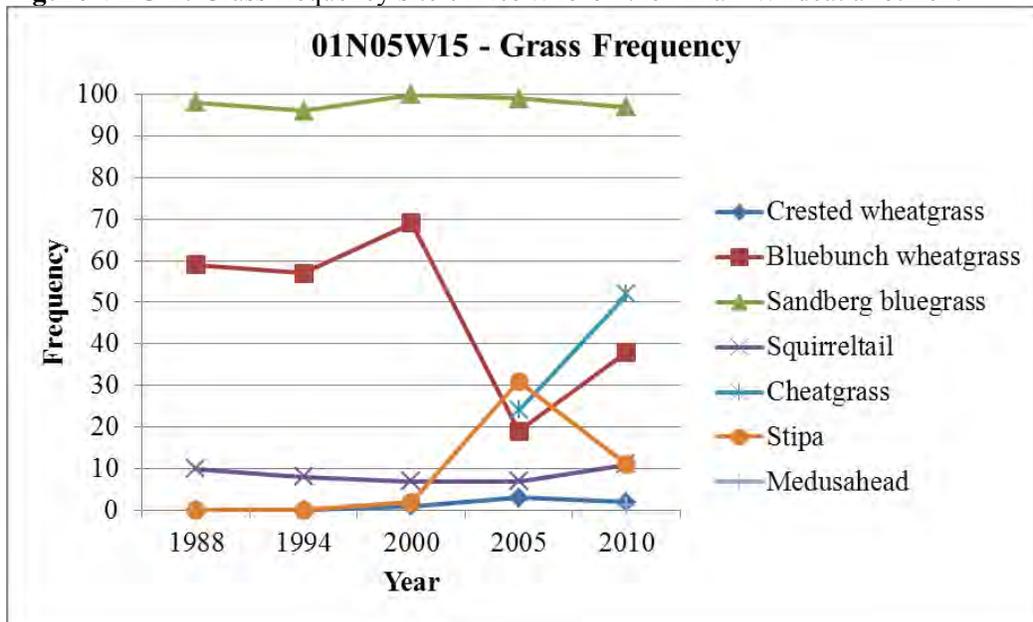


Table VEG-3: Nested plot frequency for grasses on site 01N05W15

Grasses		Percentage				
Species	Common Name	1988	1994	2000	2005	2010
AGCR/AGROP/AGROP2	Crested wheatgrass	0	0	1	3	2
AGSP	Bluebunch wheatgrass	59	57	69	19	38
POSA3	Sandberg bluegrass	98	96	100	99	97
SIHY	Squirreltail	10	8	7	7	11
BRTE	Cheatgrass	ND	ND	ND	24	52
STIPA	Stipa	0	0	2	31	0
TAAS	Medusahead	ND	ND	ND	ND	1

ND = No Data recorded for annual grasses.

Figure VEG-2: Grass frequency site 01N05W15 on the Alkali-Wildcat allotment



Photos at these trend sites indicate moderate perennial shrub cover and decreased perennial grass vigor with apparent increased annuals from 1988 to 2010 (Figures VEG-3 and -4). Reduction in vigor may be correlated to the low crop-year precipitation of 6.26 inches in 2010, which is well below the average crop-year precipitation of 9.54 inches. (Figure ALLOT-1) The eastern portion of the allotment was burned by wildfires in the 1960s. (Map FIRE-1)

Figure VEG-3: May 1988 (left) and June 2010 (right) photo trend in the Alkali-Wildcat allotment showing general overview of allotment and ocular comparison with increased annuals on site 01S05W12



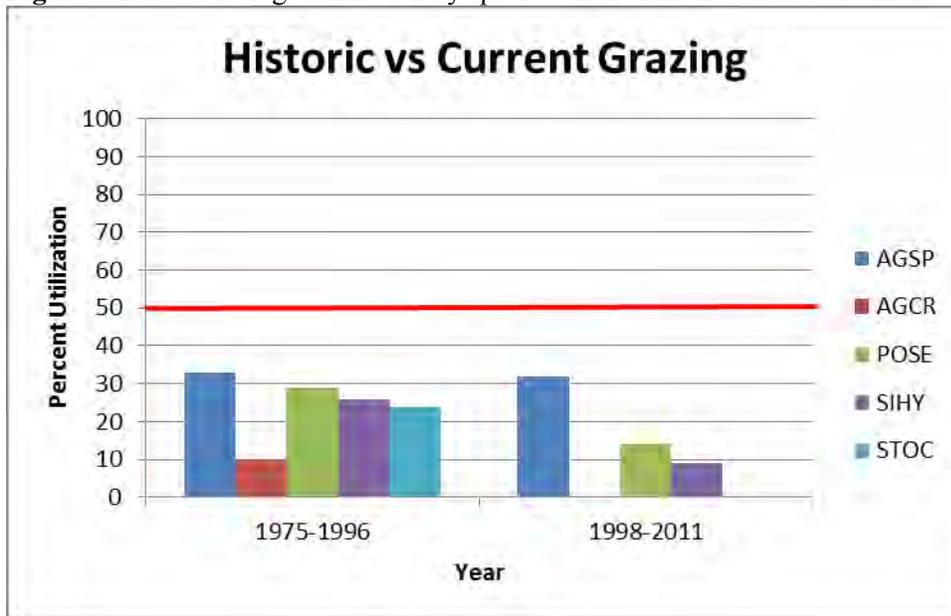
Figure VEG-4: May 1988 (left) and July 2010 (right) photo trend in the Alkali-Wildcat allotment showing general overview of allotment and ocular comparison with low figure and no apparent trend on site 01S05W15



Utilization

Utilization levels from 1975 to 2011 for upland key species in this allotment have generally been light. Utilization has remained consistently light on bluebunch wheatgrass; however, utilization seems to have decreased to slight on squirreltail and Sandberg bluegrass in recent years (1998-2011) (Figure VEG-5).

Figure VEG-5: Average utilization by species on the Alkali-Wildcat allotment



The line in the graph represents 50 percent utilization, as specified in Owyhee Resource Management Plan.

Actual Use

Actual use data for 1990-2011 indicates that when grazed, the Alkali-Wildcat allotment ranged from 179 to 910 AUMs, or 7 to 35 acres per AUM. During this timeframe, the allotment was grazed in the spring during critical growth periods for grasses (April and May). The allotment was rested from grazing in 1994, 1997, 2002, and 2004. Historically, authorized use in the Alkali-Wildcat allotment has ranged from 7 to 34 acres per AUM, compared to 10 to 35 acres per AUM that is currently being authorized (Appendix C Actual Use).

Evaluation of Standard 4

Evaluation Finding – Allotment/watershed is:

Meeting the Standard

Not meeting the Standard, but making significant progress toward meeting

Not meeting the Standard

Rationale for Evaluation Finding

Implementing grazing practices that improve or maintain native rangeland species to attain composition, density, foliar cover, and vigor appropriate to site potential (USDI BLM, 1999) can help achieve desired conditions for native plant communities. The site potential for the Alkali-Wildcat allotment is mostly Wyoming big sagebrush/ bluebunch wheatgrass plant communities. However, the existing condition of most of the allotment is dominated by Wyoming big sagebrush; Sandberg bluegrass and cheatgrass co-dominate the grass community with moderate amounts of bluebunch wheatgrass. All of the components of the reference community on the Alkali-Wildcat allotment are present; however, a shift has occurred to a more Sandberg bluegrass-dominated, more grazing-resistant state. The community composition dominated by small bunchgrasses and cheatgrass is a significant factor in the failure to meet Standard 4.

The Alkali-Wildcat allotment RHFA data (RHFA Ratings Appendix D) identify a reduction of the deep-rooted bunchgrass species (bluebunch wheatgrass) that dominate these sites at potential, with an increase of those bunchgrass species that form a minor component at potential, primarily Sandberg bluegrass. The presence of cheatgrass and soil surface loss and erosion were also noted as factors that contribute to departure from site potential. When compared to ecological site descriptions, the overall biotic integrity rating of moderate leads to a finding that the allotment has departed beyond ecological site potential. The loss of site potential is documented through the lack of species diversity, vigor to maintain reproduction and recruitment, and site protection, which allow soil nutrients to replenish. This decreased ecological function decreases the ability of the site to provide proper nutrient cycling, hydrologic cycling, and energy flow. The RHFA data indicate the biotic integrity of this allotment has been compromised and is not meeting Standard 4.

Trend data indicate good perennial shrub cover and decreased perennial grass vigor with apparent increased annuals, although, as noted above, a shift to a different state has occurred. It is generally not economically feasible to move this state back toward a reference community. Trend data show a short-term increase and long-term decrease in bluebunch wheatgrass. Cheatgrass was detected in 2005 and has slightly decreased in frequency at the site in section 12 and has increased in frequency at the site in section 15. Sandberg bluegrass has shown a short-term increase and long-term static trend in frequency. Fifty-nine percent of the Alkali-Wildcat allotment has been affected by fire or is co-dominated or increasing in cheatgrass. According to the trend data, native plant communities increasing in cheatgrass and a shift in sites that are dominated by small bunchgrasses are significant factors in the failure to meet Standard 4.

Utilization levels have been slight to light (9 to 31 percent) on key species across the Alkali-Wildcat allotment. These utilization levels are appropriate to allow for maintenance of plant communities capable of facilitating proper functioning of ecological processes and continued productivity and diversity of native plant species. Light grazing means a degree of herbage utilization that allows palatable species to maximize their herbage-producing ability (Holecheck, Gomez, Molinar, & Galt, 1999). Utilization by livestock in the Alkali-Wildcat allotment is not a significant factor in not meeting Standard 4.

The allotment has been grazed at 10 to 35 acres per AUM for approximately 8 weeks during the critical growth period (April-May). Repeated light use has occurred, when not rested, during the critical growth

period (April-June) on the grasses. Currently, 5 years of rest have occurred during the 22 years grazed, as displayed in the Actual Use table in Appendix C; the last rest was 8 years ago. Actual use, season of use, and number of livestock are not significant factors in not meeting Standard 4.

Blackstock Springs Allotment

Rangeland Health Field Assessment

Thirteen rangeland health field assessments (RHFAs) were completed during the 2003 field season by an interdisciplinary team. The RHFAs by pasture are briefly described at the beginning of each section, along with the associated ecological sites for the specific area.

Pasture 1

Five RHFAs were completed in 2003 in pasture 1; all five have been affected by wildfire (Table VEG-4). Two of the five RHFAs are located within the seeded perimeter of the rehabilitation after the Johnstone fire of 1960; the other three RHFAs are considered native pastures (Map FIRE-2).

Table VEG-4: Rangeland health field assessments (RHFAs) for pasture 1 of the Blackstock Springs allotment

#	Ecological Site
2	Loamy 10-13" (Johnstone fire 1960, Dead Horse fire 1971)
2	Loamy 10-13" (Johnstone fire 1960, seeded post-fire)
1	Shallow Claypan 12-16" with inclusions of Loamy 13-16" (Johnstone fire 1960)

Seeded RHFAs

The two seeded RHFAs have a slight to moderate departure for the functional/structural group indicator. The actual composition includes a strong grass component, with crested wheatgrass and bluebunch wheatgrass near ecological site potential and Sandberg bluegrass and squirreltail at higher levels than what would be expected at potential composition. Shrub composition is common to scattered, which is lower than potential; however, this is expected for a seeded area. The shrub component at the southern seeded assessment site is dominated by horsebrush and rabbitbrush.

Plant mortality/decadence was noted at one of the two sites in pedestalled Sandberg bluegrass plants and insect infested sagebrush for a slight to moderate departure from potential. The other seeded site was rated at a none-to-slight departure for plant mortality/decadence.

Litter amount was noted to be reduced in the interspaces at both sites, for a slight-to-moderate rating. A portion of the litter that is present is annual grasses. Invasive plants include field brome (*Bromus arvensis*), cheatgrass, curvseed butterwort (*Ceratocephala testiculata*), medusahead, rabbitbrush, and horsebrush. Medusahead is found mostly in disturbed areas and along roadways. The invasive plants indicator at both sites is rated at moderate to extreme.

Reproductive capability at one site appears to be stable, with abundant seedheads on all grass species and sagebrush recruiting in trace amounts, supporting a none-to-slight rating. The other seeded site has a slight to moderate departure due to a lack of diverse age class in crested wheatgrass and compromised sagebrush health due to insect damage.

Soil surface resistance to erosion is noted at a slight to moderate departure from potential due to a decrease in biological soil crusts and organic matter, along with higher-than-expected bare ground. Soil surface loss or degradation is apparent at both sites through water flow paths and pedestals. This is more

apparent at one site, which has a slight to moderate departure, than the other site, which has a none-to-slight departure. Compaction layer was noted to be none to slight at both sites.

The overall biotic integrity rating for the two seeded assessment sites is a slight to moderate departure, mainly due to a shift in functional/structural groups from deep-rooted bunchgrasses to shallow-rooted bunchgrasses, decreased resistance to soil erosion, and percent composition of invasive species. The northernmost seeded assessment site is moving more toward the moderate end of departure than the southern site.

Native RHFAs

The three native RHFA sites are comparable in their indicator ratings, although the easternmost site, which is also a minimum of 600 feet higher in elevation than the other two sites, tends toward potential more than the other two. All functional/structural groups are present at each site and all are rated at a slight to moderate departure. Departures are noted in the shift of functional structural groups with reduced large, deep-rooted bunchgrasses and an increase in short, shallow-rooted bunchgrasses. Composition of shrubs is higher than expected at two sites and lower than expected at one.

Plants are vigorous at all three sites, with some plant mortality/decadence noted in pedestalled Sandberg bluegrass plants and occasional crown die-out of Idaho fescue. The combined rating for plant mortality/decadence at the three sites is a slight to moderate departure.

Litter amounts in flow paths are lower than expected, with an overall rating of slight to moderate departure. Annual production is none to slight and within the expected range for ecological sites at hand. Invasive plants all have a rating of moderate to extreme, due to the common presence of cheatgrass, bulbous bluegrass, and medusahead. Rabbitbrush is also much higher than expected for shrub composition. The reproductive capability of grasses, shrubs and forbs is noted as high, with a none-to-slight departure for the indicator.

Soil surface resistance to erosion on one site was noted at or near site potential (none to slight departure) with the other two sites showing reduced resistance in flow paths and a slight reduction in biological soil crusts (slight to moderate departure). Some historic soil loss is evident in areas of more surface water flow. Soil structure is slightly affected by mechanical hoof action. Overall soil loss or degradation is slight to moderate, with some historic soil loss and little active soil loss.

The overall biotic integrity rating for the three native assessment sites is a slight to moderate departure, mainly due to a shift in functional/structural groups from deep-rooted bunchgrasses to shallow-rooted bunchgrasses, decreased resistance to soil erosion, and percent composition of invasive species.

Pasture 2

Four RHFAs were completed in 2003 in pasture 2 (Table VEG-5). There is no recorded fire or seedings within the pasture. The eastern two assessment sites (Shallow Claypan 12-16") are at or above 5,500 feet elevation and the western two sites (Shallow Claypan 11-13") are at or below 4,700 feet. As a whole, pasture 2 has a slight-to-moderate degree of departure from reference conditions for biotic integrity (Appendix D – Attribute Ratings for RHFAs).

Table VEG-5: Rangeland health field assessments (RHFAs) for pasture 2 of the Blackstock Springs allotment

#	Ecological Site
1	Shallow Claypan 11-13" with inclusions of Loamy 11-13"
1	Shallow Claypan 11-13"
1	Shallow Claypan 12-16" with inclusions of Loamy 13-16"
1	Shallow Claypan 12-16"

Indicators of an altered functional/structural group from potential are present at all three sites in the form of large, deep-rooted bunchgrasses (bluebunch wheatgrass, Idaho fescue) at a lower composition than expected and shallow-rooted bunchgrasses (Sandberg bluegrass) higher than expected. This is apparent through the dominant visual aspect of the shallow-rooted grasses dominating the understory and interspaces. The shrub component is generally in balance and close to potential. The two assessment sites at higher elevation have a structural/functional group closer to potential, with only a slight shift toward a greater composition in shallow-rooted grasses.

A compaction layer was rated at a none to slight departure from expected. No compaction was noted except in the sparse areas of cattle trails. A factor affecting the soil surface resistance to erosion rating of slight to moderate is a weak representation of biological soil crusts at all sites except the southeastern assessment area. Active and historic soil erosion are present in slight to moderate amounts. This is observed through pedestals, frost heaving and overland flow.

Plant mortality/decadence are rated at a slight to moderate departure, with Sandberg bluegrass, bluebunch wheatgrass and Idaho fescue exhibiting some crown die-out associated with pedestalling. Except on those perennial grasses that are pedestalled, reproductive vigor is high with plentiful seedheads. Recruitment of deep-rooted bunchgrasses is limited or absent; those that were observed are within the canopy cover of shrubs. The two northern assessment sites have a reproductive rating of none-to-slight and the southern two assessment sites have a reproductive rating of slight to moderate.

The invasive annual cheatgrass is present at all sites, with presence as small unconnected disturbed sites (moderate or slight to moderate departure) to more common and abundant (moderate to extreme departure). Annual production is at or near potential (none to slight departure) with cheatgrass, at some sites, filling the void for deep-rooted bunchgrasses that are lacking.

Pasture 3

Four RHFAs were completed in 2003 in pasture 3 (Table VEG-6). In 1973, the McBride Creek fire burned less than 200 acres on the western border. No RHFAs are located within this burned perimeter and there are no seedlings recorded within the pasture. Assessment sites range in elevation from 5,200 to 5,800 feet. As a whole, pasture 3 has a none-to-slight degree of departure from reference conditions for biotic integrity (Appendix D – Attribute Ratings for RHFAs).

Table VEG-6: Rangeland Health Field Assessments (RHFAs) for pasture 3 of the Blackstock Springs allotment

#	Ecological Site
1	Shallow Claypan 12-16" with inclusions of Loamy 13-16"
3	Shallow Claypan 12-16" with inclusions of Loamy 16"+

The indicator for invasive plants was rated as moderate to extreme at two assessment sites due to a common occurrence of annual weeds such as cheatgrass and bulbous bluegrass. The other two assessment sites were rated closer to reference condition, with a slight to moderate departure with an occasional presence of cheatgrass and bulbous bluegrass in disturbed areas. At the two western sites, the dominant visual aspect is a mosaic of shrubs with an understory of abundant large perennial grasses in proportions similar to reference condition. The other two assessment sites to the east, the highest and lowest elevation, have a slight to moderate departure for functional/structural group. There is a decrease in abundance of Idaho fescue and bluebunch wheatgrass than expected, and Sandberg bluegrass and annual weeds are higher than expected in shrub interspaces. Plant vigor, production and reproductive capability resemble reference conditions and litter amount is adequate.

Trend

Pasture 1 has been referred to as the seeding pasture. Approximately one-quarter (1,754 of 6,928 acres) of the pasture was seeded with crested wheatgrass following a 1970s wildfire. The five rangeland health evaluations for the pasture and the available photos indicate that the pasture was seeded many years ago; three of the five 2003 rangeland health evaluations will be evaluated under Standard 5-Seedings. Key use areas in this pasture are located in crested wheatgrass stands.

Two nested plot frequency transect (NPFT) sites are located in pasture 2. No trend monitoring sites are established on public lands in pasture 3 (Map RNGE-2).

Pasture 1

One photo plot trend site (01S05W28) is established in pasture 1 of the Blackstock Springs allotment (Figure VEG-6 photo trend). The site was established in 1985 and revisited in 1987, 1994, 2003, and 2009. The community, as represented by the photo plot, contains vigorous bunchgrasses like bluebunch wheatgrass and crested wheatgrass, with scattered mountain big sagebrush. In addition, small amounts of horsebrush and green rabbitbrush with many residual seedheads, including small amounts of Japanese brome, are found at the site. Sandberg bluegrass is starting to fill in cover of interspaces between large bunchgrasses.

Figure VEG-6: From left to right: July 1985 and June 2009 photo trend in pasture 1 of Blackstock Springs allotment



Pasture 2

At 02S05W04, there was a short-term decrease and long-term increase in bluebunch wheatgrass . Sandberg bluegrass was dominant and decreased in frequency on this site in 2003. Idaho fescue appeared to remain at the site in low amounts, with no apparent trend. Cheatgrass was also noted for the first time in 2003 with 70 percent frequency, and has increased (Table VEG-7 and Figure VEG-7). At 02S05W11, bluebunch wheatgrass has shown a short- and long-term decrease in frequency. This is a Sandberg

bluegrass-dominated site, and it has remained static. At this site, squirreltail increased in the long-term and decreased in the short-term, and low sagebrush frequency showed no apparent trend (Table VEG-8 and Figure VEG-8).

Table VEG-7: Grass frequency in pasture 2 of the Blackstock Springs allotment, site 02S05W04

Grasses		1994	2003	2009	2012
Species					
AGSP	Bluebunch wheatgrass	23	55	52	28
APIN	dense silkybent	ND	ND	ND	1
BRJA	Japanese brome	ND	ND	ND	1
BRTE	Cheatgrass	ND	70	89	100
FEID	Idaho fescue	1	4	3	3
FEOC/VULPIA	Six-weeksfescue/Vulpia	0	1	0	3
POA/POCU3/POSA3	Bluegrass (Sandberg/Cusick)	97	94	77	72
SIHY	Squirreltail	44	22	13	4
TACA8	Medusahead	ND	ND	ND	1

Cusick and Poa are most likely the same grass on this site.

Figure VEG-7: Grass frequencies in the Blackstock Springs allotment

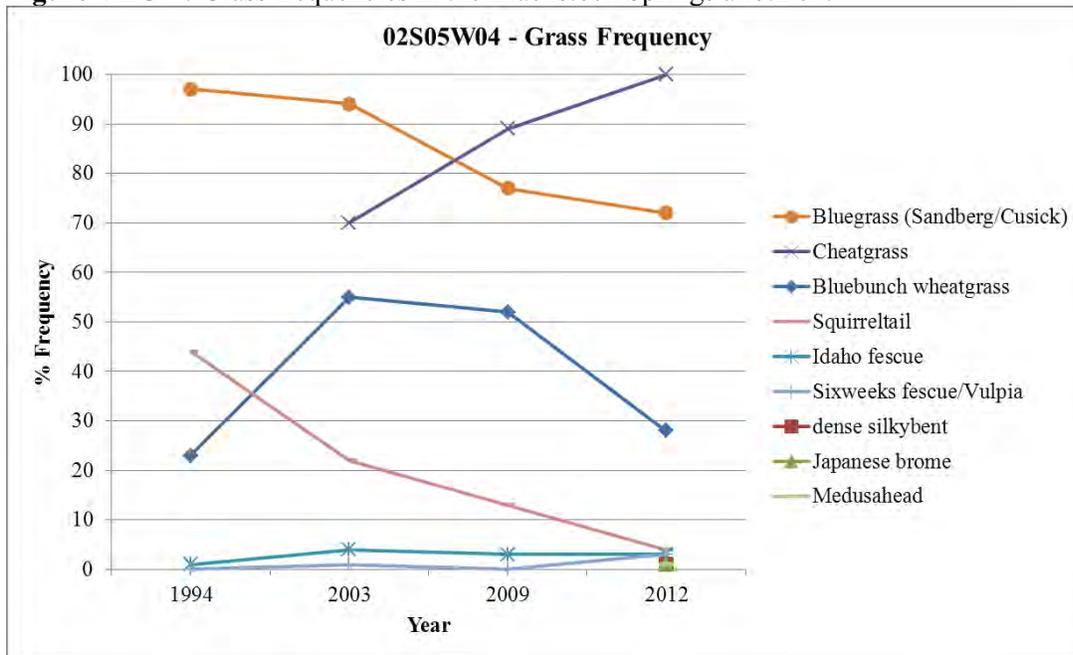


Table VEG-8: Grass frequency in pasture 2 of the Blackstock Springs allotment, site 02S05W11

Grasses		Percentage				
Species		1985	1994	2003	2009	2012
AGSP	Bluebunch wheatgrass	80	74	77	84	70
BRTE	Cheatgrass	ND	ND	ND	4	6
ERCI	Stinkgrass	ND	ND	2	0	0

Grasses		Percentage				
Species		1985	1994	2003	2009	2012
FEID	Idaho fescue	0	0	0	2	2
MICRO	Small grass	0	0	0	56	82
POBU	Bulbous bluegrass	ND	ND	ND	7	25
POSA3	Sandberg bluegrass	98	96	95	94	99
SIHY	Squirreltail	0	26	28	5	9

Figure VEG-8: Grass frequencies in the Blackstock Springs allotment

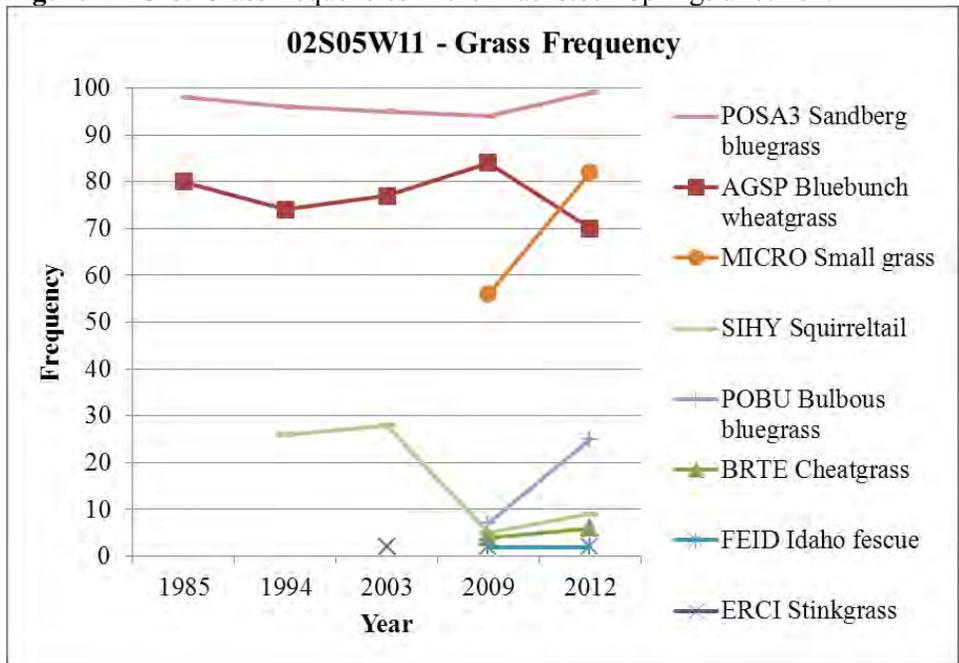


Figure VEG-9 shows photos of trend sites in pasture 2 at site 02S05W04. The community, as represented by the trend photos, contained vigorous bunchgrasses like bluebunch wheatgrass and astragalus. In addition, small amounts of horsebrush, green rabbitbrush, and Japanese brome were present at the site.

Figure VEG-9: From left to right: June 1985 and June 2009 photo trend in pasture 2 of the Blackstock Springs allotment



Pasture 3

Although no trend plots were established in pasture 3 on public land, there are two adjacent trend plots on private land that were established in 1989 and revisited in 1994. Although no recent data show apparent trend, the community, as represented in the photos, consisted of a site with a good component of bluebunch wheatgrass that was dominated by shrubs (Figure VEG-10 photos).

Figure VEG-10: From left to right: May 1989 and June 1994 photos in pasture 3 of the Blackstock Springs allotment

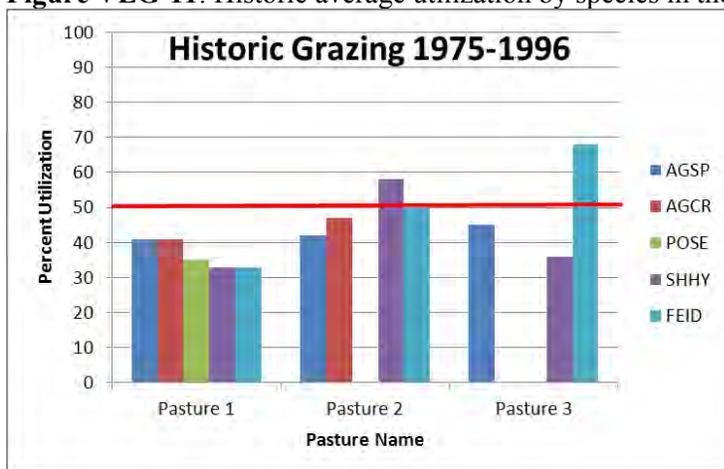


Utilization

Utilization was completed in 1996 and 1998 for pasture 1. In 1996, crested wheatgrass was measured at 45 percent utilization, and in 1998, it was measured from light (21 to 40 percent) to moderate (41 to 60 percent), based on use-pattern mapping.

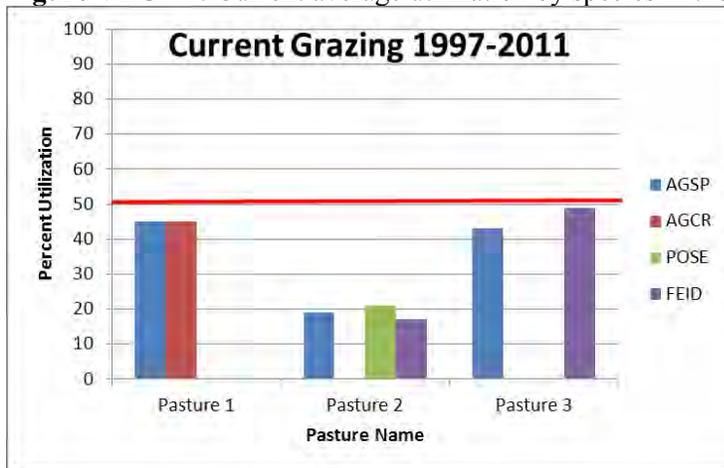
Utilization levels from 1975 to 1996 for upland key species in the Blackstock Springs allotment have been light to moderate, with the exception of heavy use on Idaho fescue in pasture 3 (Figure VEG-11 Historic use). More recent data from 1997 to 2011 has shown slight to moderate utilization (Figure VEG-12 Current use).

Figure VEG-11: Historic average utilization by species in the Blackstock Springs allotment



Horizontal line represents 50 percent utilization, as specified in Owyhee Resource Management Plan.

Figure VEG-12: Current average utilization by species in the Blackstock Springs allotment



Horizontal line represents 50 percent utilization, as specified in Owyhee Resource Management Plan.

Evaluation of Standard 4

Evaluation Finding – Allotment/watershed is:

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

Rationale for Evaluation Finding

Pasture 1

It is apparent that the assessment site in the southeastern corner is of better quality and has been rated as a slight departure from potential. This assessment site represents a higher precipitation zone (Shallow Claypan 12-16”) and elevation, which allows more resilience to disturbance due to lower temperatures and more precipitation.

The RHFA data for the remaining sites in pasture 1 show a reduction of deep-rooted bunchgrass species and an increase in shallow-rooted bunchgrass species that should represent a minor component at site potential. The common presence of invasive annuals and sprouting shrubs, as well as soil surface erosion, are noted as factors contributing to departure from site potential and a lack of ecological balance. This pasture has been subject to wildland fire and rangeland seedings. The higher-than-expected presence of Sandberg bluegrass and squirreltail indicates the early stages of a shift in composition away from deep-rooted bunchgrasses toward shallow-rooted bunchgrasses. Compared to the ecological site descriptions, the overall biotic integrity has been compromised for this pasture and the departure from potential indicates that this pasture is not meeting Standard 4.

Pasture 2

The plant community displays a replacement from deep-rooted bunchgrasses to shallow-rooted species with invasive annuals. Invasive annuals are of concern at all sites, with cheatgrass common in three of four sites. Recruitment and vigor of deep-rooted bunchgrasses are absent to low and plant mortality is a problem in pedestalled species. Healthy, productive, and diverse populations of native plants are being maintained to provide for proper nutrient cycling, hydrologic cycling, and energy flow, although invasive annuals appear to be increasing and could negatively impact maintenance of the native vegetation community. The RHFA data indicate the biotic integrity of this allotment is meeting Standard 4.

Pasture 3

Pasture 3 is overall rated as a none-to-slight departure from potential. The pasture has a general dominance of large perennial bunchgrasses and appropriate cover of shrubs, with perennial plants appearing vigorous and reproductively capable. The common occurrence of annual weeds among disturbed areas and in areas adjacent to assessment sites is of concern. Even with this concern, the biotic integrity indicators, based on ecological site descriptions, lead to a finding that biotic attributes within the allotment are somewhat similar to those present at ecological site potential. Healthy, productive, and diverse populations of native plants are maintained to provide for proper nutrient cycling, hydrologic cycling, and energy flow. The RHFA data (RHFA ratings Appendix D) indicate the biotic integrity of this allotment is mildly compromised but is meeting Standard 4.

Trend data for pasture 1 was represented by one photo trend site. Data indicated that the community contains vigorous bunchgrasses with many residual seedheads. Ninety-five percent of the pasture was seeded and is now transitioning back to a native plant community. Trend is not a significant factor in not meeting Standard 4 in pasture 1. Pastures 2 and 3 are increasing in large bunchgrasses and native plant communities are functioning to maintain life form diversity and production. Cheatgrass is present in pastures 2 and 3. If the cheatgrass threshold is crossed, intervention through artificial reseeding may be the only recourse to obtain satisfactory native or introduced plant communities (Pellant, 1996). The trend data indicate the native plant communities are maintained and are continued productivity, vigor and diversity. Trend is a significant factor in meeting Standard 4 in pastures 2 and 3.

Utilization levels have been light to moderate (18 to 48 percent), with exception of 67 percent use on Idaho fescue in 1996 at one site in pasture 3.

Actual use has occurred annually approximately between 5/1 and 11/15 on a deferred rotation. Typically, livestock grazing occurs in pasture 1 in the spring and fall, pasture 2 in the summer, and pasture 3 in the fall. A total of 2,057 BLM AUMs are permitted.

Burgess Allotment

Rangeland Health Field Assessment

Pasture 1

Annual exotics dominate the understory with a slight to moderate departure in overall biotic integrity from the reference community.

Trend

One nested plot frequency transect (NPFT) site is located in the Burgess allotment. Site 03S06W26A was established in 1983 with only four plots and re-read in 2009 and 2012 with five plots (Table VEG-9 and Figure VEG-13). The site is represented by a good component of upward trend in bluebunch wheatgrass, and downward trend in Sandberg bluegrass, with field brome and Wyoming big sagebrush. Medusahead are starting to show up on the transect. Photo trends show good vigor on grasses and shrubs (Figure VEG-14).

Table VEG-9: Grass frequency for the Burgess allotment, site 03S06W26A

Grasses		Percentage		
Species	Common Name	1983	2009	2012
AGSP	Bluebunch Wheatgrass	17	53	67
BRTE	Cheatgrass	32	0	10
BRCA5	California brome	4	31	38
BRJA	Field brome	0	95	99
POBU	Bulbous bluegrass	0	2	3
POSA3	Sandberg Bluegrass	23	57	32
SIHY	Squirreltail	4	9	4
FEID	Idaho fescue	1	0	0
TACA8	Medusahead	0	2	20

Figure VEG-13: Grass frequency in the Burgess allotment

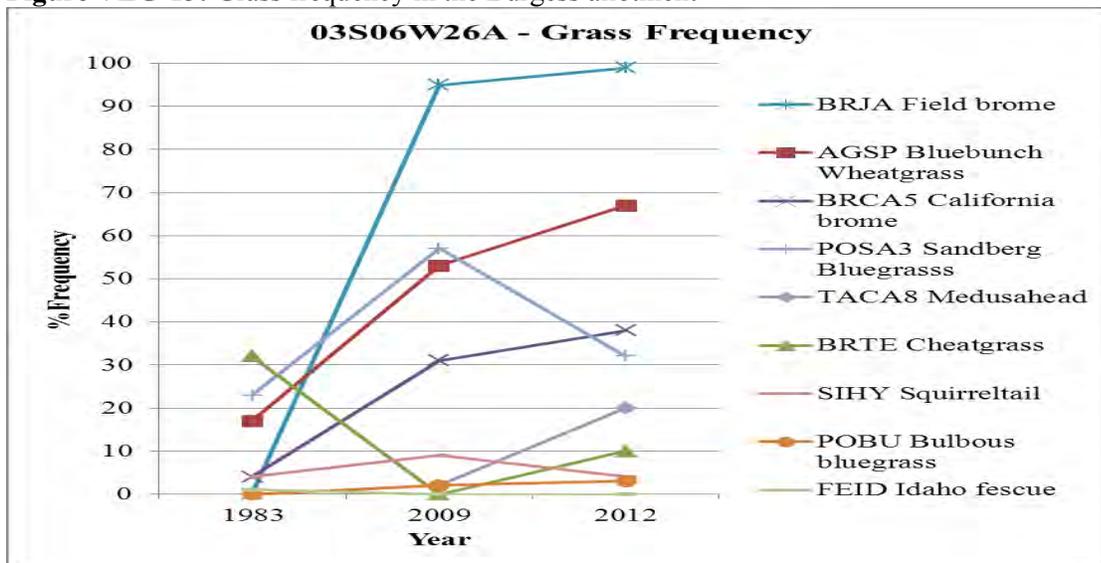


Figure VEG-14: July 2004 (left) and August 2009 (right) photo trend in the Burgess allotment on site 03N06W26A



Pasture 3

There is a slight to moderate departure from the reference community for overall biotic integrity, and a moderate departure for invasive plants and reproductive capability for perennial plants.

Trend

One photo plot site is established in pasture 3. The site was established in 1985 and re-visited 1987, 2003, and 2011. The community, as represented by the trend site, contains a Wyoming Big sagebrush, bitterbrush, scattered green rabbitbrush. The interspatial areas are occupied by mostly Sandberg bluegrass and bluebunch wheatgrass with scattered cheatgrass and squirreltail.

Wyoming big sagebrush continues to dominate the site with no apparent trend. Shrubs and grasses appear to be more vigorous in 2009 than 1985 (Figure -15).

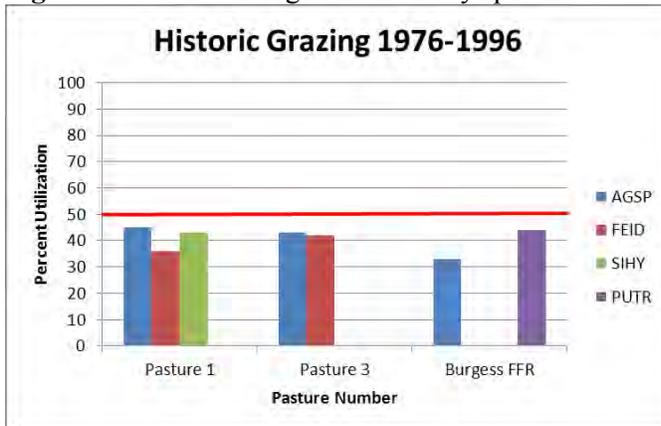
Figure VEG-15: June 1985 (left) and September 2009 (right) photo trend in pasture 3 of the Burgess allotment on site 04N06W02



Utilization

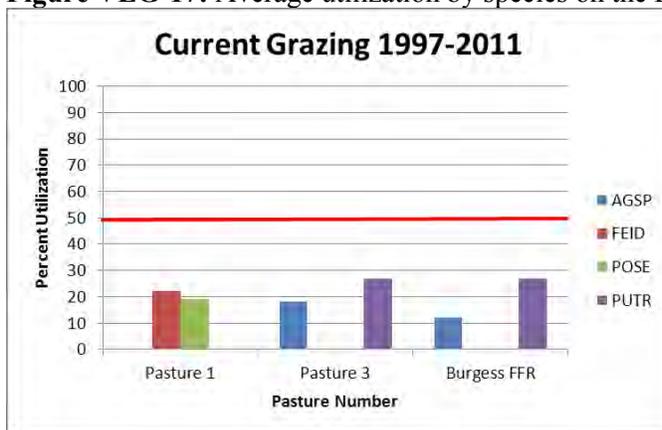
Utilization levels from 1976 to 1996 for upland key species in the Burgess allotment were light to moderate. More recent data collected between 1997 and 2011 have shown slight to light use (Figures VEG-16 and -17).

Figure VEG-16: Average utilization by species on the Burgess allotment



Horizontal line represents 50 percent utilization as specified in Owyhee Resource Management Plan.

Figure VEG-17: Average utilization by species on the Burgess allotment



Horizontal line represents 50 percent utilization as specified in Owyhee Resource Management Plan.

Actual Use

Actual use data for 1990 to 2011 indicate that when grazed, the Burgess allotment ranged from 153 to 267 AUMs, or 5 to 8 acres per AUM. The Burgess FFR allotment was grazed with 11 AUMs, or 24 acres per AUM. The allotment was rested or had no available data for grazing in 2002 and 2004 (Appendix C Actual Use).

Evaluation of Standard 4

Evaluation Finding – Allotment/watershed is:

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

Rationale for Evaluation Finding

Annual exotics (medusahead) occur in the understory plant communities with patches of native plant communities in pasture 1 of the Burgess allotment. RHFA data indicates a slight to moderate departure from ecological site potential. The RHFA data indicate the biotic integrity of pasture 1 has been slightly compromised but is meeting Standard 4.

Pasture 3 RHFA data indicate that the functional structural groups are all present, with slight composition shift to a smaller bunchgrass-dominated site and high shrub composition. The biotic integrity of pasture 3 is meeting Standard 4.

Trend data for pasture 1 of the Burgess allotment was represented by one trend site. Data indicate that the community is dominated by bluebunch wheatgrass, field brome and Sandbergbluegrass; however large bunchgrass presence is increasing. One photo trend site was evaluated in pasture 3, and photos show no apparent trend. Shrubs and grasses appear to be more vigorous in recent photos. Photo and trend data indicate the native plant communities in pastures 1 and 3 are meeting Standard 4.

Utilization levels from 1976 to 1996 for upland key species in the Burgess allotment have generally been light to moderate. More recent data collected between 1997 and 2011 have shown slight to light use. Light grazing means a degree of herbage utilization that allows palatable species to maximize their herbage producing ability (Holecheck, Gomez, Molinar, & Galt, 1999).

Chimney Pot FFR Allotment

Rangeland Health Field Assessment

There are no established trend plots on the Chimney Pot FFR allotment, and photo plots show none to slight departure from expected conditions (Figure VEG-18). There are utilization data for 2009 and 2011 only. Bluebunch wheatgrass was measured at 8 percent in 2009 and *bulbous bluegrass* was measured at 33 percent use in 2001. Actual use data are consistent with authorization of 4 AUMs from 12/1 to 12/31 annually (Appendix C Actual Use). Only 25 acres out of 1,280 are publicly owned.

Figure VEG-18: October 2001 photo of the Chimney Pot FFR allotment at RHFA site



Evaluation of Standard 4

Evaluation Finding – Allotment/watershed is:

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

Rationale for Evaluation Finding

This one-pasture allotment is dominated by native plant communities and is meeting Standard 4 (Native Plant Communities). An RHFA was established in 2011 and data show a none to slight departure from expected for the ecological site.

Cow Creek Allotment

Two qualitative evaluations of the condition of rangeland seedings were completed on the Cow Creek allotment during the 2001 field season by an interdisciplinary team of resource specialists. The evaluations were conducted using the Standard 5 (Seedings) Qualitative Assessment Worksheet and the Physical Environmental Worksheet. These worksheets compare eight indicators for physical characteristics and ten indicators for vegetative characteristics, respectively, to an Ecological Site Description for a reference site displaying a natural range of the expected physical and vegetative characteristics.

Pasture 1

Rangeland Health Field Assessment

Of the two rangeland health evaluations completed in the pasture 1 seedings, the Shallow Claypan 12-16” site showed intermediate departure, and the Loamy 11-13” site was rated in the plus departure category.

The Shallow Claypan site had reduced biological crust and marginal size diversity in the plant

community. The majority of the plants were robust with seed stalks on the crested wheatgrass and Sandberg bluegrass. The loamy site had good diversity of species of various age classes. Nitrogen fixing forbs were present. Production was as expected for a drought year. Idaho fescue, bluebunch wheatgrass, and crested wheatgrass were present in adequate quantity. New recruits of these species were present on the site.

Trend

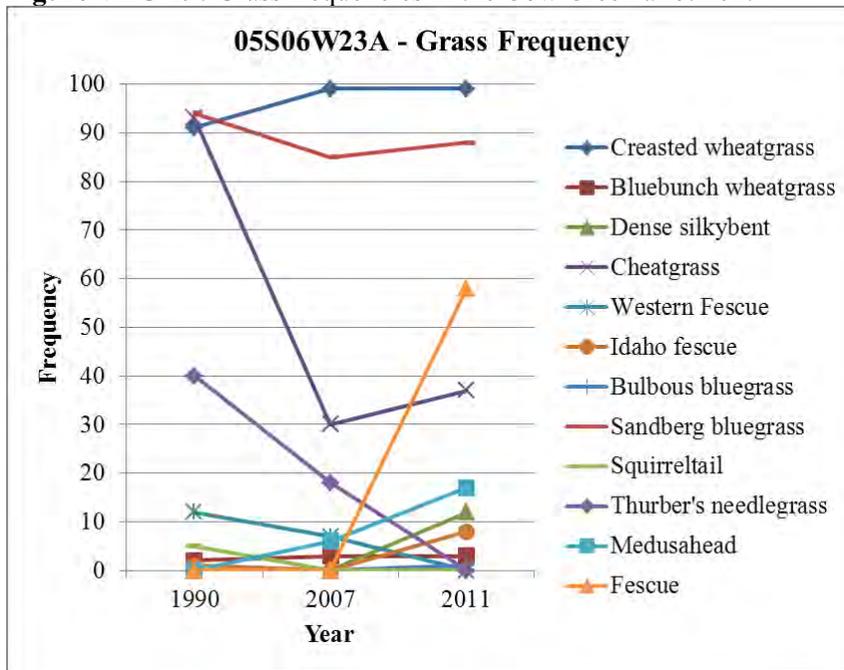
One nested-plot frequency transect study site 05S06W23A is established in pasture 1 (Map RNGE-3). The site was established in 1990 and re-visited 2007 and 2011. The community, as represented by the trend site, contains scattered green rabbitbrush and spineless horsebrush. The interspatial areas are occupied by mostly crested wheatgrass, Sandberg bluegrass, cheatgrass medusahead, and vulpia.

Bluebunch wheatgrass has remained static in frequency since first recorded. Sandberg bluegrass shows a long-term decrease and short-term increase in frequency. Crested wheatgrass is dominant and static since it was first recorded. Cheatgrass shows a long-term downward trend and short-term upward trend in frequency. Medusahead and vulpia are increasing (Table VEG-10, Figure VEG-19).

Table VEG-10: Grass frequency on the Cow Creek allotment, site 05S06W23A

Grasses		Percentage		
Species	Common Name	1990	2007	2011
AGCR	Crested wheatgrass	91	99	99
AGSP	Bluebunch wheatgrass	2	3	3
APIN	Dense silkybent	0	0	12
BRTE	Cheatgrass	93	30	37
FEOC	Western Fescue	12	7	0
FEID	Idaho fescue	1	0	8
POBU	Bulbous bluegrass	0	0	1
POSA3	Sandberg bluegrass	94	85	88
SIHY	Squirreltail	5	0	0
STTH2	Thurber's needlegrass	40	18	0
TAAS	Medusahead	0	6	17
VULPIA	Fescue	0	0	58

Figure VEG-19: Grass frequencies in the Cow Creek allotment



Pasture 2

Rangeland Health Field Assessment

Three evaluations were completed in pasture 2. Two evaluations showed slight to moderate departure, and one showed none to slight departure. One of the slight to moderate evaluations was conducted in a previously burned area and showed some departure associated with post-burn conditions. Some soil surface instability was observed throughout the site. Infiltration was moderately affected by loss of bluebunch wheatgrass and Idaho fescue, which was being replaced with Sandberg bluegrass. There are some signs of slight soil deposition. Nitrogen-fixing forbs were present, and there was good reproduction on bluebunch wheatgrass, Sandberg bluegrass, and antelope bitterbrush. Cheatgrass, western juniper, bur buttercup and rod tansy were found scattered on site.

Trend

One nested-plot frequency transect study site 05S06W24 is established in pasture 2. The site was established in 1990 and re-visited 1995, 2001, 2007, and 2011. The community, as represented by the trend site, contains scattered low sagebrush. The interspatial areas are occupied by mostly medusahead, squirreltail, field brome and bluebunch wheatgrass.

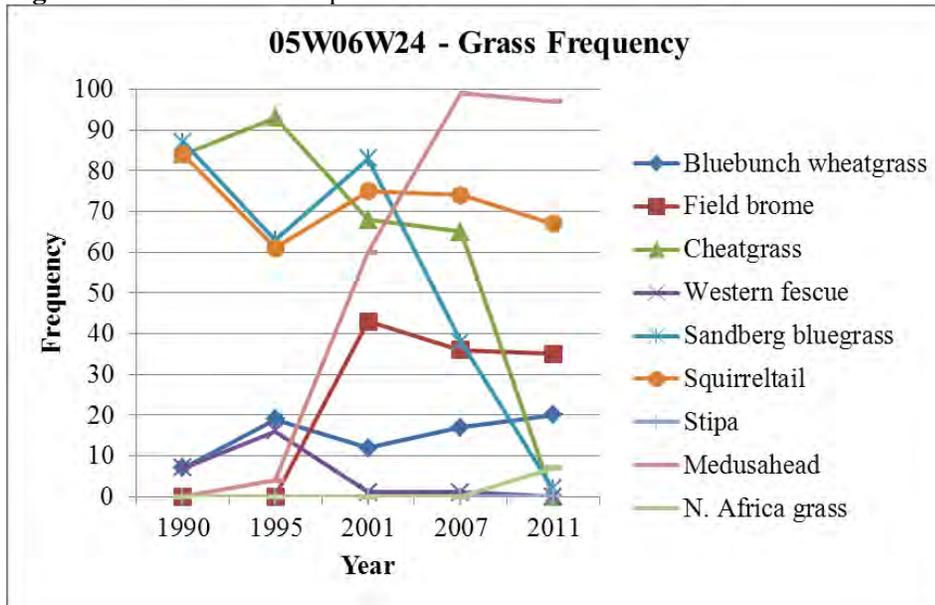
Bluebunch wheatgrass has increased in frequency since recorded. Sandberg bluegrass, squirreltail and cheat grass shows a long term decrease in frequency. Medusahead is increasing (Table VEG-11, Figure VEG-20). Shrub density of low sagebrush shows a downward trend.

Table VEG-11: Grass frequency Cow Creek allotment 05S06W24

Grasses		Percentage				
Species	Common Name	1990	1995	2001	2007	2011
AGSP	Bluebunch wheatgrass	7	19	12	17	20
BRJA	Field brome	0	0	43	36	35

Grasses		Percentage				
Species	Common Name	1990	1995	2001	2007	2011
BRTE	Cheatgrass	84	93	68	65	ND
FEOC	Western fescue	7	16	1	1	0
POSA3	Sandberg bluegrass	87	63	83	38	2
SIHY	Squirreltail	84	61	75	74	67
STIPA	Stipa	0	0	0	0	0
TAAS/TACA8	Medusahead	0	4	60	99	97
VEDU	N. Africa grass	0	0	0	0	7

Figure VEG-20: Grass frequencies in the Cow Creek allotment.



Pasture 3

Rangeland Health Field Assessment

One rangeland health evaluation was completed in pasture 3. It was rated in the none to slight departure category for the attribute of biotic integrity. The soil surface was well protected by interspatial vegetation, good organic matter content, litter, and gravel. Sandberg? bluegrass was increasing in interspaces and abundant on the eastern side of the pasture. Some sagebrush was decadent and mortality was noted on mature bluebunch wheatgrass and Idaho fescue plants. Good species structural groups were present.

Trend

One nested-plot frequency transect study site 04S05W31 was established in pasture 3 in 1990 and revisited 1995, 2001, 2007, and 2011. The community, as represented by the trend site, contains a mountain big sagebrush, green rabbitbrush, and scattered bitterbrush community. The interspatial areas are occupied by mostly bluebunch wheatgrass, Sandberg bluegrass, Idaho fescue, bulbous bluegrass with scattered amounts of Thurber's needlegrass and squirreltail.

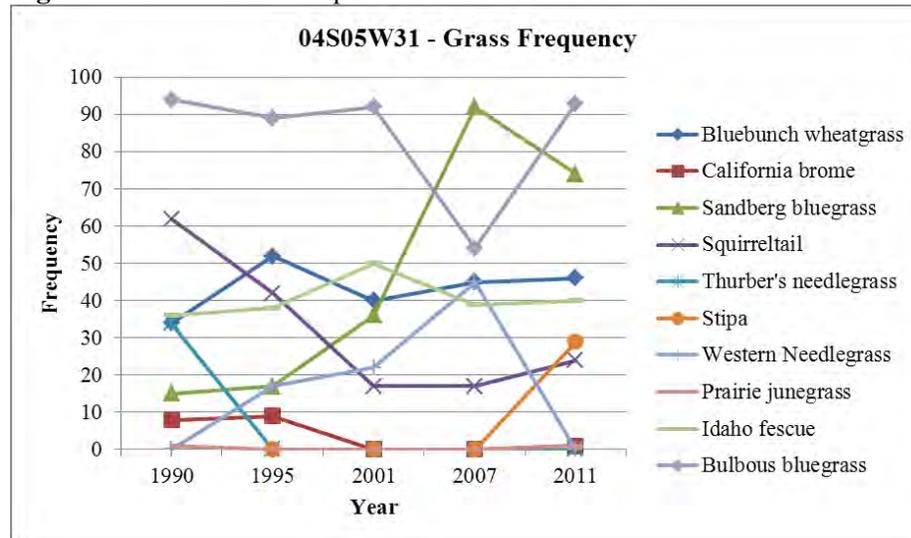
Bluebunch wheatgrass has increased in frequency since 2001. Sandberg bluegrass and western needlegrass show a short-term decrease and long-term increase in frequency. Idaho fescue has remained static. Squirreltail and cheatgrass shows a long-term decrease and short-term increase in frequency.

Bulbous bluegrass is static (Table VEG-12, Figure VEG-21). Shrub density of Mountain Big sagebrush and rabbitbrush shows a downward trend.

Table VEG-12: Grass frequency on the Cow Creek allotment, site 04S05W31

Grasses		Percentage				
Species	Common Name	1990	1995	2001	2007	2011
AGSP	Bluebunch wheatgrass	34	52	40	45	46
BRCA5	California brome	8	9	0	0	1
POSA3	Sandberg bluegrass	15	17	36	92	74
SIHY	Squirreltail	62	42	17	17	24
STTH2	Thurber's needlegrass	34	0	0	0	0
STOC2	Western Needlegrass	0	17	22	45	29
KOCR	Prairie junegrass	1	0	0	0	1
FEID	Idaho fescue	36	38	50	39	40
POBU	Bulbous bluegrass	94	89	92	54	93

Figure VEG-21: Grass frequencies in the Cow Creek allotment



Pasture 4

Rangeland Health Field Assessment One evaluation was completed in pasture 4. The summary of attributes rated the pasture as being in the none to slight departure category for the attribute of biotic integrity. Minor erosion was occurring, with short, unconnected water flow paths. The area showed inclusion of mountain mahogany ecosites. The soil surface was stable due to interspatial plants and gravel. Western juniper and bulbous bluegrass was invading the site. There were adequate seedheads for recruitment of Sandberg? bluegrass and Idaho fescue.

Trend

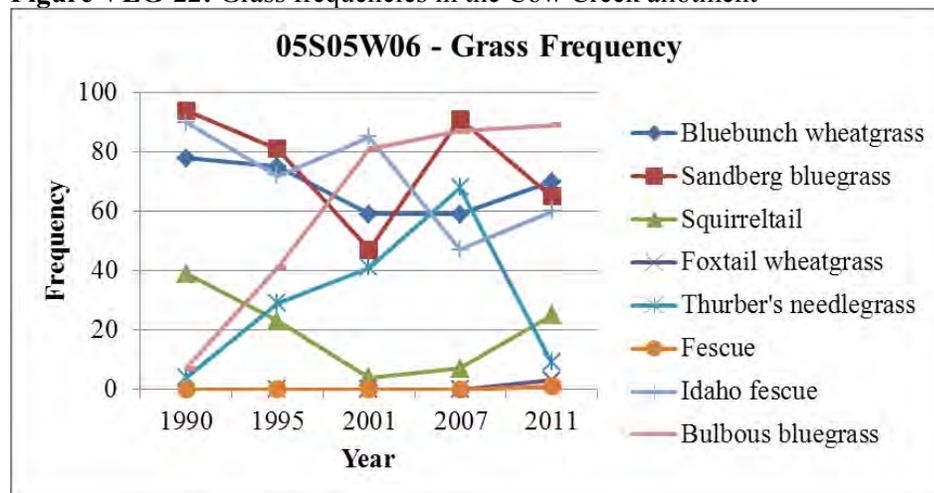
One nested-plot frequency transect study site 05S05W06 was established in pasture 4 in 1990 and revisited in 1995, 2001, 2007, and 2011. The community, as represented by the trend site, contains a mountain big sagebrush, green rabbitbrush, and scattered bitterbrush and low sagebrush. The interspatial areas are occupied by mostly bluebunch wheatgrass, Sandberg bluegrass, Idaho fescue, and bulbous bluegrass with scattered amounts of stipa and squirreltail.

Bluebunch wheatgrass showed a short-term increase and static long-term trend. Sandberg bluegrass and needlegrass showed a long-term decrease in frequency. Idaho fescue has increased short term and decreased long-term in frequency. Squirreltail showed a short-term increase and long-term decrease in frequency. Bulbous bluegrass has increased in frequency (Table VEG-13, Figure VEG-22). Shrub density of mountain big sagebrush and rabbitbrush shows a downward trend.

Table VEG-13: Grass frequency on the Cow Creek allotment, site 05S05W06

Grasses		Percentage				
Species	Common Name	1990	1995	2001	2007	2011
AGSP	Bluebunch wheatgrass	78	75	59	59	70
POSA3	Sandberg bluegrass	94	81	47	91	65
SIHY	Squirreltail	39	23	4	7	25
AGSA2	Foxtail wheatgrass	0	0	0	0	3
STTH2	Thurber's needlegrass	4	29	41	68	9
VULPIA	Fescue	0	0	0	0	1
FEID	Idaho fescue	90	72	85	47	60
POBU	Bulbous bluegrass	7	41	81	87	89

Figure VEG-22: Grass frequencies in the Cow Creek allotment



Pasture 5

Rangeland Health Field Assessment Two rangeland health evaluations were conducted in pasture 5. One site showed none to slight departure from the reference area, while the other site showed a slight to moderate departure. Interspatial areas were covered with silt-impeding infiltration. This site had slightly more litter than expected, and a good ground cover of gravel and annual and perennial forbs provided good resistance to erosion and soil surface stability. All functional/structural groups were present. Western junipers and bulbous bluegrass were invading the pasture. Some shrub mortality was observed.

Trend

One nested-plot frequency transect study site 05S05W03 was established in pasture 5 in 1990 and revisited 1995, 2001, 2007, and 2011. The community, as represented by the trend site, contains mountain big sagebrush, scattered bitterbrush, and snowberry. The interspatial areas are occupied by mostly

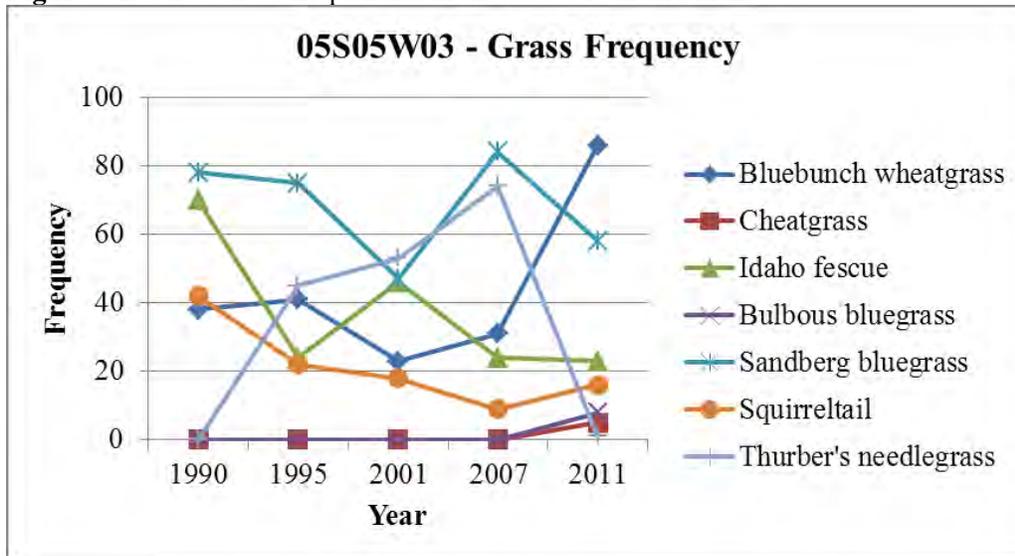
bluebunch wheatgrass, Sandberg bluegrass, and Idaho fescue, with scattered bulbous bluegrass and squirreltail.

Bluebunch wheatgrass shows a short- and long-term increase in trend. Sandberg bluegrass, needlegrass, Idaho fescue, and squirreltail have decreased in long-term frequency. Bulbous bluegrass has increased in frequency (Table VEG-14, Figure VEG-23). Thurber’s needlegrass may have been misidentified as bluebunch wheatgrass in 2011. Shrub density of mountain big sagebrush and bitterbrush shows a downward trend.

Table VEG-14: Grass frequency on the Cow Creek allotment, site 05S05W03

Grasses		Percentage				
Species	Common Name	1990	1995	2001	2007	2011
AGSP	Bluebunch wheatgrass	38	41	23	31	86
BRTE	Cheatgrass	ND	ND	ND	ND	5
FEID	Idaho fescue	70	24	46	24	23
POBU	Bulbous bluegrass	0	0	0	0	8
POSA3	Sandberg bluegrass	78	75	47	84	58
SIHY	Squirreltail	42	22	18	9	16
STTH2	Thurber's needlegrass	0	45	53	74	1

Figure VEG-23: Grass frequencies in the Cow Creek allotment



Utilization

Utilization levels from 1976 to 1996 for upland key species in the Cow Creek allotment have generally been light to heavy. More recent data collected between 1997 and 2011 have shown slight to light use, with the exception of 57 percent use on Idaho fescue in 2001 at one site in pasture 4 (Figures VEG-24 and 25).

Figure VEG-24: Average utilization by species on the Cow Creek allotment

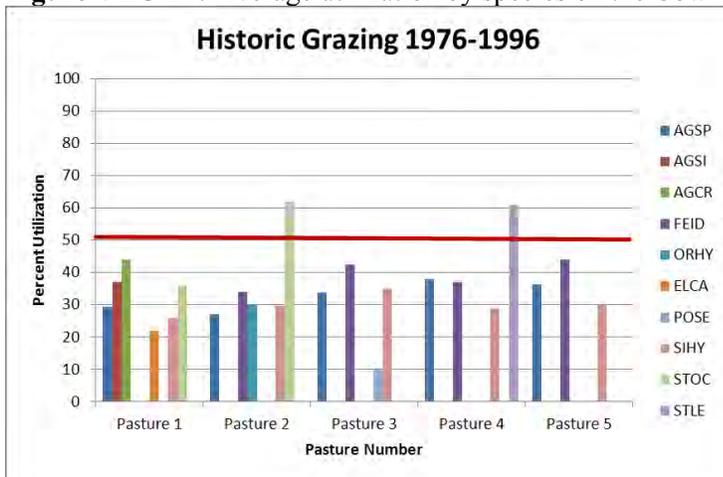
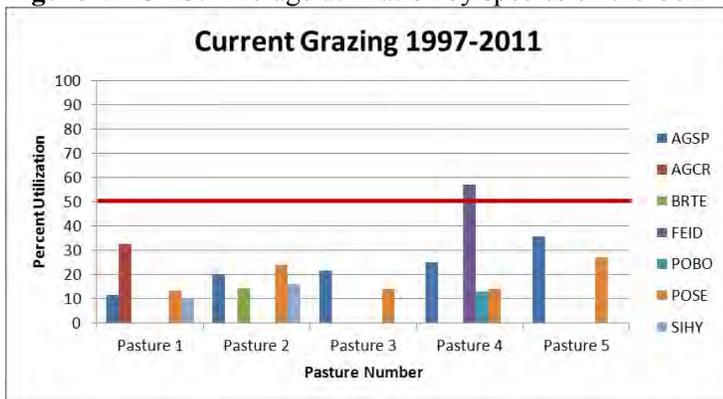


Figure VEG-25: Average utilization by species on the Cow Creek allotment



Actual Use

Actual use data for 1990-2011 indicates that when grazed, the Cow Creek allotment ranged from 891 to 1,239 AUMs, or 6 to 9 acres per AUM. The allotment had no available data for grazing in 1994 through 2005 (Appendix C Actual Use).

Evaluation of Standard 4

Evaluation Finding – Allotment/watershed is:

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

Rationale for Evaluation Finding

Pasture 1 of the Cow Creek allotment was partially burned in 1960. In the 1970s, pasture 1 was seeded after a prescribed burn. The pasture is currently host to a mix of shrubs (bitterbrush, rabbitbrush, and sagebrush), perennial grasses (Sandberg bluegrass, crested wheatgrass), forbs, and annual grasses (medusahead, cheatgrass, six-weeks fescue). This pasture is meeting Standard 4. Trend in perennial grasses is generally static, and increases of six-weeks fescue and medusahead have been detected in recent years.

Evaluation of pasture 2 RHFA data indicates two sites with slight to moderate departure and one none to slight departure from ecological site potential. Evaluation of the RHFA data indicates the biotic integrity of pasture 2 is meeting Standard 4. Trend data indicate the understory is dominated by exotic annuals like medusahead and cheatgrass, with a decrease in low sagebrush density. Native plant communities in pasture 2 are not meeting Standard 4.

RHFA data from pastures 3 through 5 indicates that the functional structural groups are all present, with slight composition shift to a smaller bunchgrass dominated site and high shrub composition. The biotic integrity of pastures 3 through 5 is meeting Standard 4.

Trend data for pastures 3 through 5 of the Cow Creek allotment indicate that the plant community is dominated by bluebunch wheatgrass, Idaho fescue, and Sandberg bluegrass. Evaluation of the RHFA data indicates the biotic integrity of pastures 3 through 5 has none to slight departure from reference plant community and is meeting Standard 4. Trend data indicate increases in large bunchgrasses, which is a significant factor in meeting Standard 4. One photo trend site in pasture 3 shows no apparent trend. Shrubs and grasses appear to be more vigorous in recent photos. Evaluation of photo trend data indicates the native plant communities in pasture 3 are meeting Standard 4.

Utilization levels from 1976 to 1996 for upland key species in the Cow Creek allotment have generally been light to heavy. More recent data collected between 1997 and 2011 have shown slight to light use, with the exception of 57 percent use on Idaho fescue in 2001 at one site in pasture 4. Light grazing means a degree of herbage utilization that allows palatable species to maximize their herbage producing ability (Holecheck, Gomez, Molinar, & Galt, 1999).

Ferris FFR Allotment

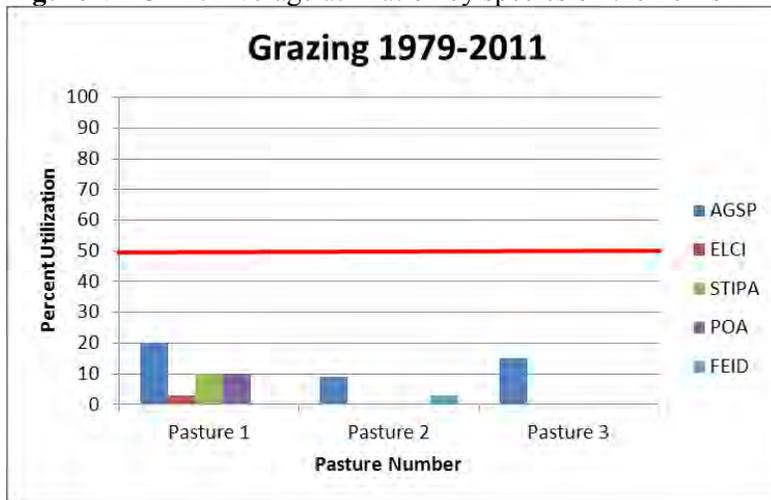
RHFAs were recorded in pasture 1 as a moderate departure from expected based on annuals cheatgrass, ventenata and bulbous bluegrass; pasture 2 recorded a none to slight departure from expected and pasture 3 recorded a moderate departure based on increased shrubs and bunchgrasses decreased and low vigor when present.

Utilization data since recorded has shown slight use (Figures VEG-26 and -27).

Figure VEG-26: October 2011 utilization photo of the Ferris FFR allotment



Figure VEG-27: Average utilization by species on the Ferris FFR allotment



Actual Use

Actual use data is consistent with authorization of 147 AUMs from 12/1 to 12/31 annually (Appendix C Actual Use). Approximately 50 percent of the allotment acres are publicly owned, and pasture 5 of the Joint allotment is used in conjunction with pasture 1 of the Ferris FFR allotment.

Evaluation of Standard 4

Evaluation Finding – Allotment/watershed is:

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

Rationale for Evaluation Finding

This allotment consists of three pastures. Pasture 1 is merged with Joint allotment pasture 5. All three pastures are dominated by native vegetation and were evaluated under Standard 4 (Native Plant Communities).

All three pastures were affected to varying degrees by a 1960 wildfire. Pastures 1 and 3 burned 70 percent or less and pasture 2 burned 5 percent. Pastures 1 and 3 have a shrub overstory and understory of bunchgrasses with interspaces occupied by annual invasive grasses. These two pastures are not meeting Standard 4 due to the minor presence of bunchgrasses and common occurrence of invasive annual grasses such as cheatgrass, North Africa grass, medusahead, and bulbous bluegrass. Pasture 2 is not meeting due to moderate to extreme functional and structural groups and increased invasive annuals. Five sites of whitetop occur in the allotment and are not a contributing factor for the allotment failing to meet Standard 4. These sites are currently on the Boise District weed program and will continue to be monitored and treated as appropriate.

Utilization data since recorded has shown slight use .Light grazing means a degree of herbage utilization that allows palatable species to maximize their herbage producing ability (Holecheck, et al. 1999).

Jackson Creek Allotment

Pasture 1

Rangeland Health Field Assessments

Two RHFAs were completed in 2003 in pasture 1. As a whole, pasture 1 has a moderate degree of departure from reference conditions for biotic integrity (Appendix D – Attribute Ratings for RHFAs).

Table VEG-15: Rangeland Health Field Assessments (RHFAs) for pasture 1, Jackson Creek allotment

#	Ecological Site
2	Shallow Claypan 12-16" with inclusions of Shallow Claypan 11-13"

The functional/structural group shows a shift to a Sandberg bluegrass and squirreltail-dominated understory, with reduced deep-rooted bunchgrasses (bluebunch wheatgrass and Idaho fescue). Vegetation cover remains dense and biological soil crusts are reduced. Annual grasses (cheatgrass, bulbous bluegrass, and medusahead) are greater than expected. The shrub component is close to potential.

Pasture 2

Rangeland Health Field Assessment

One RHFA was completed in 2003 in pasture 2. As a whole, pasture 2 has a moderate degree of departure from reference conditions for biotic integrity (Appendix D – Attribute Ratings for RHFAs).

Table VEG-16: Rangeland Health Field Assessment (RHFA) for pasture 2, Jackson Creek allotment.

#	Ecological Site
1	Shallow Claypan 11-13"

Trend

The Jackson Creek allotment has nested plot frequency transect (NPFT) trend studies located in pastures 1, 3 and 4. Sites 03S06W25, 02S05W32 and 03S05W26, in pastures 1, 3 and 4 respectively, were established in 1990 and revisited in 1996, 2003, and 2009 (Map RNGE-2).

The rangeland health assessment conducted in a Shallow Claypan 11"-13" ecological site indicated that perennial bunchgrasses dominate the site and that all structural/functional groups are present. Cheatgrass was scattered on the site and six-weeks fescue was common. Vigor and reproductive capabilities for perennial grasses were high.

Figure VEG-28: July 2011 utilization photo of pasture 2 of the Jackson Creek allotment



Pasture 3

Rangeland Health Field Assessment

2 Two RHFAs were completed in 2003 in pasture 3. As a whole, pasture 3 has a slight-to-moderate degree of departure from reference conditions for biotic integrity (Appendix D – Attribute Ratings for RHFAs).

Table VEG-17: Rangeland health field assessments (RHFAs) for pasture 3, Jackson Creek allotment

#	Ecological Site
1	Shallow Claypan 11-13" with inclusions of Shallow Claypan 12-16"
1	Shallow Claypan 12-16"

The rangeland health assessment conducted in a Shallow Claypan 12”-16” ecological site indicated a slight shift from decreaser (bluebunch wheatgrass and Idaho fescue) to increaser (Sandberg bluegrass, squirreltail) perennial grasses and some scattered cheatgrass. Nitrogen fixers were present and low sagebrush was recruiting. The second rangeland health assessment was conducted on a Shallow Claypan 12”-16” ecological site and included all structural/functional groups. Perennial bunchgrasses were slightly below expected and Japanese brome comprised 5 to 10 percent of the community. Perennial grasses had fewer than expected seedheads but otherwise displayed good vigor.

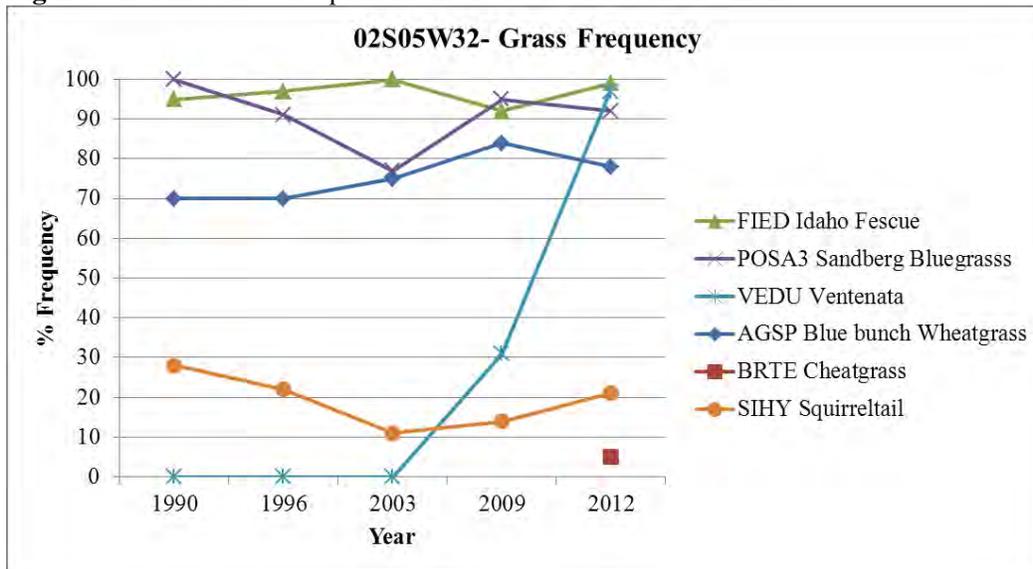
Trend

At site 02S05W32, frequency of Sandberg bluegrass, squirreltail, and bluebunch wheatgrass all declined, but Idaho fescue increased from 92 percent to 99 percent frequency (Table VEG-18, Figure VEG-29). Low sagebrush frequency remained stable at this site.

Table VEG-18: Grass frequency on pasture 3 of the Jackson Creek allotment, site 02S05W32

Grasses		Percentage				
Species		1990	1996	2003	2009	2012
AGSP	Blue bunch Wheatgrass	70	70	75	84	78
BRTE	Cheatgrass					5
FIED	Idaho Fescue	95	97	100	92	99
POSA3	Sandberg Bluegrasses	100	91	77	95	92
VEDU	Ventenata	0	0	0	31	97
SIHY	Squirreltail	28	22	11	14	21

Figure VEG-29: Grass frequencies in the Jackson Creek allotment



Pasture 4

Rangeland Health Field Assessment

Five RHFAs were completed in 2003 in pasture 4. As a whole, pasture 4 has slight-to-moderate degree of departure from reference conditions for biotic integrity (Appendix D – Attribute Ratings for RHFAs).

Table VEG-19: Rangeland health field assessments (RHFAs) for pasture 4, Jackson Creek allotment

#	Ecological Site
1	STATE LAND - Loamy 16+" with inclusions of Shallow Claypan 12-16"
1	STATE LAND - Loamy 16+"
1	Loamy 16+"
1	Loamy 16+" with inclusions of Shallow Claypan 12-16"
1	Shallow Claypan 12-16"

The rangeland health assessment that was conducted in a Shallow Claypan 12"-16" ecological site indicated that increaser grasses dominated the site, but bluebunch wheatgrass and Idaho fescue were established and common throughout the site. Lack of? bulbous bluegrass was noted as being a concern, but seedheads were plentiful on perennial grasses. The second rangeland health assessment, conducted in

a Loamy 16+” ecological site, indicated that large perennial bunchgrasses dominated the site but were lower in abundance than expected. There were more bulbous bluegrass and rabbitbrush plants than expected and western juniper was noted in trace amounts. Cover of mountain big sagebrush and rabbitbrush was slightly higher than expected. The third rangeland health assessment, conducted in a Shallow Claypan 12”-16” ecological site, showed all indicators rating as none to slight or slight to moderate. Both small and large perennial bunchgrasses dominated the site and western juniper was noted in trace amounts. Both perennial bunchgrass and shrubs appeared to be reproductively capable.

Trend

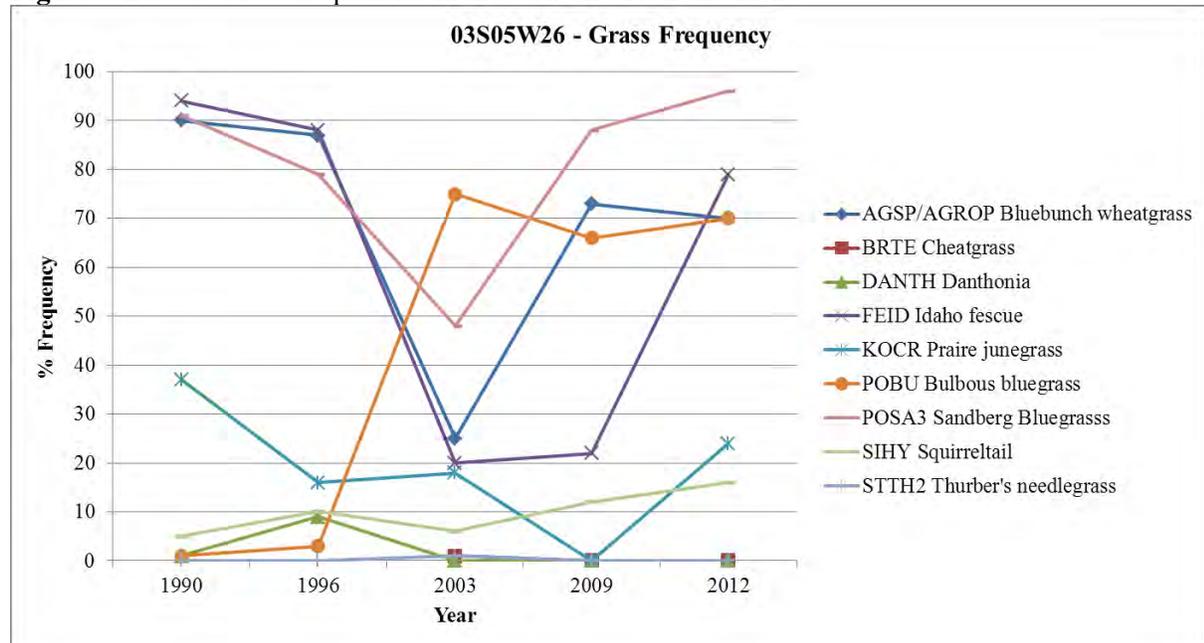
At site 03S05W26, bluebunch wheatgrass, Sandberg bluegrass, and Idaho fescue showed a long-term decrease and short-term increase in frequency. Prairie junegrass was not recorded on the site in 2009. Sandberg bluegrass appeared to increase significantly as bulbous bluegrass decreased, but it is likely that a significant portion of this observed change can be attributed to misidentification of these species.

Table VEG-20: Grass frequency in pasture 4 of the Jackson Creek allotment, site 03S05W26

Grasses		Percentage				
Species		1990	1996	2003	2009	2012
AGSP/AGROP	Bluebunch wheatgrass	90	87	25	73	70
BRTE	Cheatgrass			1	0	0
DANTH	Danthonia	1	9	0	0	0
FEID	Idaho fescue	94	88	20	22	79
KOCR	Prairie junegrass	37	16	18	0	24
POBU	Bulbous bluegrass	1	3	75	66	70
POSA3	Sandberg Bluegrasses	91	79	48	88	96
SIHY	Squirreltail	5	10	6	12	16
STTH2	Thurber's needlegrass	0	0	1	0	0

ND-No Data recorded for annual grasses.

Figure VEG-30: Grass frequencies in the Jackson Creek allotment



Pasture 5

Rangeland Health Field Assessment

1 One RHFA was completed in 2003 in pasture 5. As a whole, pasture 5 has a slight-to-moderate degree of departure from reference conditions for biotic integrity (Appendix D – Attribute Ratings for RHFAs).

Table VEG-21: Rangeland health field assessment (RHFA) for pasture 5, Jackson Creek allotment

#	Ecological Site
1	Loamy 16+ ²²

The rangeland health assessment that was conducted in a Loamy 16+²² ecological site indicated that all structural/functional groups were present. Shrubs were slightly higher than expected and perennial grasses were slightly lower. Plant vigor and reproductive ability were similar to reference conditions, with abundant seedheads and diverse age class of perennial grasses. The site was dominated by mountain big sagebrush and snowberry with lupine, horsemint, and yarrow (Figure VEG-31).

Figure VEG-31: October 2011 overview of pasture 5 of the Jackson Creek allotment



Utilization

Utilization levels from 1979 to 1996 for upland key species in the Jackson Creek allotment have been light to heavy (Figure VEG-32 Historic use). More recent data 1997 to 2011 has shown slight to light utilization (Figure VEG-33 Current use).

Figure VEG-32: Historic average utilization by species in the Jackson Creek allotment

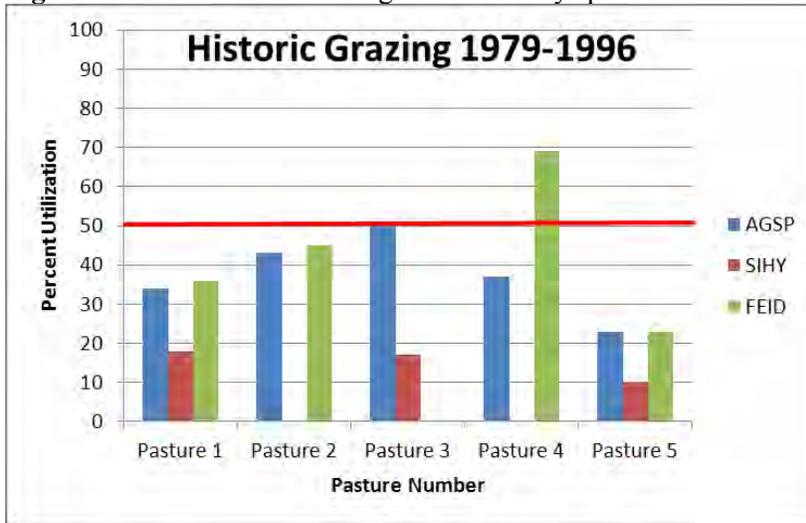
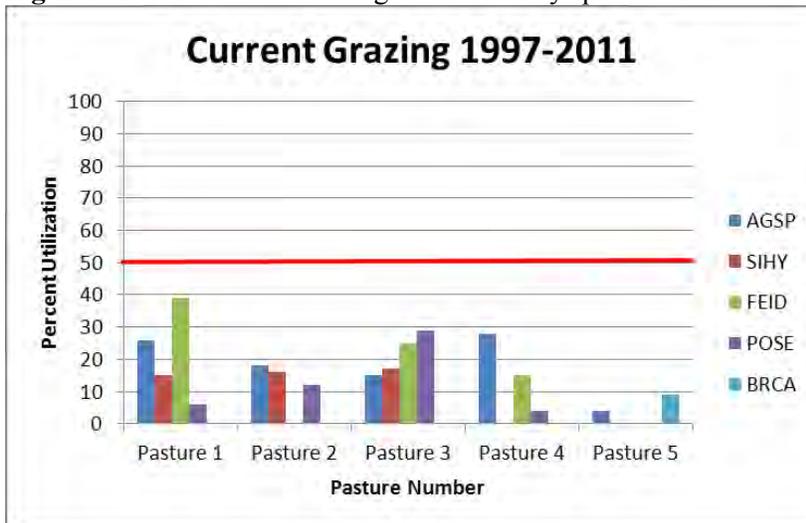


Figure VEG-33: Current average utilization by species in the Jackson Creek allotment



Actual Use

Typically, pastures 1, 2, and 3 are used during spring and summer, while pastures 4 and 5 are used during the fall. Currently, livestock grazing is authorized to occur from spring to fall (4/16-10/31). A total of 1,123 BLM AUMs are permitted.

Evaluation of Standard 4

Evaluation Finding – Allotment/watershed is:

Meeting the Standard

Not meeting the Standard, but making significant progress toward meeting

Not meeting the Standard

Rationale for Evaluation Finding

Of the five pastures in Jackson Creek allotment, pasture 1 is dominated by invasive annual weeds, and pastures 2, 3, 4, and 5 are dominated by native plant communities. Therefore pasture 1 was evaluated under Standard 6 (Exotics other than seedings) and pastures 2, 3, 4, and 5 were evaluated under Standard 4 (Native Plant Communities).

Pasture 1 – This pasture does not have any previous fire history. The current dominant vegetation is a mix of annual weeds, North Africa grass and medusahead, with Sandberg bluegrass and squirreltail as subordinates. This pasture is not meeting Standard 6. Sandberg bluegrass and squirreltail have been on a steady decline since 1990 continuing to 2012. Other perennial grasses are scarce to absent. Annual weeds have increased in the short and long term. Noxious weeds, including tamarisk and whitetop, have been chemically treated in this pasture and will continue to be monitored and treated as a part of the Boise District weed program. The occurrences of noxious weeds in this pasture do not contribute to the failure to meet the Standard.

Pasture 2, 3, 4, and 5- Pasture 2 has no fire history, pastures 3 and 5 have a burned area of 5 percent or less, and one-third of pasture 4 was burned in 1960. No known post-fire seedings occurred in these pastures. The sites have a dominant shrub overstory (mountain big sagebrush, low sagebrush, snowberry, antelope bitterbrush, rabbitbrush), with Sandberg bluegrass dominating the understory and other larger perennial grasses, such as Idaho fescue and bluebunch wheatgrass, as subordinates. Annual invasive weeds are not common throughout the pastures but are present in disturbed areas with some scattered populations. These pastures are meeting Standard 4. Vegetation trend data, only available for pastures 3 and 4, show a relatively static frequency of perennial grasses and shrub cover. The annual weed North Africa grass has increased in pasture 3.

Utilization levels from 1979 to 1996 for upland key species in the Jackson Creek allotment have been light to heavy (Figure VEG-32 Historic Use). More recent data collected from 1997 to 2011 has shown slight to light utilization (Figure VEG-33 Current Use). Light grazing means a degree of herbage utilization that allows palatable species to maximize their herbage producing ability (Holecheck, Gomez, Molinar, & Galt, 1999).

Joint Allotment

The 1996 Cow Creek fire burned approximately 30 percent of pasture 2, 90 percent of pasture 3, and 50 percent of pasture 4 ; the other half of pasture 4 was burned by the 2006 Chubby Spain fire and rested from grazing from 2007 to 2010 (Map FIRE-2).

The 2006 Chubby Spain fire covered a total of 6,011 acres and burned approximately 50 percent of pasture 4 of the Joint allotment. Inventory after the fire showed root-killed large bunchgrasses across the fire area. An active lek site has been documented on state lands within the burned area.

Aerially broadcast seedings with mixtures compressed of primarily mountain big sagebrush, Idaho fescue, bluebunch wheatgrass, Sandberg bluegrass, and forbs including flax and western yarrow was completed in the fall of 2006. The 2009 monitoring report noted that the seedings had been fully successful and livestock grazing was resumed. The site was reported at good canopy and basal cover, with correspondingly low susceptibility to wind or water erosion (USDI BLM, 2006).

Pasture 2

The Joint allotment pasture 2 RHFA data indicate two sites with slight to moderate departure from ecological site potential. Functional/structural groups are near expected potential for species structure and composition. Idaho fescue dominates the understory with bluebunch wheatgrass, Sandberg bluegrass and squirreltail. Evaluation of the RHFA data indicate the biotic integrity of pasture 2 is meeting Standard 4.

Trend

One photo plot trend site 04S06W14 is established in pasture 2. The site was established in 1986 and revisited in 1994, 2003, and 2009. The community, as represented by the photo trend site, contains low sagebrush and bitterbrush. Idaho fescue and Bluebunch wheatgrass dominate the interspaces, with scattered squirreltail and bulbous bluegrass. Shrubs and grasses have good vigor (Figure VEG-34).

Figure VEG-34: June 1986 (left) and August 2009 (right) photo trend 04S05W17 in pasture 2 of the Joint allotment



Pasture 4

Dominant visual aspect Wyethia and Wyoming big sagebrush.

Trend

One photo plot trend site 04S05W17 is established in pasture 4. The site was established in 1986 and revisited in 1994, 2003, and 2009. The community, as represented by the photo trend site, contains mountain big sagebrush, low sagebrush, bitterbrush, and encroaching juniper. Bluebunch wheatgrass and squirreltail dominate the interspaces with scattered rabbitbrush. Shrub vigor is excellent (Figure VEG-35).

Figure VEG-35: June 1986 (left) and August 2009 (right) photo trend 04S05W17 in pasture 4 of the Joint allotment



Utilization

Utilization levels from 1976 to 1996 for upland key species in the Joint allotment have generally been light to heavy. More recent data collected between 1997 and 2011 ve shown slight to moderate use, with the exception of 68 percent use on intermediate wheatgrass in 2006 at one site in pasture 4. No recent utilization data are available for pasture 5 (Figures VEG-36 and 37).

Figure VEG-36: Average utilization by species on the Joint allotment

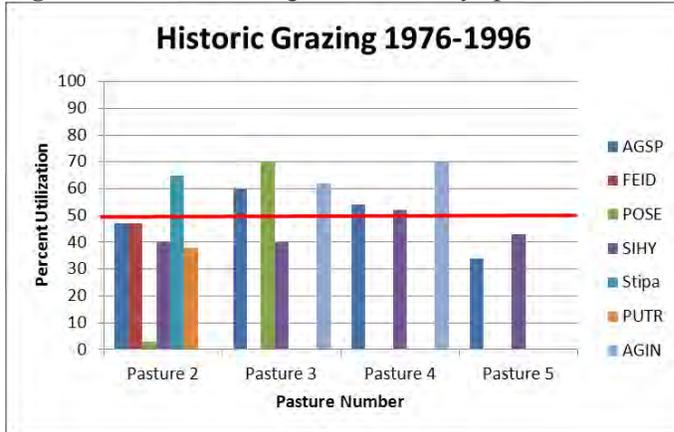
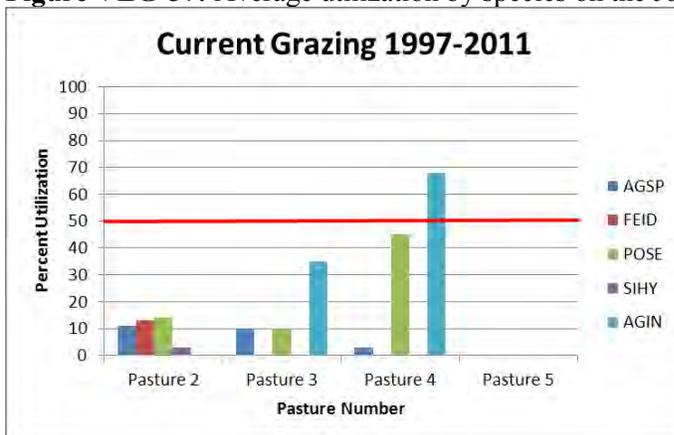


Figure VEG-37: Average utilization by species on the Joint allotment



Actual Use

Actual use data for 1990 through 2011 indicate that when grazed, the Joint allotment ranged from 283 to 1,267 AUMs, or 3 to 11 acres per AUM. Pasture 5 of the Joint allotment is used in conjunction with the Ferris FFR allotment, and therefore, the reported AUMs reflect that shortage. The allotment had no available data for grazing in 1994 and 2001 through 2004 (Appendix C Actual Use).

Evaluation of Standard 4

Evaluation Finding – Allotment/watershed is:

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

Rationale for Evaluation Finding

Of the four pastures within this allotment are managed by BLM, pastures 2, 3, 4, and 5. Pasture 5 is used in conjunction with Ferris FFR. Pastures 2 and 4 are dominated by native vegetation and are evaluated

under Standard 4 (Native Plant Communities). Pasture 3 is dominated by a rangeland seeding and is evaluated under Standard 5 (Seedings). The noxious weed whitetop is present at 15 sites within the allotment. These sites are currently on the Boise District weed program and will continue to be monitored and treated as appropriate.

Pastures 2 and 4: Both pastures burned in the 1960s, pasture 2 just under 50 percent and pasture 4 in entirety. Half of pasture 4 burned again in 2006 and was aerially seeded with a native seed mix. Seeded areas of pasture 4 were noted to be fully successful, according to the Chubby Spain ESR (USDI BLM, 2006). Vegetation photo monitoring for pasture 6 and the unseeded portion of pasture 4 reflect a scattered canopy of mountain sagebrush and bitterbrush, with pockets of low sagebrush and rabbitbrush, and an understory of squirreltail, Idaho fescue, bluebunch wheatgrass and a scattered mix of annual grasses. These two pastures are meeting Standard 4.

The Joint allotment pasture 2 RHFA data indicate two sites with slight to moderate departure from ecological site potential. Functional/structural groups are near expected potential for species structure and composition. Idaho fescue dominates the understory with bluebunch wheatgrass, Sandberg bluegrass and squirreltail. Evaluation of the RHFA data indicate the biotic integrity of pasture 2 is meeting Standard 4. One photo plot trend site 04S06W14 is established in pasture 2. The site was established in 1986 and revisited in 1994, 2003 and 2009. The community, as represented by the photo trend site, contains low sagebrush and bitterbrush. Idaho fescue and bluebunch wheatgrass dominate the interspaces with scattered squirreltail and bulbous bluegrass. Shrubs and grasses vigor is excellent. Trend data indicate pasture 2 is meeting Standard 4

Madriaga Allotment

Rangeland Health Field Assessment

During the 2003 field season, seven rangeland health summary worksheets were completed for this allotment. Long-term vegetation trend studies are established in each pasture of the Madriaga allotment; a photo-plot study site is located in pasture 1 and a nested plot frequency transect study and a separate photo-plot study site are located in pasture 2. See Map RNGE-3 for locations of assessments and trend studies, Appendix C for individual indicator ratings by location.

Nine of the 17 rangeland health indicators included in the standard matrix are related to Standard 4 and the attribute of biotic integrity. Ratings for these nine indicators are summarized in Table VEG-22 by pasture and degree of departure from reference conditions. For example, four sites were evaluated in pasture 1, for a total of 36 indicator ratings related to biotic integrity. Of these, 15 were rated as having a none to slight departure from reference site conditions or ecological site guides.

Table VEG-22: Rangeland health assessment summary

Standard 4 - Native Plant Communities*	Degree of Departure				
	None to Slight	Slight to Moderate	Moderate	Moderate to Extreme	Extreme
Pasture 1 ¹	15	15	4	2	0
Pasture 2 ²	10	15	2	0	0

¹Summarizes: 2 Shallow-Claypan 11-13”, 1 Loamy 12-16”, and 1 Shallow Claypan 12-16” ecological site

²Summarizes: 1 Loamy 12-16”, 1 Shallow Claypan 11-13”, and 1 Shallow Claypan 12-16” ecological site

Pasture 1

Rangeland Health Field Assessments

Four rangeland health evaluation worksheets were completed in 2003 for RH1A, a Loamy 12-16” ecological site; RH1B and RH1C, Shallow Claypan 11-13” ecological sites; and RH1D a Shallow Claypan 12-16” ecological site. Refer to Map RNGE-3 for the location of the rangeland health evaluation worksheets and Appendix D for individual indicator ratings.

At RH1A, a Loamy 12-16” ecological site in the northwestern portion of the pasture, the expected plant community is basin big sagebrush, Idaho fescue, and bluebunch wheatgrass. At this site, three of the nine indicators related to Standard 4 were rated as none to slight, five were slight to moderate and two were moderate to extreme. Relative abundance of both bluebunch wheatgrass and Idaho fescue is well below potential; these species only represent a minor component in the plant community. Structurally smaller bunchgrasses such as *Poa* sp. and invasive annuals dominate the understory. The indicator for invasive species was rated in the moderate range of departure from expected conditions for the ecological site, due to the common occurrence of cheatgrass and bulbous bluegrass. The reproductive capability of perennial plants was rated as a moderate to extreme departure from reference conditions due to lack of seedheads on the perennial grasses in the shrub interspaces. The amount of plant litter is lower than expected and is mostly contributed to by annual grasses.

At RH1B, and RH1C, both Shallow Claypan 11-13” ecological sites, the expected plant community is low sagebrush and bluebunch wheatgrass. The field forms identify a shift in the composition of the native plant community involving a reduction or replacement of decreaser grasses by increaser and annual grasses. Bluebunch wheatgrass occurrence is lower than reference site conditions. Where bluebunch wheatgrass is present, it is primarily found under the protective canopy cover of shrubs. Sandberg bluegrass and invasive species (ventenata, cheatgrass, and bulbous bluegrass) are common in shrub interspaces at these sites. The indicator for reproductive capability of perennial plants rated in the slight-to-moderate range of departure from expected conditions for the ecological site. Perennial grasses that occur in the shrub interspaces are weaker in terms of vigor and seed head production than grasses occurring under the shrubs. At RH1B and RH1C, the indicator for invasive species is in the slight-to-moderate range of departure from expected conditions. At RH1B bulbous bluegrass, ventenata, and smooth brome are scattered to common; at RH1C, cheatgrass also occurs as a scattered understory component. The amount of litter is lower than expected at RH1B and RH1C, and is contributed to mostly by annual grasses. Bare ground and soil surface structure are somewhat altered from reference site conditions, reducing soil surface resistance to erosion.

RH1D resembles reference conditions based on the Shallow Claypan 12-16” ecological site description. Low sagebrush is the dominant shrub species; the understory is dominated by Idaho fescue and bluebunch wheatgrass. At this site, all functional and structural groups are present in proportions that resemble reference site conditions. Bulbous bluegrass is present in trace to scattered amounts. The plant community is near potential, resulting in proper vegetative cover and litter relative to site potential. The soils are stable and resistant to erosion.

Trend

One photo plot monitoring site 04S05W04 is located in pasture 1 of the Madriaga allotment. It was established in 1986 and was revisited in 2003 and 2009. The plant community is dominated by low sagebrush with an understory consisting of Sandberg bluegrass, bottlebrush squirreltail and Nevada bluegrass.

In the 2009 landscape view photographs, shrubs appear denser than in 1986, and Sandberg bluegrass makes up the majority of interspatial grass. Close-up photographs of the photo plot show higher shrub density in 2009 when compared to 1986. Shrubs and grasses displayed high vigor and well established (Figure VEG-38).

Figure VEG-38: September 1986 (left) and August 2009 (right) photo trend in the Madriaga allotment on site 04N05W4



Pasture 2

Rangeland Health Evaluation Worksheets

In 2003, three rangeland health evaluation worksheets were completed in this pasture: RH2A, a Shallow Claypan 11-13" ecological site; RH2B a Shallow Claypan 12-16" ecological site; and RH2C, a Loamy 12-16" ecological site. Refer to Map RNGE-3 for the rangeland health evaluation locations, and Appendix D for individual indicator ratings.

At RH2A, a Shallow Claypan 11-13" ecological site in the western portion of the pasture, the native plant community is low sagebrush and bluebunch wheatgrass. At this site, bluebunch wheatgrass is below potential, representing a minor component of the plant community. Where present, bluebunch wheatgrass plants are primarily found under the protective canopy cover of shrubs. Sandberg bluegrass, bottlebrush squirreltail, bulbous bluegrass, and invasive species are more common than expected in interspaces. Sandberg bluegrass has become the dominant grass species. The indicator for reproductive capability of perennial plants rated in the slight-to-moderate range. Perennial bunchgrasses often occur under shrub canopy, and are less common in the shrub interspaces. Perennial bunchgrasses show fair to good vigor overall; however, the perennial grasses that occur in the shrub interspaces are relatively weaker in terms of vigor and seed head production than grasses occurring under the shrubs. Some recruitment and establishment of Idaho fescue and bluebunch wheatgrass in interspaces were noted.

At RH2B, a Shallow Claypan 12-16" ecological site, in the east-central portion of the pasture the plant community is low sagebrush, Idaho fescue, and bluebunch wheatgrass. Low sagebrush is the dominant overstory species, with an understory consisting of Idaho fescue, bluebunch wheatgrass, and Sandberg bluegrass. Overall, plant community composition nearly reflects site potential in terms of relative abundance of the dominant plant species. Bluebunch wheatgrass and Idaho fescue are the dominant understory species, but their occurrence is slightly below site potential. Sandberg bluegrass occurrence is higher than expected for the site. The reproductive capability of perennial plants indicator rated in the slight-to-moderate degree of departure from expected conditions. Perennial bunchgrasses show fair to good vigor overall; however, the perennial grasses that occur in the shrub interspaces are relatively weaker in terms of vigor and seed head production than grasses occurring under the shrubs.

At RH2C, the plant community in the Loamy 12-16” ecological site in the southeastern portion of the pasture is basin big sagebrush, Idaho fescue, and bluebunch wheatgrass. The rangeland health evaluation conducted in this ecological site shows a slight shift from site potential for native plant composition. Shrubs, including sagebrush and antelope bitterbrush, are dominant. The understory consists of Idaho fescue, bluebunch wheatgrass, and Sandberg bluegrass. Sandberg bluegrass occurrence is slightly higher than expected. Idaho fescue and bluebunch wheatgrass occurrence is somewhat lower than expected, but these grasses appear to be re-establishing in the shrub interspaces. The plant community composition is near potential, resulting in proper vegetative cover and plant litter relative to ecological site guides. The soils are stable and appear resistant to erosion though some water flow patterns and pedestaled bunchgrasses were noted. The reproductive capability of perennial plants appears adequate to enable reproduction and recruitment of plants in response to favorable climatic conditions.

At all assessment locations, invasive species are present. There is a slight-to-moderate degree of departure at RH2A and RH2C due to the scattered occurrence of cheatgrass and bulbous bluegrass. There is a moderate departure from expected conditions at RH2B, due to the common occurrence of ventenata and *Bromus* species.

Trend

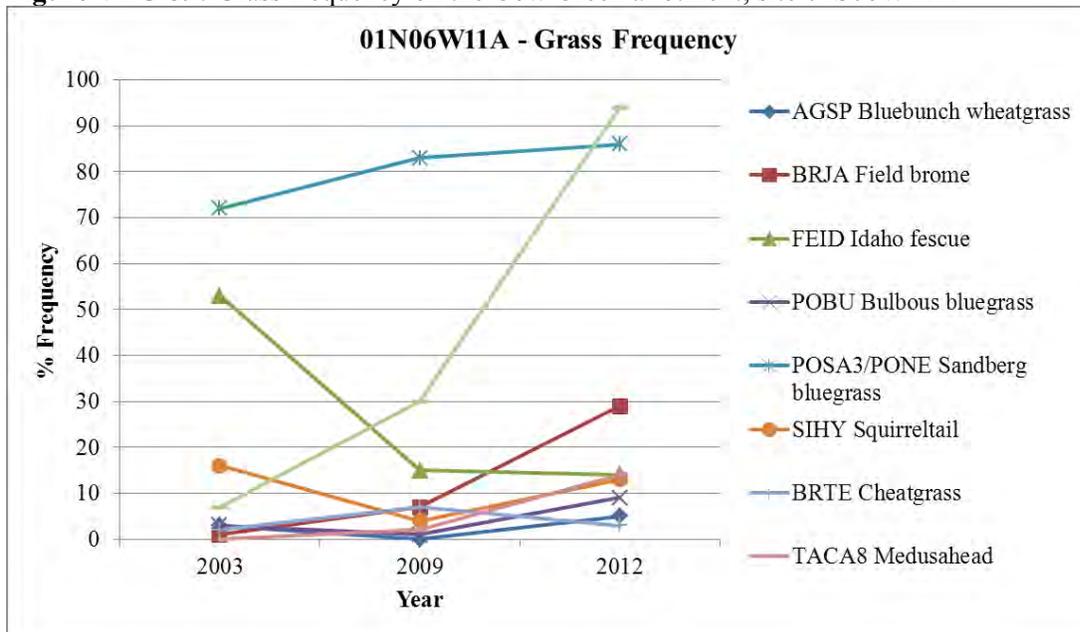
One nested plot frequency transect study site 01S06W11A is established in pasture 2 in 1986 with four plots only and was re-read in 2003 and 2009. The community, as represented by the trend site, is dominated by low sagebrush. The understory is made of Idaho fescue, bluebunch wheatgrass, and Sandberg bluegrass.

Bluebunch wheatgrass, Idaho fescue, bulbous bluegrass squirreltail have decreased in frequency since 2003. Sandberg bluegrass shows, medusahead and North Africa grass has increased in frequency (Table VEG-23, Figure VEG-39). Low sagebrush is decreasing in frequency but seedlings are increasing.

Table VEG-23: Grass frequency on the Cow Creek allotment, site 01S06W11A

Grasses		Percentage		
Species		2003	2009	2012
AGSP	Bluebunch wheatgrass	3	0	5
BRJA	Field brome	1	7	29
FEID	Idaho fescue	53	15	14
POBU	Bulbous bluegrass	3	1	9
POSA3/PONE	Sandberg bluegrass	72	83	86
SIHY	Squirreltail	16	4	13
BRTE	Cheatgrass	2	7	3
TACA8	Medusahead	0	2	14
VEDU	North Africa grass	7	30	94

Figure VEG-39: Grass frequency on the Cow Creek allotment, site 01S06W11A



One photo-plot study site 01S06W11B is established in pasture 2. Based on general view and photo plot photos, perennial bunchgrass vigor and dominance appear to be lower in 1983 than in 2009. Large perennial grasses appear structurally dominant over shrubs in 1983; however, in 2009, the perennial grasses are less visually dominant. Bare ground is more common in 2003 compared to 2009, and close-ups of the photo plot show a decrease in shrub occurrence from 1983 to 2009, with reduced vigor of shrubs. Appears to have a seeding or fire in the background in 2009 (Figure VEG-40).

Figure VEG-40: September 1983 (left) and August 2009 (right) photo trend in the Madriaga allotment on site 01N06W11B



Utilization

Utilization levels from 1976 to 1996 for upland key species in the Madriaga allotment have generally been light to moderate. More recent data collected between 1997 and 2011 have shown slight to light use (Figures VEG-41 and 42).

Figure VEG-41: Historic average utilization by species on the Madriaga allotment

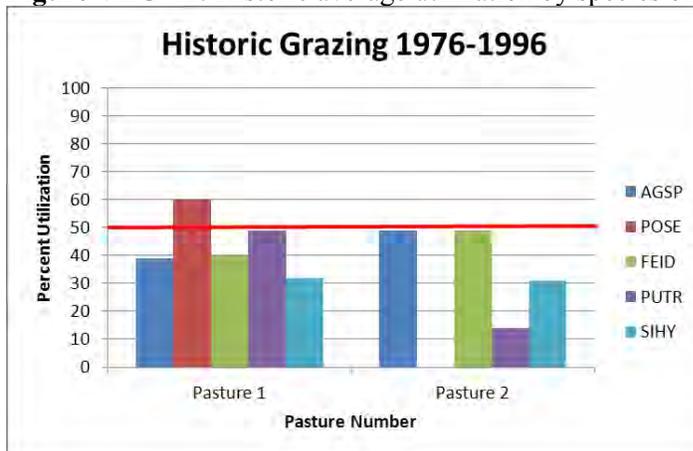
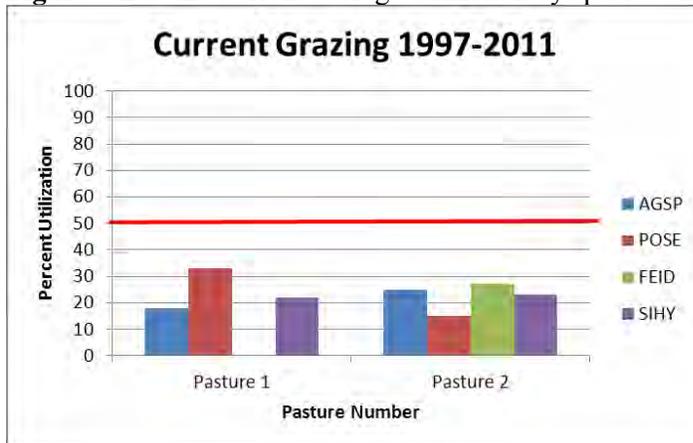


Figure VEG-42: Current average utilization by species on the Madriaga allotment



Actual Use

Actual use data for 1990 through 2011 indicates that when grazed, the Madriaga allotment ranged from 119 to 908 AUMs, or 4 to 34 acres per AUM. The allotment had no available data for grazing in 1990, 1997, 1999, 2000, 2002, and 2003 (Appendix C Actual Use).

Evaluation of Standard 4

Evaluation Finding – Allotment/watershed is:

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

Rationale for Evaluation Finding

Madriaga has two pastures evaluated under Standard for and are not meeting. Standard 4 is not met on the Madriaga allotment. Pasture 1 RHFAs data indicates that the functional/structural group is dominated by Sandberg’s bluegrass and Squirreltail, and scattered invasive species. Biotic integrity of Pasture 1 is not meeting Standard 4. Pasture 2 Bluebunch wheatgrass, Idaho fescue, bulbous bluegrass squirreltail have decreased in frequency since 2003. Sandberg bluegrass shows, medusahead and North Africa grass has increased in frequency. Therefore, the dominance of exotic species from historic livestock grazing and 1960s wild fire is a significant factor in not meeting Standard 4.

Rats Nest Allotment

There are four nested plot frequency trend sites and one photo point established in the Rats Nest allotment. Detailed information is in trend section (Map RNGE-1). In addition, the Hardtrigger HMA is located within the allotment and is discussed in the utilization and rationale section.

Previous Assessment

The 2001 Determination for the Rats Nest allotment specified it was not meeting the Standard, and livestock grazing management practices are significant factors. Native plant communities were not being maintained or improved to ensure the proper functioning of ecological processes and continued productivity and diversity of native plant species. Those portions of the pasture that burned in the past were missing most of the plant community components and displayed a dominance of cheatgrass. Plant vigor was inadequate throughout the allotment, leading to a lack of reproduction and recruitment of plants during favorable climatic events. The ability of the site to conduct nutrient cycling was impacted by inadequate amounts of litter and standing dead plant material. The allotment did not conform with Guidelines for Livestock Grazing Management 1, 3, 4, 9, and 12.

Rangeland Health Field Assessment

Table VEG-24: Rangeland health field assessments for the Rats Nest allotment

#	Ecological Site
1	Loamy 10-13" inclusion within Shallow Claypan 11-13" (Alkali Springs #2 fire 1972, near trend site 01N04W33)
1	Loamy 10-13"

These assessments indicate some reduction in bluebunch wheatgrass, which is expected to be dominant at site potential. Site production is dominated by shrubs (mainly Wyoming big sagebrush and green rabbitbrush), with Sandberg bluegrass as the interspatial dominant species. Thus, the rating for the functional/structural groups is a slight-to-moderate departure. At one site, the litter amount and annual production have been reduced due to the dominance of Sandberg bluegrass and a lack of bluebunch wheatgrass, while the other assessment site is at or near potential for both indicators. Soil surface indicators are at or near potential, with good crust cover, surface gravels and sufficient vegetation to provide armoring against erosion. No compaction layer or plant mortality were observed at either site. Seedhead production was noted to be adequate for perennial species. Cheatgrass was the only invasive noted at either site, in trace amounts.

The overall biotic integrity attribute is rated with a none-to-slight departure for the allotment, based on all the components of the ecosystem providing ability of the assessment sites.

Noxious Weeds

Within this single-pasture allotment, there are three documented noxious weed sites, as displayed in the BLM Boise District Office weed GIS layer. All three sites are in the northeastern portion of the allotment. There are two Russian olive sites, both last visited in 2005. One site is less than 0.1 acre in size and was chemically treated during the visit. The other site is 0.1 to 1 acre in size and was not treated in 2005. One tamarisk site, smaller than 0.1 acre, is also documented, and was last chemically treated in 2005. These sites will continue to be targeted for treatment by the BLM Boise District weed program.

Trend

There are four nested plot frequency transect trend sites in the Rats Nest allotment; they represent the elevation ranges of the plant communities. One site was established in 1986, two in 1988, and one in 1991. All sites were assessed last in 2010 (Tables VEG-25 and Figures VEG-43). The Loamy community, as represented by these trend sites, contains a moderate canopy of sagebrush. Interspatial decreaser grasses were minimal, with increaser species dominating. Site 01N04W20, established for wild horse grazing for the Hardtrigger Horse Management Area (HMA), showed a decrease in bluebunch wheatgrass frequency.

Bluebunch wheatgrass frequency decreased at all sites, significantly at one of the four sites. Sandberg bluegrass dominated the herbaceous layer. Two out of four sites showed increased cheatgrass presence since the 2005 assessment (see Tables VEG-25-27 and Figures VEG-43-45).

Wyoming big sagebrush frequency data indicated a long-term decrease in one out of the four trend sites. However, shrub density showed significant decreases on all four sites.

Table VEG-25: Grass frequencies on site 01N04W22 on the Rats Nest allotment

Grasses		Percentage				
Species	Common Name	1988	1994	2000	2005	2010
AGSP	Bluebunch wheatgrass	12	11	24	8	8
BRTE	Cheatgrass	ND	ND	ND	16	5
POSA3	Sandberg bluegrass	97	99	100	98	99
SIHY	Squirreltail	31	35	37	32	43
STTH2	Thurber's needlegrass	0	0	0	0	1

ND-No Data recorded for annual grasses.

Figure VEG-43: Grass frequencies on site 01N04W22 on the Rats Nest allotment

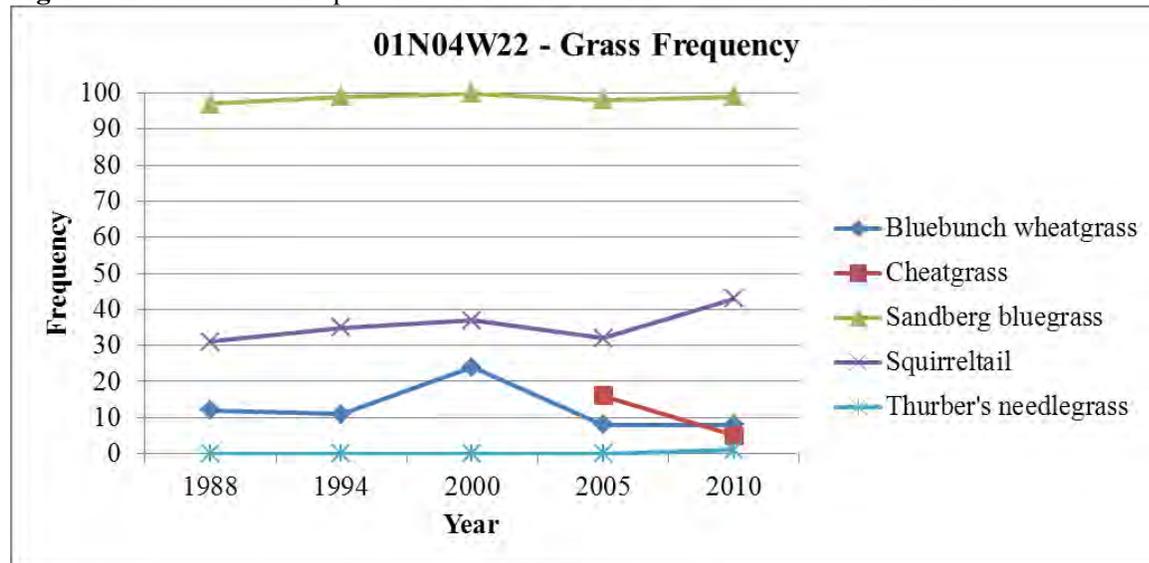


Table VEG-26: Grass frequencies on site 01N04W20 on the Rats Nest allotment; this site was established to reflect wild horse grazing on the Hardtrigger HMA

Grasses		Percentage		
Species	Common Name	1991	2005	2010
AGSP	Bluebunch wheatgrass	71	58	57
SIHY	Squirreltail	0	5	0
BRTE	Cheatgrass	ND	10	ND
POSA3	Sandberg bluegrass	100	99	98

ND-No Data recorded for annual grasses.

Figure VEG-44: Grass frequencies on site 01N04W20 on the Rats Nest allotment

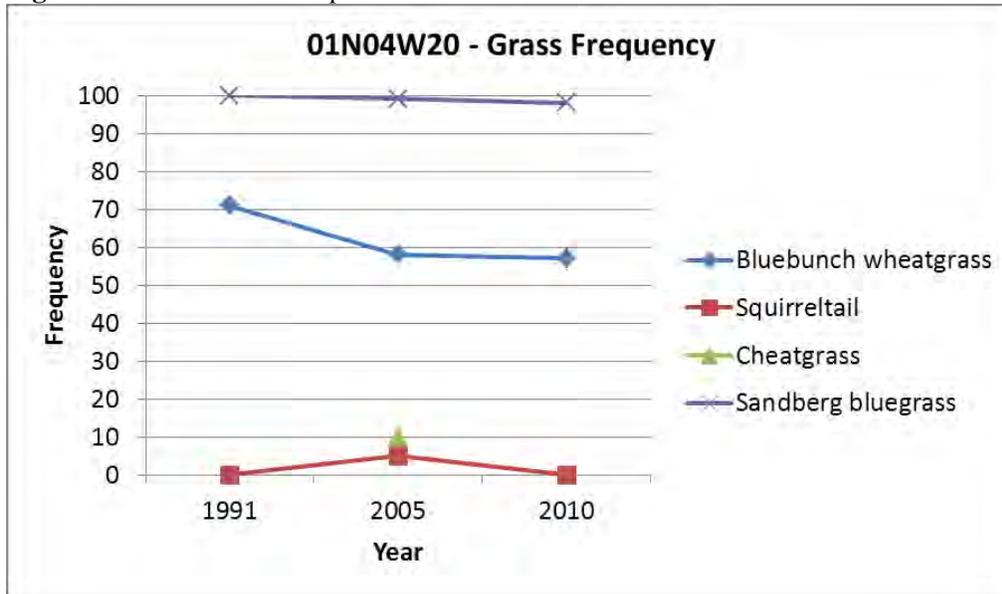


Table VEG-27: Grass frequencies on site 01N04W23 on the Rats Nest allotment

Grasses		Percentage				
Species	Common Name	1988	1994	2000	2005	2010
AGSP	Bluebunch wheatgrass	0	0	2	0	0
POSA3	Sandberg bluegrass	100	100	100	92	98
SIHY	Squirreltail	11	16	12	13	15
BRTE	Cheatgrass	ND	ND	ND	58	78

ND-No Data recorded for annual grasses.

Figure VEG-45: Grass frequencies on site 01N04W23 on the Rats Nest allotment

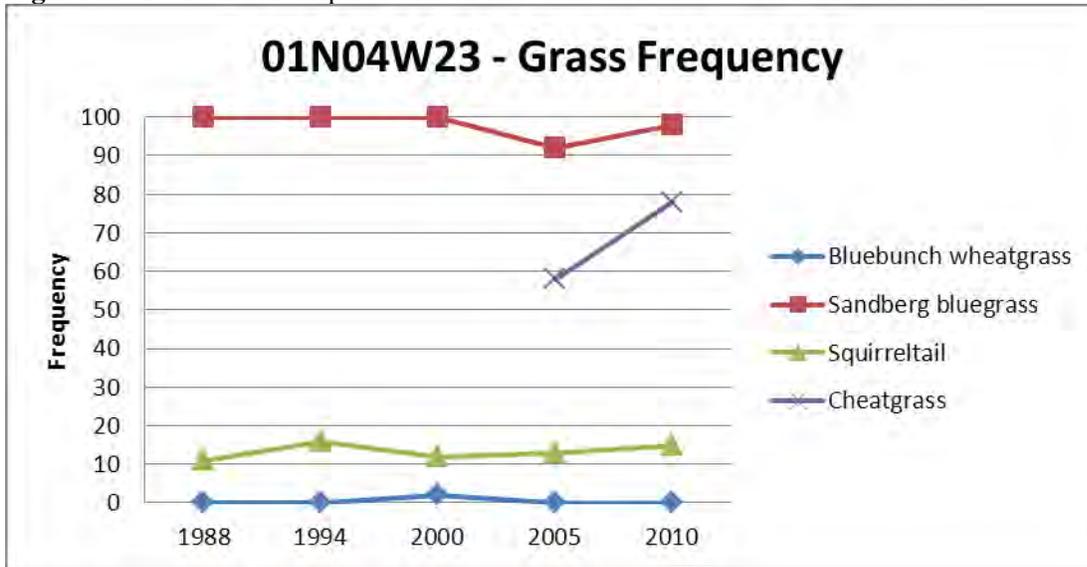
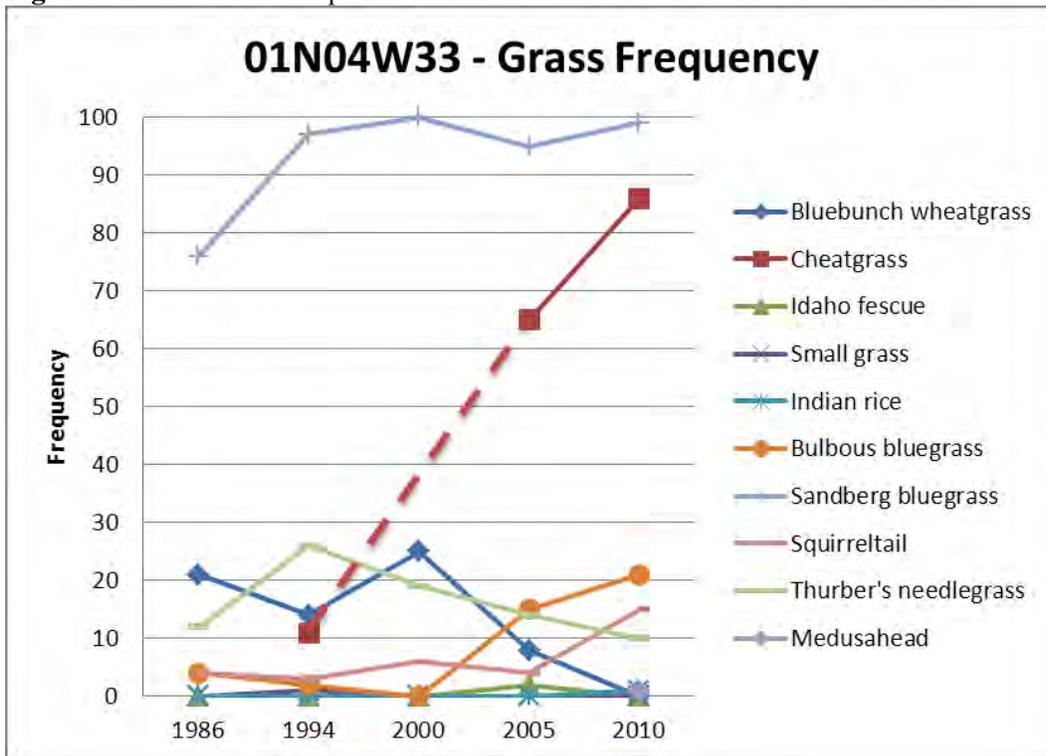


Table VEG-28: Grass frequencies on site 01N04W33 on the Rats Nest allotment

Grasses		Percentage				
Species	Common Name	1986	1994	2000	2005	2010
AGSP	Bluebunch wheatgrass	21	14	25	8	0
BRTE	Cheatgrass	ND	11	ND	65	86
FEID	Idaho fescue	0	0	0	2	0
MICRO	Small grass	0	1	0	0	0
ORHY	Indian rice	0	0	0	0	1
POBU	Bulbous bluegrass	4	2	0	15	21
POSA3	Sandberg bluegrass	76	97	100	95	99
SIHY	Squirreltail	4	3	6	4	15
STTH2/STIPA	Thurber's needlegrass	12	26	19	14	10
TACA8	Medusahead	ND	ND	ND	ND	1

ND-No Data recorded for annual grasses.

Figure VEG-46: Grass frequencies on site 01N04W33 on the Rats Nest allotment



Dashed line bridges 1994 to 2005 due to data gap in 2000 for cheatgrass at this site.

The general view photos show these communities are moderately dominated by Wyoming big sagebrush and small bunchgrasses, generally Sandberg bluegrass, and showed no apparent trend; however cheatgrass was seen in the 2010 photos (Figures VEG 10-13).

Figure VEG-47: August 1991 (left) and June 2010 (right) photo trend in the Rats Nest allotment showing no apparent trend on site 01N04W020



Figure VEG-48: April 1988 (left) and June 2010 (right) photo trend in the Rats Nest allotment showing no apparent trend on site 01N04W022



Figure VEG-49: April 1988 (left) and June 2010 (right) photo trend in the Rats Nest allotment showing presence of cheatgrass in 2010 on site 01N04W023



Figure VEG-50: From left to right: May 1986 (left) and June 2010 (right) photo trend in the Rats Nest allotment showing presence of cheatgrass in 2010 on site 01N04W033

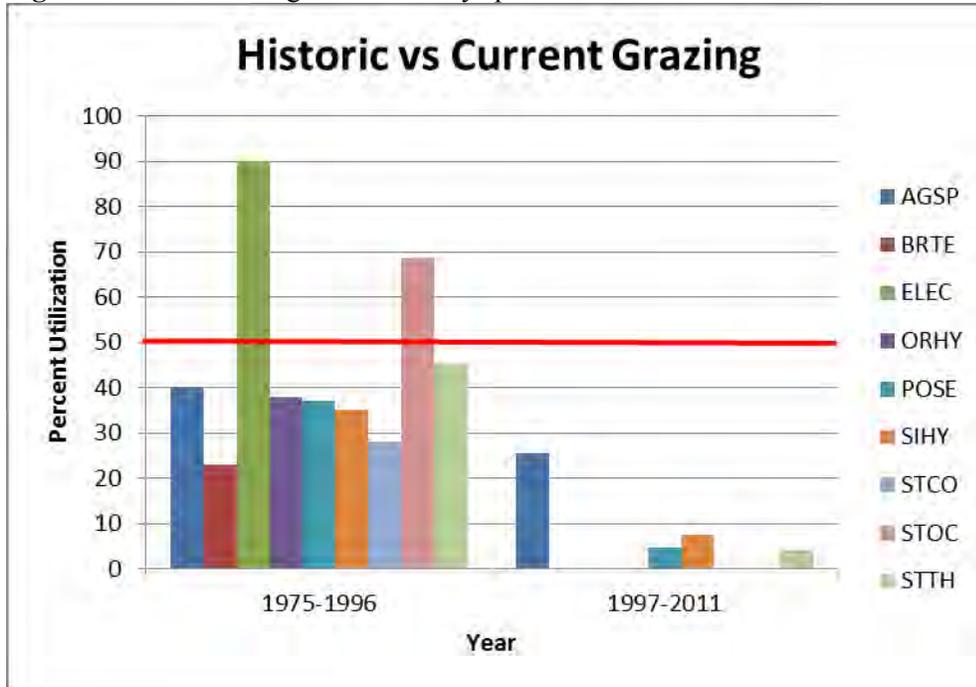


Utilization

Utilization levels from 1975 to 1996 for upland key species in the Rats Nest allotment have generally been light to heavy. More recent data taken from 1997 to 2011 have shown slight to light use. Utilization

is from both wild horses and cattle in this allotment. Specifically in 1997, data showed wild horse use was 70 percent on bluebunch wheatgrass. Census data for 1997 showed 125 head of wild horses, which exceeds the animal management level of 98 head (Appendix F).

Figure VEG-51: Average utilization by species on the Rats Nest allotment



Horizontal line represents 50 percent utilization as specified in Owyhee Resource Management Plan.

Although 90 percent utilization was recorded in 1976 on basin wildrye, this was a one-time-only recording and not a true average. All of the stipa grasses recorded during the period from 1975 to 1996 may have been the same species.

Actual Use

Actual use data for 1990 to 2011 indicate that when grazed, the Rats Nest allotment ranged from 251 to 605 AUMs, or 8 to 19 acres per AUM. The allotment was either rested or had no available data for grazing in 1991, 1993, 1996, 1999, 2001, and 2004. During this time, the allotment was grazed in the spring during critical growth periods for grasses (April and May) (Appendix C Actual Use).

Evaluation of Standard 4

Evaluation Finding – Allotment/watershed is:

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

Rationale for Evaluation Finding

The desired conditions for the native plant communities are to implement grazing practices that improve or maintain native rangeland species to attain composition, density, foliar cover and vigor appropriate to site potential (USDI BLM, 1999). The site potential for the Rats Nest allotment is mostly Wyoming big

sagebrush/ bluebunch wheatgrass plant communities. However, the existing condition of most of the allotment is dominated by Wyoming big sagebrush; Sandberg bluegrass and cheatgrass co-dominate the grass community with moderate amounts of bluebunch wheatgrass. All the components of the reference community on the Rats Nest allotment are present; however, a shift has occurred to a more Sandberg bluegrass-dominated, grazing-resistant state. The community composition dominated by small bunchgrasses and cheatgrass is a significant factor in the failure to meet Standard 4.

Approximately 57 percent of this allotment has been affected by wildfire since the 1970s. This allotment is predominately sagebrush overstory with Sandberg bluegrass understory. Invasive annual grass species are present in trace amounts. Although the RHFA data only indicate a slight to moderate reduction in deep-rooted bunchgrasses, the trend data identify an apparent decrease in deep-rooted bunchgrasses and shrub density at all sites and an increase of invasive annual weeds at half the sites. Russian olive and tamarisk are present in the northernmost portion of the allotment. These sites are currently on the Boise District weed program monitoring and treatment program and will continue to be treated in the future.

Based on RHFA data, the overall departure rating from site potential for this single-pasture allotment is none-to-slight for biotic integrity. Dominant bunchgrasses that are expected at site potential occur, but in a reduced incidence. Additionally, slight annual-production and litter-amount departures were noted. Even with these concerns, the biotic integrity indicators, when compared to ecological site descriptions, lead to a finding that biotic attributes within the allotment are somewhat similar to those present at ecological site potential. Healthy, productive, and diverse populations of native plants are maintained to provide for proper nutrient cycling, hydrologic cycling, and energy flow. The RHFA data (RHFA ratings Appendix D) indicate the biotic integrity of this allotment is mildly compromised and is meeting Standard 4.

The only recorded noxious weed sites in the BLM Boise District weed database are present in the northeast corner of the allotment. These sites occur in only a fraction of the allotment and do not play a role in contributing to whether the Rats Nest allotment meets Standard 4.

Trend data indicate good perennial shrub cover and decreased perennial grass vigor with apparent increased annuals. However, as noted above, a shift has occurred to a different state. It is generally not economically feasible to move this state back toward a reference community. Trend data show decreases in frequency of bluebunch wheatgrass. Sandberg bluegrass has shown a static trend in frequency, but it is dominating the sites. Fifty-eight percent of the Rats Nest allotment has been affected by fire. According to the trend data, the increased presence of cheatgrass in the native plant communities and a shift in sites that are dominated by small bunchgrasses are significant factors in failing to meet Standard 4.

Utilization levels have been slight to light (5 to 25 percent) on key species across the Rats Nest allotment. Utilization is from both wild horses and cattle in this allotment (Figure VEG-51). Specifically in 1997, data showed wild horse use was 70 percent on bluebunch wheatgrass. Census data for the Hardtrigger HMA in 1997 showed 125 head, which exceeded the animal management level of 98 head (Appendix F). Although the average use doesn't reflect this one-time heavy use, this could be a component in decreased frequency of bluebunch wheatgrass occurrence.

Actual use grazing at 8 to 19 acres per AUM has occurred for approximately 8 weeks during the critical growth period (April-May) in the Rats Basin allotment. Repeated light use has occurred, when not rested, during the critical growth period (April-May) on the grasses. The allotment was rested in 6 of the 26 years grazed, as displayed in the actual use tables; the last rest was 8 years ago. Actual use, season of use, and number of livestock are factors in the failure to meet Standard 4.

Sands Basin Allotment

Pasture 4 of the Sands Basin allotment is the only pasture evaluated under Standard 4 - Native Plant Communities and consists of approximately 85 percent native plant communities. The other three pastures are discussed under Standard 5 - Seedings. Pasture 4 contains two trend sites, discussed in detail below (Map RNGE-1).

The 2002 Trimble fire burned approximately 797 acres, or approximately 14 percent of pasture 4. Of the acres burned in the Trimble fire, 732 acres were aerial seeded, and 58 of those acres were also drill-seeded during the fall of 2002 and winter of 2003. The seed mix included bluebunch wheatgrass, squirreltail, Sandberg bluegrass, and big sagebrush. Data showed increases in all monitored seedings and that these seedings were meeting plant densities as described in the Trimble Emergency Fire Rehabilitation monitoring report (USDI BLM, 2005).

Nine RHFAs were completed for Sands Basin allotment in 2007; three of these occur within pasture 4 and will be discussed below. The remaining seven are located in pastures 1, 2, and 3 within seedings and, thus, are discussed under Standard 5 – Seedings. See Map RNGE-1 for locations of each RHFA.

The Sands Basin Wild Horse Management Area is within the allotment and is discussed in the utilization and rationale section (Appendix F).

Previous Assessment

Within the 2001 Determination for Sands Basin allotment, the allotment is split into Standard 4 (Native Plants) and Standard 6 (Exotic Plant Communities, Other than Seedings). Below is the Determination for Standard 4.

The Sands Basin Determination rated all pastures as Not Meeting the Standard, Livestock Grazing Practices are Significant Factors. The structure of plant communities in pastures 1 and 2 was better than those in pastures 3 and 4, which have the poorest community composition and diversity. Large bunchgrasses in pasture 4 were minimally present, along with inadequate perennial forbs and microbotic crust composition and distribution. Plant vigor was adequate in pastures 1, 2, and 3 and inadequate in pasture 4. Invasive plants were present throughout the allotment, with cheatgrass scattered to common; medusahead rye and rabbitbrush were scattered to common, with areas of dominance in pasture 4. The allotment did not conform to Guidelines for Livestock Grazing Management 1, 3, 4, 9, and 12.

Pasture 4

Rangeland Health Field Assessments

Table VEG-29: Rangeland health field assessments (RHFAs) for pasture 4 of the Sands Basin allotment

#	Ecological Site
1	Loamy 11-13" with inclusions of Shallow Claypan 11-13" (Johnstone fire, 1960)
1	Loamy 11-13" / Shallow Claypan 11-13" (Trimble fire, 2002)
1	Shallow Claypan 11-13" (Johnstone fire, 1960)

All three RHFA sites within pasture 4 have been affected by fire - two by the Johnstone fire in 1960 and one by the Trimble fire in 2002 (Table ALLOT-30). The RHFA sites affected by the Johnstone fire show little to no signs of a remnant seeding. In addition, the Trimble fire burned over one RHFA; however, this is not within an area rehabilitated post-fire. All RHFAs note a reduced amount or lack of large

bunchgrasses, such as bluebunch wheatgrass. Sites have shifted or are shifting toward a dominance of Sandberg bluegrass. The shrub component is either near what is expected or lacking. Functional/structural groups are rated with a moderate departure from potential.

Some rabbitbrush and sagebrush decadence was noted, and some die-out of pedestalled Sandberg bluegrass led to a plant mortality/decadence rating of a moderate departure from potential. Invasive species (cheatgrass and medusahead) are scattered and often dominate the sites. The invasive plant indicator rates at moderate to extreme. Litter amount has an overall rating of slight to moderate, mainly due to the shift from perennial bunchgrasses to annual grass dominance.

Soil loss is rated at a moderate departure from potential, with loss evident in the interspaces and associated with water flow paths and pedestalling that has exposed roots. The site was rated as a slight to moderate departure for reproductive capability, due to some reduced reproductive capability for sagebrush and the pedestalled Sandberg bluegrass. However, rabbitbrush was in-flower, and good seedstalk production was noted on Sandberg bluegrass that was not pedestalling. Annual production and soil surface resistance to erosion are close to expected, with a rating of slight to moderate. Overall, the biotic integrity attribute for pasture 4 was rated as moderate.

Noxious Weeds

The majority of known noxious weeds within pasture 4 occur on a north-south road that bisects the pasture. The roadside noxious weeds were treated regularly with several chemical treatments of puncturevine (*Tribulus terrestris*) from 2004 to 2009, mechanical treatment of purple loosestrife (*Lythrum salicaria*) in 2003, and chemical treatment of whitetop (*Cardaria draba*) in 2006. To the west of this road are three additional noxious weed sites. Canada thistle (*Cirsium arvense*) is known at two sites that are 0.1 to 1 acre in size and were treated in 2004. Scotch cottonthistle is present in the third site west of the road, which is approximately 0.25 acres in size and was chemically treated in 2007. These sites will continue to be treated as a part of the BLM Boise District weed program.

Trend

Two nested-plot frequency transect study sites (01N06W26 and 01N05W30) are established in pasture 4. The sites were established in 1991 and revisited in 1994, 2000, 2005 and 2010. The community, as represented by the trend site, contains a scattered canopy of big sagebrush with pockets of low sagebrush and rubber rabbitbrush. The interspatial areas are occupied by mostly Sandberg bluegrass, squirreltail, fescue, field brome, cheatgrass and medusahead.

Bluebunch wheatgrass has been lost at both sites, one of which was affected by the 2002 Trimby Fire. Sandberg bluegrass shows a decrease in frequency at one site and increase at the other. Crested wheatgrass, field brome, medusahead, fescue, Japanese brome and cheatgrass all show significant increases in frequency from 1991 to 2010 (Tables VEG-30 and 31, Figures VEG-52 and 53).

Big sagebrush decreased in frequency while rubber rabbitbrush increased from 1991 to 2010. Shrub density experienced an upward trend for rubber rabbitbrush and decreased in low sagebrush and big sagebrush species.

Table VEG-30: Grass frequencies in site 01N06W26 on the Sands Basin allotment

Grasses		Percentage	
Species	Common Name	1991	2010
AGSP	Bluebunch wheatgrass	27	0
BRJA	Field brome	0	2
POSA3	Sandberg bluegrass	100	96
SIHY	Squirreltail	36	10
BRTE	Cheatgrass	ND	96
VULPA	Fescue	0	36
TACA8	Medusahead	ND	18

ND = No Data recorded for annual grasses. This site is showing the effects of the 2002 Trimble fire.

Figure VEG-52: Grass frequencies in site 01N06W26 on the Sands Basin allotment

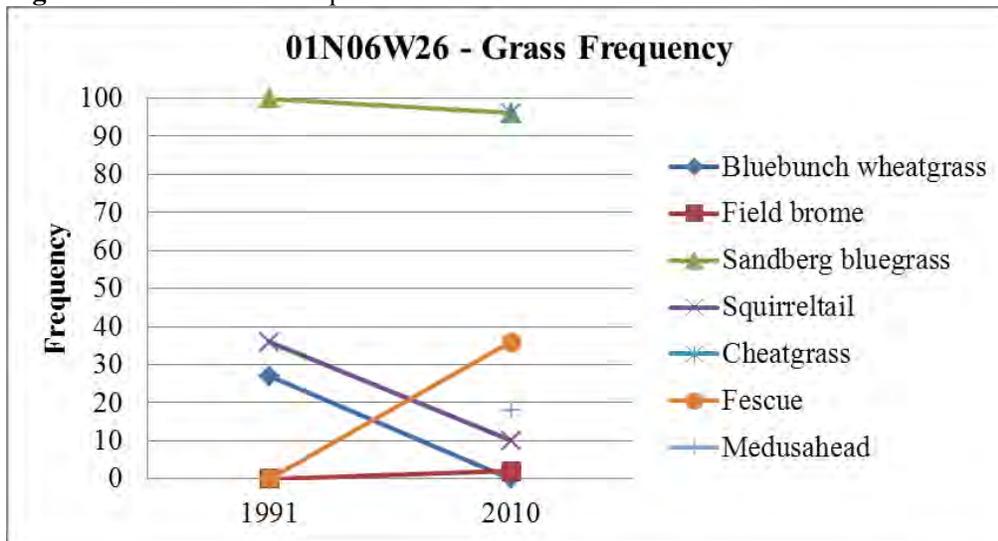
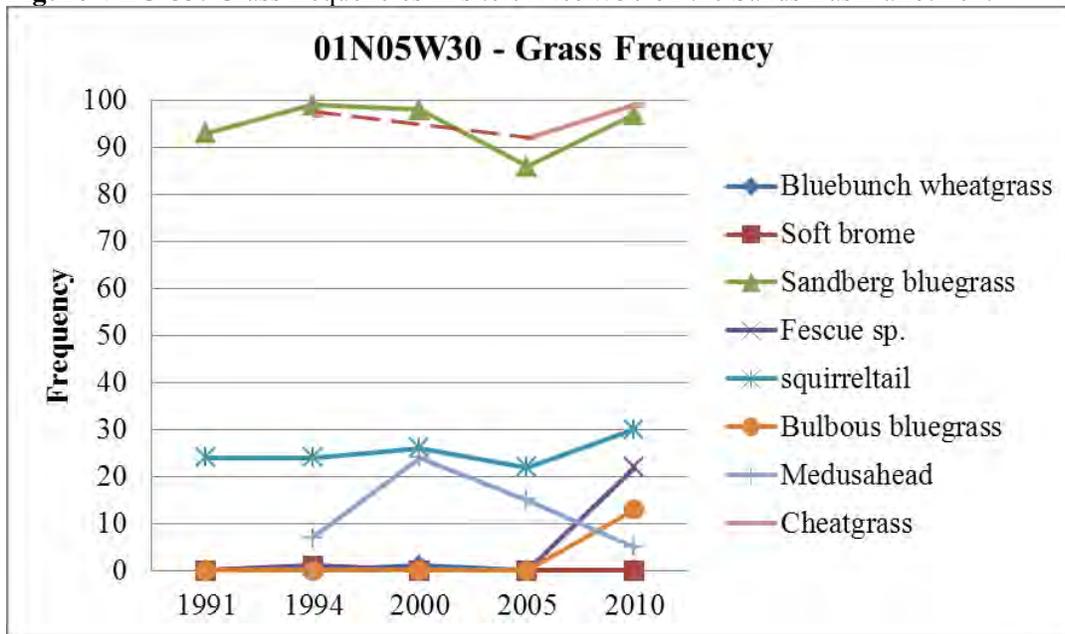


Table VEG-31: Grass frequencies in site 01N05W30the Sands Basin allotment

Grasses		Percentage				
Species	Common Name	1991	1994	2000	2005	2010
AGSP	Bluebunch wheatgrass	0	0	1	0	0
BRMO2	Soft brome	0	1	0	0	0
POSA3	Sandberg bluegrass	93	99	98	86	97
FEOC/VULPA	Fescue sp.	0	1	0	0	22
SIHY	squirreltail	24	24	26	22	30
POBU	Bulbous bluegrass	0	0	0	0	13
TAAS	Medusahead	ND	7	24	15	5
BRTE	Cheatgrass	ND	97	ND	92	99

ND = No Data recorded for annual grasses.

Figure VEG-53: Grass frequencies in site 01N05W30 on the Sands Basin allotment



Dashed line bridges 1994 to 2005 due to a data gap in 2000 for cheatgrass at this site.

The general view photos show these communities are moderately dominated by Wyoming big sagebrush and small bunchgrasses, generally Sandberg bluegrass (Figure VEG-53).

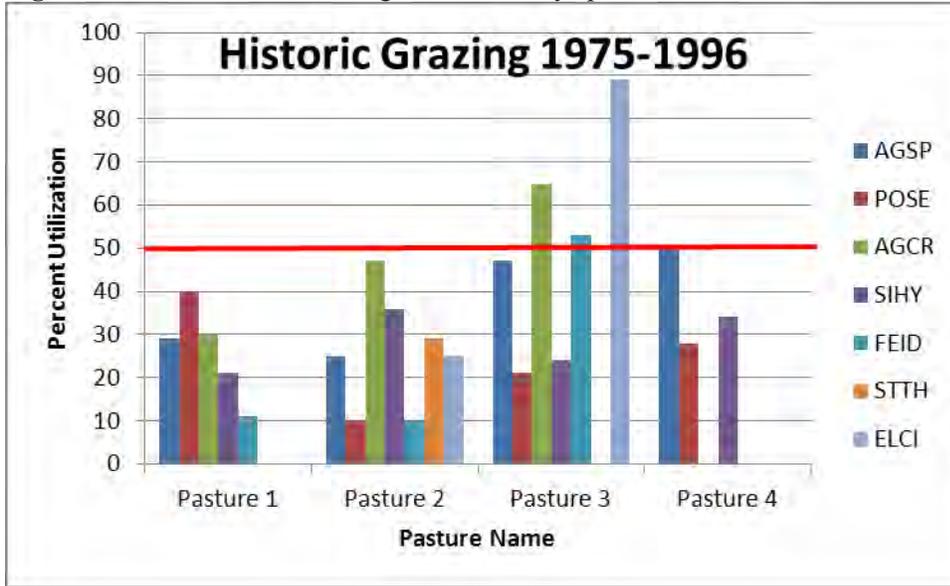
Figure VEG-54: July 1991 (left) and August 2011 (right) photo trend in the Sands Basin allotment showing increased annuals and effects of old burn on site 01N05W030 in pasture 4



Utilization

Utilization levels from 1975 to 1996 for upland key species in the Sands Basin allotment have generally been light to heavy. More recent data collected between 1997 and 2011 has shown slight to light use, with the exception of 59 percent use on Idaho fescue in 2004 at one site in pasture 4 from both wild horses and cattle. Census data from the Sands Basin HMA for 2003 showed 52 head and 64 head in 2006, which exceeds the animal management level of 49 head (Appendix F). In the Sands Basin allotment, wild horses use pastures 2, 3 and 4. (Figures VEG-55 and 56)

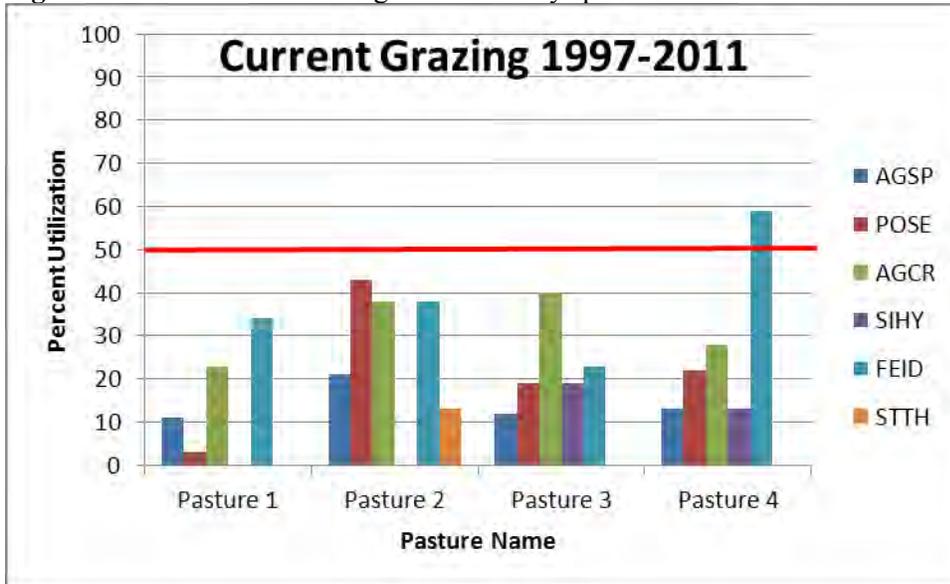
Figure VEG-55: Historic average utilization by species on the Sands Basin allotment



Horizontal line represents 50 percent utilization as specified in Owyhee Resource Management Plan.

Eighty-nine percent utilization occurred on basin wildrye in 1976 and was recorded only once, so this does not reflect a true average.

Figure VEG-56: Current average utilization by species on the Sands Basin allotment



Horizontal line represents 50 percent utilization as specified in Owyhee Resource Management Plan.

Fifty-nine percent utilization on Idaho fescue occurred in 2004 and was recorded only once from both wild horses and cattle, and is therefore not a true average. All of the stipa recorded may have been the same species.

Actual Use

Actual use data is described here as the whole allotment, although pastures 1-3 are evaluated under different Standards to reflect a true rotation for pasture 4. Actual use data for 1990 to 2011 indicates that when grazed, the Sands Basin allotment ranged from 122 to 1016 AUMs, or 11 to 89 acres per AUM. The allotment was rested or had no available data for grazing in 1991, 1994, and 2004. Historically, authorized use in the Sands Basin allotment has ranged from 11 to 15 acres per AUM, as compared to the rate of 11 to 89 acres per AUM that is currently being authorized (Table ALLOT-4, Table VEG-32 and 33 below and Appendix C Actual Use).

Table VEG-32: Sands Basin allotment actual use by pasture since 1990

Sands Basin Allotment	Dates grazed	AUMs Range	Acres per AUM Range	# Years Rested since 1990 ²	Public Acres per Pasture
Pasture 1 – East Sands	3/31-6/3 & 10/8-11/14 ¹	37-394	5-49	5/22 ³	1,828
Pasture 2 - Seeding	4/1-6/7 & 10/1-11/30	55-661 6-314	6-70 12-640	7/22	3,841
Pasture 3 – Bridge Creek	4/1-6/10	4-234	9-495	8/22	1,980
Pasture 4 – Barrel Springs	4/1-6/18 & 10/12-11/30	27-715 9-126	8-218 47-653	6/22 ³	5,873

¹Used in the winter only twice in 22 years during 2009 and 2000

²Rested during critical growth period

³Pastures not having adequate rest on plants grazed during the critical growth period since 1990.

Table VEG-33: Sands Basin allotment grazing schedule in accordance with actual use reports 2007-2011

Pasture	2007	2008	2009	2010	2011
Pasture 1 – East Sands	3/31-4/30	4/1-5/1	4/1-4/10 10/8-10/12	4/1-5/15	4/3-4/24
Pasture 2 - Seeding	10/28-11/6	5/2-6/6 10/28-11/6	3/11-4/25 10/1-10/7 10/13-10/31	5/16-6/6 10/29-10/31	5/1-6/7 11/6-11/7
Pasture 3 – Bridge Creek	4/1-4/30	4/2-5/4	4/1-7/30	4/1-4/30	4/2-4/30
Pasture 4 – Barrel Springs	5/1-5/24	5/5-6/2 11/8-11/10	5/1-5/30	5/1-6/3	4/25-6/4

Evaluation of Standard 4

Evaluation Finding – Allotment/watershed is:

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

Rationale for Evaluation Finding

The desired conditions for the native plant communities are to implement grazing practices that improve or maintain native rangeland species to attain composition, density, foliar cover and vigor appropriate to site potential (USDI BLM, 1999). The site potential for the Sands Basin allotment is mostly Wyoming big sagebrush/ bluebunch wheatgrass plant communities. However, the existing condition of most of the

allotment is dominated by Wyoming big sagebrush; Sandberg bluegrass and cheatgrass co-dominate the grass community with moderate amounts of bluebunch wheatgrass. All of the components of the reference community on the Sands Basin allotment are present; however, a shift has occurred to a more Sandberg bluegrass-dominated, grazing-resistant state. The community composition dominated by small bunchgrasses and cheatgrass is a significant factor in failure to meet Standard 4.

The overall departure rating from site potential for pasture 4 based on RHFAs is moderate for biotic integrity. Dominant bunchgrasses and shrub cover that are expected at site potential occur at a reduced incidence. There is an increase in the shallow-rooted perennial Sandberg bluegrass, which would be a minor component at potential. The strong presence of cheatgrass and medusahead, soil surface loss, and plant mortality/decadence were all noted as contributing factors in the departure from potential. When compared to ecological site descriptions, the overall biotic integrity rating of moderate leads to a finding that the allotment has departed beyond ecological site potential. The loss of site potential is documented through the lack of species diversity, vigor to maintain reproduction and recruitment, and site protection, which allow soil nutrients to replenish. This decreased ecological function leads to a lack of ability for proper nutrient cycling, hydrologic cycling, and energy flow. The RHFA data indicate that the biotic integrity of this allotment has been compromised and is not meeting Standard 4.

Pasture 4 – Pasture 4 was evaluated under Standard 4 (Native Plant Communities), and found to not be meeting the Standard. Previously, the majority of this pasture burned in the 1960s and subsequently seeded with crested wheatgrass. The 2002 Trimby fire affected approximately 15 percent of the pasture, which was subsequently treated with a native seed mix. The existing condition for most of the pasture is dominated by a sagebrush/rabbitbrush overstory and Sandberg bluegrass with invasive annuals scattered throughout the understory according to the Trimby Fire ESR (USDI BLM, 2005). Trend data show a decline for sagebrush, bluebunch wheatgrass, and squirreltail, but an increased occurrence of rabbitbrush has been detected in the most recent years. Noxious weeds including puncture vine, purple loosestrife, and whitetop have been chemically treated in this pasture and will continue to be monitored and treated as a part of the Boise District weed program.

Trend data indicate good perennial shrub cover with apparent increased annuals. However, as noted above, a shift has occurred to a different state. It is generally not economically feasible to move this state back toward a reference community. Trend data show a decrease in bluebunch wheatgrass. Native plant communities taken over by cheatgrass and a shift in co-dominated small bunchgrasses are significant factors in the failure to meet Standard 4.

Utilization levels have been slight to light (11 to 28 percent), with the exception of 59 percent use of Idaho fescue in 2004 at one site from both wild horses and cattle, on key species across pasture 4 of the Sands Basin allotment. These utilization levels are appropriate to allow for maintenance of plant communities capable of facilitating proper functioning of ecological processes and continued productivity and diversity of native plant species. Utilization by livestock and wild horses in pasture 4 of the Sands Basin allotment is a significant factor in failing to meet Standard 4.

Actual use of 8 to 218 acres per AUM has occurred for approximately 4 weeks during the critical growth period (May) in pasture 4 of the Sands Basin allotment. Repeated light use has occurred, when not rested, during the critical growth period (May) on the grasses. Pasture 4 was rested in 6 out of the 22 years grazed, as displayed in the actual use tables in the appendix; the last rest was 8 years ago. Actual use, season of use, and number of livestock are a significant factors in the failure to meet Standard 4.

Soda Creek Allotment

The Soda Creek Allotment has four pastures. Standards 1 and 4 apply to the Soda Creek allotment and are being met. 1996 Cow Creek Fire burned approximately 30 percent of pasture 2, 90 percent of pasture 3 and 50 percent of pasture 4; the other half of pasture 4 was burned by the 2006 Chubby Spain fire and rested from grazing from 2007 to 2010 (Table x fire).

The 2006 Chubby Spain fire was a total of 6,011 acres and burned approximately 50 percent of pasture 4 of the Joint allotment. Inventory after the fire showed root killed large bunchgrasses across the fire area. An active lek site has been documented on state lands within the burned area.

Aerially broadcast seedings with mixtures compressed of primarily mountain big sagebrush, Idaho fescue, bluebunch wheatgrass, Sandberg bluegrass, including flax and western yarrow was completed in the fall of 2006. The 2009 monitoring report noted that the seedings had been fully successful and livestock grazing was resumed. The site was reported at good canopy and basal cover, and correspondingly low susceptibility to wind or water erosion. (Chubby Spain 2006 ESR)

Pasture 1

Rangeland health field assesment meeting standard 4 good vigor age class and recruitment in native plant communities.

Pasture 2

Rangeland health field assesment functional structural groups higher than expected, Sandberg bluegrass and bluebunch wheatgrass dominate the interspaces. Idaho fescue scattered, bulbous bluegrass common, juniper scattered.

Pasture 3

Rangeland Health Field Assessment data show functional structural group off slightly due to Wyethia dominating understory. However all componects of the native community are present.

Trend

One nested-plot frequency transect study site 04S05W27 is established in pasture 3. The site was established in 1986 and re-visited in 1990, 2003 and 2009. The community, as represented by the trend site, is dominated by bluebunch wheatgrass and Sandberg bluegrass. Interspaces are made up of bulbous bluegrass and cheatgrass with scattered squirreltail and California brome.

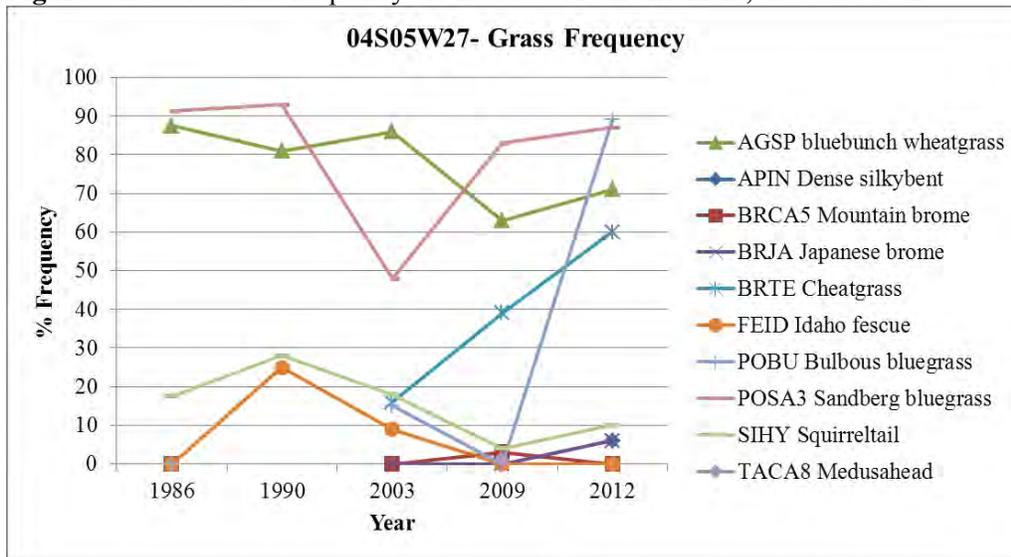
Bluebunch wheatgrass has shown a short-term increase and long-term decrease in frequency. Idaho fescue has shown a decrease and squirreltail has shown a short-term increase and long-term decrease in frequency since recorded. Sandberg bluegrass, cheatgrass, and bulbous bluegrass show an increase in frequency. Medusahead is starting to show up on the site (Table VEG-34, Figure VEG-57).

Table VEG-34: Grass frequency on the Soda Creek allotment, site 04S05W27

Grasses		Percentage				
Species		1986	1990	2003	2009	2012
AGSP	Bluebunch wheatgrass	87.5	81	86	63	71
APIN	Dense silkybent	0	0	0	0	6
BRCA5	Mountain brome	0	0	0	3	0
BRJA	Japanese brome	0	0	0	0	6

Grasses		Percentage				
Species		1986	1990	2003	2009	2012
BRTE	Cheatgrass	NA	NA	16	39	60
FEID	Idaho fescue	0	25	9	0	0
POBU	Bulbous bluegrass	0	0	15	0	89
POSA3	Sandberg bluegrass	91.25	93	48	83	87
SIHY	Squirreltail	17.5	28	18	4	10
TACA8	Medusahead	0	0	0	1	0

Figure VEG-57: Grass frequency on the Soda Creek allotment, site 04S05W27



One photo plot study sites are established in pasture 3 site 04S05W24 is located on private land. The study site was established in 1990 and was re-visited in 2003. The plant community is dominated by mountain big sagebrush with an understory consisting of Wyethia, poa bulbosa, Sandberg bluegrass with scattered bluebunch wheatgrass and squirreltail. Based on general view and photo plots of site 04S05W24, Wyethia has taken over the understory. Shrubs appear to be vigorous in both photos, and juniper is starting to encroach in the background (Figure VEG-58).

Figure VEG-58: July 1990 (left) and July 2003 (right) photo trend in the Soda Creek allotment on site 04S05W24



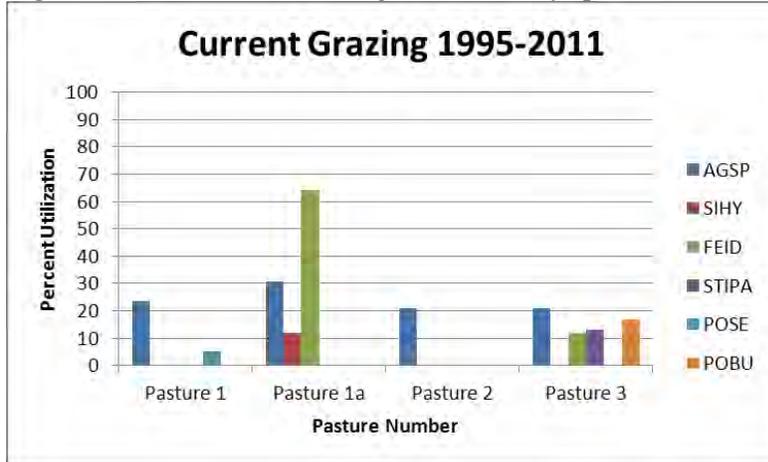
Pasture 5

There are no rangeland health field assessments or trend data available for pasture 5.

Utilization

Utilization levels from 1995 to 2011 for upland key species in the Soda Creek allotment have generally been slight to light except for 64 percent utilization of Idaho fescue on one site in 1995 in pasture 1A (Figure VEG-59).

Figure VEG-59: Current average utilization by species on the Soda Creek allotment



Actual Use

Actual use data for 1990 to 2011 indicates that when grazed, the Soda Creek allotment ranged from 177 to 734 AUMs, or 4 to 18 acres per AUM. The allotment had no available pasture-specific data for grazing from 1990 through 1999 (Appendix C Actual Use). Only 34 percent of the acres on the Soda Creek allotment are managed by the BLM.

Evaluation of Standard 4

Evaluation Finding – Allotment/watershed is:

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

Rationale for Evaluation Finding

Of the four pastures in the Soda Creek allotment, all pastures are dominated native plant communities and therefore evaluated under Standard 4 (Native Plant Communities). The ecological potential for all pastures is dominated by mountain sagebrush overstory and bluebunch wheatgrass understory. The 1996 Cow Creek fire burned approximately 30 percent of pasture 2, 90 percent of pasture 3, and 50 percent of pasture 4; the other half of pasture 4 was burned by the 2006 Chubby Spain fire and rested from grazing from 2007 to 2010. The 2009 monitoring report noted that the seedings had been fully successful and livestock grazing was resumed. The site was reported at good canopy and basal cover, and correspondingly low susceptibility to wind or water erosion according to the Chubby Spain ESR (USDI BLM, 2006). This whole allotment is at risk for invasive annuals because of the fires.

Pasture 1- Pasture 1 was evaluated under Standard 4 (Native Plant Communities), and found to meeting the Standard. The RHFA data indicate functional structural group have good vigor, age class, and recruitment, and the biotic integrity is meeting the Standard.

Pasture 2- Pasture 2 was evaluated under Standard 4 (Native Plant Communities) and found to be meeting the Standard. The functional structural groups are higher than expected, Sandberg bluegrass and bluebunch wheatgrass dominate the interspaces, and Idaho fescue is scattered, bulbous bluegrass is common, and juniper is scattered. The biotic integrity of pasture 2 is meeting Standard 4.

Pasture 3, 5, and 7- These three pastures were evaluated as one pasture but have been split into three different pastures. Functional structural groups are off slightly due to Wyethia dominating the understory. Bluebunch wheatgrass has shown a short-term increase and long-term decrease in frequency. Idaho fescue has shown a decrease and squirreltail has shown short-term increase and long-term decrease in frequency since recorded. Sandberg bluegrass, cheatgrass, and bulbous bluegrass shows an increase in frequency. Medusahead is starting to show up on the site. The biotic integrity of pasture 3 is meeting Standard 4, based on evaluation of trend data.

Trout Creek/Lequerica Allotment

Pasture 1

Rangeland Health Assessment

This site shows a none to slight departure from expected at RHFA site.

Figure VEG-64 RHA site pasture 1



Trend

One photo plot study site 05S05W04 was established in 1989 in pasture 1 and re-visited in 2001, 2007, and 2011. The community, as represented by the photo site, is dominated by antelope bitterbrush, Wyoming big sagebrush and western juniper. Bluebunch wheatgrass, Idaho fescue, and Sandberg bluegrass make up the interspaces with scattered forbs.

In the 2011 landscape view photographs, shrubs and trees appear denser than in 1989. Shrubs and grasses displayed high vigor and well established (Figure VEG-65).

Figure VEG-65: July 1989 (left) and July 2011 (right) photo trend in pasture 1 of the Trout Creek/Lequerica allotment on site 05N05W4.



Pasture 2

Rangeland Health Assessment

Shrub component too high slight to moderate departure low vigor of bunchgrasses. Moderate departure on invasive rating because of JUOC.

Figure VEG-66 Photo at RHA site.



Trend

One photo plot study site 05S05W18B was established in 1989 in pasture 2 and re-visited in 1990, 2007, and 2011. The community, as represented by the photo site, is dominated by antelope bitterbrush and big sagebrush. Western wheatgrass, Basin wildrye with scattered cheatgrass and forbs make up the interspaces.

In the 2011 landscape view photographs, shrubs appear denser than in 1989. Shrubs and grasses displayed high vigor and are well established (Figure VEG-67).

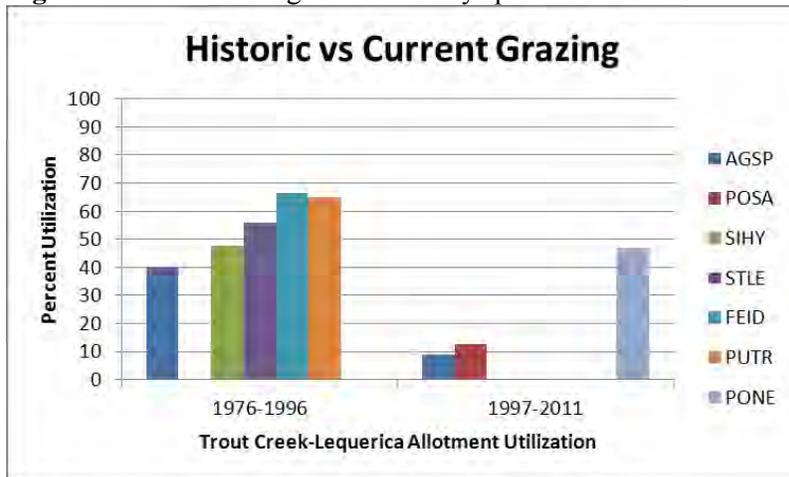
Figure VEG-67: June 1989 (left) and July 2011 (right) photo trend in pasture 2 of the Trout Creek/Lequerica allotment on site 05N05W18B.



Utilization

Utilization levels from 1976 to 1996 for upland key species in the Trout Creek/Lequerica allotment have generally been moderate to heavy. More recent data collected between 1997 and 2011 has shown slight to moderate use (Figures VEG-68).

Figure VEG-68: Average utilization by species on the Trout Creek/Lequerica allotment



Actual Use

Actual use data for 1990 to 2011 indicate that when grazed, the Trout Creek/Lequerica allotment ranged from 68 to 131 AUMs, or 6 to 11 acres per AUM. The allotment had no data or was rested from grazing in 2001, 2002, 2004 and 2005 (Appendix C Actual Use).

Evaluation of Standard 4

Evaluation Finding – Allotment/watershed is:

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

Rationale for Evaluation Finding

This two-pasture allotment has a dominance of native species and is evaluated under Standard 4 (Native Plant Communities). Historical plant communities at these sites were dominated by mountain and low sagebrush overstory with an understory of bluebunch wheatgrass and Idaho fescue. Current condition, as described below using RHFA and trend data, has been altered as a result of past fires and various land management activities.

RHFA data show a none to slight departure from expected plant community in pasture 1. The biotic integrity of pasture 1 is meeting Standard 4. The community, as represented by the photo site, is dominated by antelope bitterbrush, Wyoming Big sagebrush and western juniper. Bluebunch wheatgrass, Idaho fescue and Sandberg bluegrass make up the interspaces with scattered forbs. Thus, pasture 1 is meeting Standard 4.

RHFA data show that the shrub component is too high in pasture 2, with a slight to moderate departure and low vigor of bunchgrasses. There is a moderate departure from expected for invasive species due to the presence of juniper. The biotic integrity of pasture 2 is meeting Standard 4. The community, as represented by the photo site, is dominated by antelope bitterbrush and big sagebrush. Western wheatgrass, basin wildrye with scattered cheatgrass, and forbs make up the interspaces. Pasture 2 is meeting Standard 4, based on evaluation of trend data.

Standard 5 – Seedings

Rangelands seeded with mixtures, including predominately non-native plants, are functioning to maintain life from diversity, production, native animal habitat, nutrient cycling, energy flow, and the hydrologic cycle. Indicators may include, but are not limited to, the following:

1. In established seedings the diversity of perennial species is not diminishing over time.
2. Plant production, seed production, and cover are adequate to enable recruitment when favorable climatic events occur.
3. Noxious weeds are of increasing.
4. Adequate litter and standing dead plant material are present for site protection and for decomposition to replenish soil nutrients relative to site potential.

Rangeland Health Introduction

Where applicable, available data used to develop this assessment include Rangeland Health Field Assessments (RHFA), upland trend data, the Noxious Weed GIS layer, Actual Use, utilization, photos and Trimble Fire ESR. Monitoring Methods are available in Appendix B.

RHFAs were performed during 2007 and 2008 at various locations in each of the four allotments. The RHFAs performed in each allotment are briefly described at the beginning of each section, along with the associated ecological sites for the specific area. Nine of the 17 rangeland health indicators collected during the RHFAs and included in the standard matrix are related to Standard 5 and the attribute of biotic integrity. Ratings for these nine indicators are summarized in Appendix D Rangeland Health Indicators by allotment and degree of departure from reference conditions.

The analysis of the biotic integrity attribute considers nine indicators: soil surface resistance to erosion, soil surface loss or degradation, compaction layer, functional/structural groups, plant mortality/decadence, litter amount, annual production, invasive plants, and reproductive capacity of perennial plants.

Noxious weed point data for the Boise District is maintained as a GIS layer. The database is a reflection of data collected from 2001 to present by BLM staff, County weed departments and numerous

cooperators. Information are collected and updated by the BLM Boise District Office weed program on an annual basis. The database tracks known locations of noxious weeds, size of infestation and year and type of treatments as they apply.

Poison Creek Allotment

The 2002 Trimble fire burned 72 percent of the Poison Creek allotment (Map FIRE-1). In an effort to rehabilitate the land after the fire, the allotment was seeded with a seed mix that consisted of Wyoming big sagebrush, Siberian wheatgrass, Russian wildrye, Great Basin wildrye, Sandberg bluegrass, sand dropseed, shadscale, spiny hopsage and a hybrid triticale¹. The seedings were completed in the fall of 2002 and winter of 2003 and consisted of 2,006 drilled acres and 3,537 acres aerial seeded by helicopter, with a goal of five seeded grass plants per square meter and seeded sagebrush of one plant per square meter (Map RNGE-1). The area was rested from livestock grazing for two growing seasons. The monitoring accomplishment report showed that by the second growing season seed mix densities were at 12.3 plants per square meter, and by 2005, they were at 7.2 plants per square meter (USDI BLM, 2005).

Previous Assessment

The 2001 Determination rating under Standard 6 was Not Meeting the Standard, but Making Significant Progress toward Meeting. Native plant communities were being minimally maintained to ensure the proper functioning of ecological processes and continued productivity and diversity of native plant species. These shrub-dominated communities contained decreaser bunchgrasses under the protective cover of shrub canopies and Sandberg bluegrass-dominated interspatial areas. Plant vigor was minimally adequate to enable reproduction and recruitment of plants. In shadscale/budsage communities, cheatgrass were the dominant understory plant species. A lack of conformance with Guidelines for Livestock Grazing Management no. 1, 3, 4, 9 and 12 were also noted.

Rangeland Health Field Assessment

Due to the predominance of seeded area in this allotment, it is being assessed under Standard 5 for seedings. The second RHFA (native) will also be addressed under Standard 5 and discussed in terms of unburned islands (inclusions) where native plant communities still persist. See Map RNGE-1 for locations of each RHFA. One trend site is established in the allotment within a seeded area.

Table VEG-35: RHFA within the Poison Creek allotment seeded area.

#	Ecological Site
1	Loamy 10-13"

There is one RHFA (Table VEG-35) within a seeding in the allotment, which represents approximately 80% of the allotment. The seeding was established after the Trimble wildfire of 2002 (USDI BLM, 2005). The invasive weed cheatgrass is scattered throughout the site, lending to a moderate rating. Soil surface loss or degradation is rated at slight to moderate departure from potential, with all other indicators for this site listed as a none to slight departure from expected potential. There is no sign of soil surface loss and organic matter presence is at the expected level.

Functional/structural groups are characterized with the seeded species (general wheatgrasses) as dominant, with lesser amounts of Sandberg bluegrass, squirreltail, Wyoming big sagebrush, green rabbitbrush, and various forbs present.

¹ Seedings in the allotment don't reflect the Crested wheatgrass in the trend data. This may be an error in identifying Siberian wheatgrass.

Compaction was not observed. Litter amounts present show little to no departure from potential. Plant mortality was not observed and the site is very productive with plants reproducing. The overall biotic integrity rating is none to slight.

Table VEG-36: RHFA within the Poison Creek allotment native area

#	Ecological Site
1	Loamy 10-13"

This RHFA (Table VEG-36) is a representation of those areas not affected by the Trimby wildfire. Sagebrush dominates this site with interspatial Sandberg bluegrass, squirreltail, and bluebunch wheatgrass. The indicator for functional/structural groups is rated at moderate due to the shrub cover replacing desirable bunchgrasses.

Interspaces show slightly reduced soil stability relative to stability where shrub cover occurs, lending to a slight to moderate departure of soil surface resistance to erosion. Organic matter is present in expected amounts to promote soil surface resistance to erosion, yet some degradation is occurring under the canopy. The soil surface loss or degradation indicator has a rating of slight to moderate.

The plant mortality indicator has a slight to moderate departure from potential with some sagebrush decadence and bluebunch wheatgrass showing some crown die-out. Annual production was observed to be 60 to 80 percent of potential production for the site with a rating of slight to moderate.

Cheatgrass has a slight presence for a rating of none to slight for the invasive plants indicator. Compaction layer, litter amount, and reproductive capability are rated at a none-to-slight departure, with all indicators at or near expected potential. Overall biotic integrity rating for this site is a slight to moderate departure from expected potential.

Noxious Weeds

Several inventories and treatments for noxious weeds have been performed in the Poison Creek allotment. There are currently seven different known noxious weed species within this allotment, all of which occupy sites from less than 0.1 to 1 acre in size: Scotch cottonthistle, Canada thistle, Russian olive, Russian knapweed, whitetop, tamarisk, and puncturevine. Scotch cottonthistle occurs at 12 sites scattered throughout the allotment from uplands to roadside and waterways. Of the 12 sites, eight have been treated either chemically or mechanically between 2003 and 2006. Canada thistle occupies five known sites; three were treated chemically from 2003 to 2004. There are two sites of Russian olive identified within the database; neither have been treated and both occur along waterways. The only Russian knapweed site occurs roadside on the northernmost border and was last treated in 2003 with chemicals. Whitetop has been recorded at one site along a waterway and was treated in 2007. Tamarisk was recorded at one site also and was not treated. Puncturevine occurs at one roadside site and was treated in 2003. All sites will continue to have treatment as a part of the BLM Boise District weed program.

Trend

One nested-plot frequency transect study site (01N05W05) is established in the Poison Creek allotment (Map RNGE-1). The site was established in 1988 and re-visited in 1992, 1999, 2004, and 2010. The community, as represented by the trend site, contains no shrub component due to the 2002 Trimby Fire. Crested wheatgrass, Sandberg bluegrass, and cheatgrass dominate the site. The site is inside the fire line for the 2002 Trimby fire, and 75 percent of the Poison Creek allotment has burned.

The frequency of bluebunch wheatgrass, Sandberg bluegrass, and squirreltail shows a short- and long-

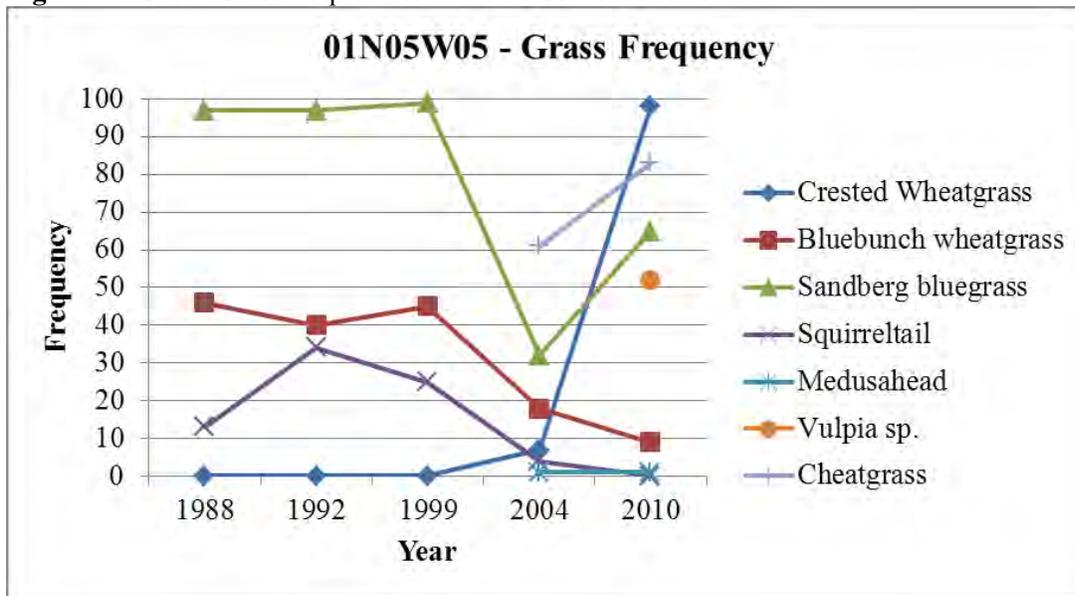
term downward trend. Cheatgrass has been detected in 2004 and since has been co-dominating the site with crested wheatgrass. Six-weeks fescue and medusahead are also starting to show up on the site (Table VEG-37, Figure VEG-69).

Table VEG-37: Grass frequencies in the Poison Creek allotment

Grasses		Percentage				
Species	Common Name	1988	1992	1999	2004	2010
AGCR	Crested wheatgrass	0	0	0	7	98
AGSP	Bluebunch wheatgrass	46	40	45	18	9
POSA3	Sandberg bluegrass	97	97	99	32	65
SIHY	Squirreltail	13	34	25	4	0
TAAS	Medusahead	ND	ND	ND	1	1
VULPIA	Vulpia sp.	ND	ND	ND	ND	52
BRTE	Cheatgrass	ND	ND	ND	61	83

ND-No Data recorded for annual grasses.

Figure VEG-69: Grass frequencies in the Poison Creek allotment



The general view photos show these communities are dominated by seeded grasses (Figure VEG-70).

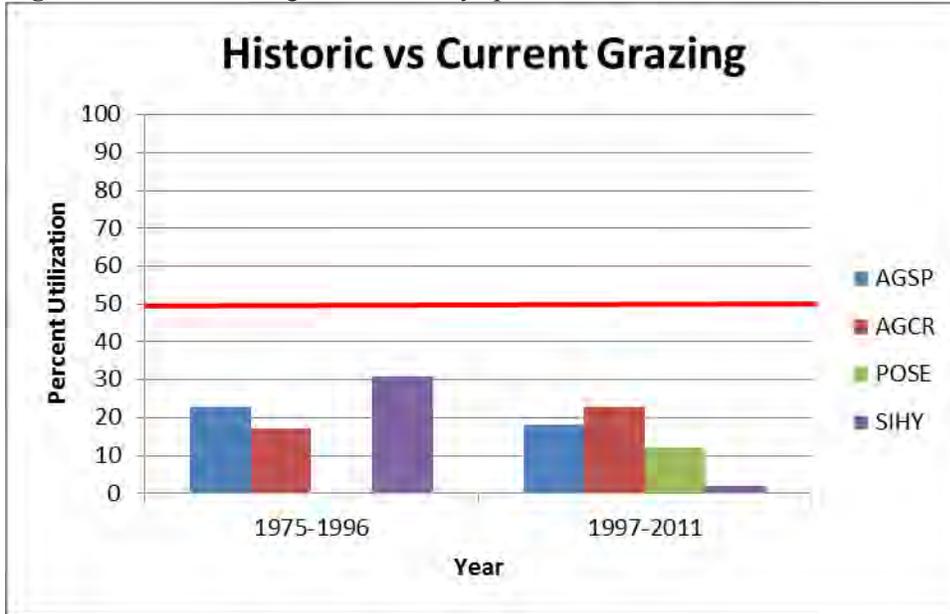
Figure VEG-70: From upper left to lower right: May 1988, May 1999, August 2004 and July 2010 photo trend in the Poison Creek allotment showing effects of the 2002 Trimby fire and subsequent seeding on site 01N05W05.



Utilization

Utilization levels from 1975 to 2011 for upland key species in the Poison Creek allotment have generally been slight to light. Crested wheatgrass has been getting slightly more use in recent years. Utilization occurs from domestic sheep and cattle (Figure VEG-71). Sheep graze the allotment in the spring from April through May, mainly grazing forb species. However, utilization data combine both domestic sheep and cattle use.

Figure VEG-71: Average utilization by species on the Poison Creek allotment



Horizontal line represents 50 percent utilization as specified in the Owyhee Resource Management Plan.

Actual Use

Actual use data for 1990-2011 indicates that when grazed, this allotment ranged from 269 to 742 AUMs or 7 to 20 acres per AUM. During this timeframe, the allotment was grazed in the spring during critical growth periods for grasses (April and May) from both cattle and sheep. The allotment was rested from grazing in 1991, and from 2001 through 2004 (Appendix C Actual Use).

Evaluation of Standard 5

Evaluation Finding – Allotment/watershed is:

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

Rationale for Evaluation Finding

The dominating presence of crested wheatgrass and the number of seeded acres is the determining factor for describing the rangeland health of the Poison Creek allotment in Standard 5-Seedings.

The Poison Creek allotment is predominately non-native plants that are functioning to maintain life from diversity, production, nutrient cycling, energy flow and the hydrologic cycle and therefore is meeting Standard 5-Seedings.

The RHFA representing the seeded areas of the allotment exhibits a fairly steady monoculture of the seeded species, with an overall biotic attribute rating of none to slight. Diversity of species is as expected for the seeding, with trace amounts of shrubs and forbs. No noxious weeds were observed; however, cheatgrass is scattered throughout the site. The seeding is healthy and vigorous, with recruitment observed through seedhead presence. This viable and productive RHFA site is meeting Standard 5, as it provides adequate litter for site protection and for decomposition to replenish soil nutrients. Recruitment is active during favorable climatic conditions, and noxious weeds are not present.

While this allotment is rated under Standard 5 due to the predominance of the seeding, islands of existing native plant communities are represented by one RHFA. The native site has an overall biotic attribute rating of a none-to-slight departure from potential. Sagebrush tends to dominate the site beyond potential, yet species diversity is present with an array of grasses and forbs. Plant vigor is adequate to enable reproduction and recruitment and litter is as expected, to promote site protection and provide for decomposition to replenish soil nutrients. Based on this RHFA, this site is providing for proper nutrient cycling, hydrologic cycling and energy flow within the existing native plant community.

Trend data indicate seedings are functioning to maintain life form diversity and production. Crested wheatgrass, since seeded, has increased and is dominating the grass community, along with moderate amounts of Sandberg bluegrass and cheatgrass. Trend is static in diversity of plants. Cheatgrass has been recorded in 2004 and has increased in frequency at the site. Seventy-five percent of the Poison Creek allotment has been affected by fire or is increasing in cheatgrass. If the cheatgrass threshold is crossed, intervention through artificial reseeding may be the only recourse to obtain satisfactory native or introduced plant communities (Pellant, 1996).

Utilization levels have been slight to light (3 to 31 percent) on key species across the Poison Creek allotment. These utilization levels are appropriate to allow for maintenance of plant communities capable of facilitating proper functioning of ecological processes and continued productivity and diversity of native plant species. The data reflect both sheep and cattle grazing on the allotment. Light grazing means a degree of herbage utilization that allows palatable species to maximize their herbage producing ability (Holecheck, Gomez, Molinar, & Galt, 1999).

Joint Allotment

Pasture 3

Rangeland Health Assessment

Trend

One nested-plot frequency transect study site 04S05W08 was established in 1986 in pasture 3 with four belts and 2009 with five belts, with no apparent trend. The community, as represented by the trend site, contains a dominant intermediate wheatgrass and Sandberg bluegrass with a trace of medusahead. No shrub component has been recorded on the site (Table VEG-38 and Figure VEG-73).

Table VEG-38

Grasses		Percentage	
Species		2009	2012
AGCR	Crested wheatgrass	3	2
BRTE	Cheatgrass	0	2
POSA3	Sandberg bluegrass	100	100
TACA8	Medusahead	1	0
THIN6	Intermediate wheatgrass	100	100
VEDU	North African Grass	0	6
VULPIA	Vulpia	0	8

Figure VEG72

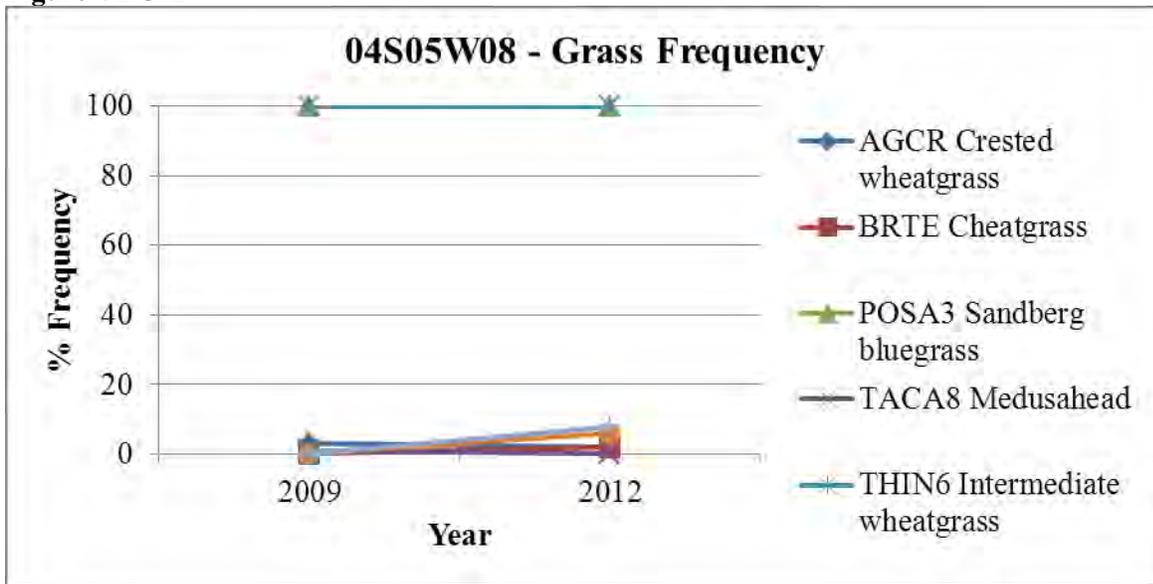


Figure VEG-73: September 2008 overview of trend location in pasture 3 in the Joint allotment



Evaluation of Standard 5

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

Pasture 3 is dominated by a rangeland seeding and is evaluated under Standard 5 (Seedings).

More than 90 percent of pasture 3 burned in 1960 and approximately 7 percent burned in 2006. The site was seeded with intermediate wheatgrass, which currently co-dominates the site with Sandberg bluegrass. This site is not meeting Standard 5. Species diversity is lacking with the absence of any shrub cover. Annual invasive grasses of North Africa grass, cheatgrass, medusahead, and six-weeks fescue have recently been detected.

RHFA data indicate that the Chubby Spain fire burned 90 percent of pasture 3, moderate departure for biotic attribute, annual weeds, soil surface loss, litter amount and functional structural groups are of concern. The biotic integrity of pasture 3 is not meeting Standard 4. The pasture 3 community, as represented by the trend site, contains a dominant intermediate wheatgrass and Sandberg bluegrass with a trace of medusahead. No shrub component has been recorded on the site.

Sands Basin Allotment

Seedings within the Sands Basin allotment include pastures 1 and 2. Pasture 3 has undergone significant seeding treatments in the past; however, since these treatments, annual weed invasion has dominated the majority of the previous seedings along with those areas left native. Due to these factors, this pasture will be addressed under Standard 6 – Exotic Plant Communities, Other than Seedings (Map RNGE-1).

The Johnstone fire of 1960 burned 77 percent of pasture 1 and 8 percent of pasture 2. Rehabilitation after the Johnstone fire was aerial seeding. During the early 1980s, the majority of pasture 2 and portions of pasture 3 underwent a prescribed burn and drill seeding to crested wheatgrass during the early 1980s.

Pastures 2 and 3 were again burned during the 2002 the Trimby fire, affecting 99 percent of pasture 3 and 10 percent of pasture 2 (Table VEG-39 below, Map FIRE-1). In an effort to rehabilitate the burned area, it was aerial and drill seeded with a mix of Wyoming big sagebrush, Siberian wheatgrass, Russian wildrye, Great Basin wildrye, Sandberg bluegrass, sand dropseed, shadscale, spiny hopsage and a hybrid triticale². The Trimby fire seedings were completed in the fall of 2002 and winter of 2003 with a goal of five seeded grass plants per square meter and one seeded sagebrush plant per square meter (Map FIRE-1). The area was rested from livestock grazing for two growing seasons. The monitoring accomplishment report showed that by the second growing season, after the fire, the seeded sites met the goals, except the hybrid triticale did not establish as expected (2005 Trimby Fire ESR monitoring report). Pasture 3 has since has been taken over by medusahead and other annuals and will therefore be evaluated under Standard-6 Exotics.

Table-VEG 39: Acres of seedings by pasture in the Sands Basin allotment from the 2002 Trimby fire

Sands Basin Allotment	Acres Seeded Aerial	Acres Drill Seeded	Percent of Pasture Burned
Pasture 2	352	354	10
Pasture 3	1,882	1,488	99

The Sands Basin Wild Horse Management Area is within the allotment and is discussed in the utilization and rationale sections (Appendix F).

Nine RHFA's were completed for Sands Basin allotment in 2007, with three of these located within pastures 1 and 2. See Map RNGE-1 for locations of each RHFA.

Previous Assessment

The 2001 Determination for Sands Basin allotment (DOI BLM 2001) rated all seedings as meeting Standard 5 and notes that the seedings conform with Guidelines for Livestock Grazing Management. In established seedings, the diversity of perennial species did not diminish over time. At trend sites, bluebunch wheatgrass and crested wheatgrass frequencies were static to increasing. Recruitment, plant vigor, and production were adequate. Invasive weeds were common (cheatgrass and medusahead).

² Seedings in the allotment don't reflect the crested wheatgrass in the trend data. This may be an error in identifying Siberian wheatgrass.

Adequate litter and standing dead plant material were present for site protection and replenishment of nutrients.

Pasture 1

Rangeland Health Field Assessment

Table VEG-40

#	Ecological Site
1	Loamy 10-13" (Johnstone fire, 1960)

The assessment site lies within the 1961 aerial seeding project conducted after the Johnstone fire in 1960. This fire burned approximately 77 percent of the pasture, leaving only the northwest corner of the pasture unscathed. The dominant visual aspect of this RHFA is an overstory of Wyoming big sagebrush and rabbitbrush with interspatial crested wheatgrass. The diversity of species (functional/structural group) is marginal, with very few forbs; crested wheatgrass is replacing native perennial bunchgrasses; the rating for this indicator is slight to moderate. Cheatgrass is scattered throughout the site, leading to an indicator rating of moderate. The interspaces have reduced organic matter relative to under-shrub canopy, leading to an indicator rating of moderate for soil loss and degradation. Some decadence of sagebrush was observed, along with a lack of vigor and reproductive capability within those plants that were compromised. Grasses appear to be vigorous, with seedstalks present and a slight to moderate departure from potential. Compaction, litter amount, and annual production indicators are all rated at none to slight, with expected values relative to potential. The overall biotic attribute rating is rated at a slight to moderate departure.

Noxious Weeds

No known noxious weeds were reported in the BLM Boise District weed GIS layer for this pasture.

Trend

One nested-plot frequency transect study site (01N05W21A) was established in pasture 1 in 1988 and revisited in 1991, 1994, 2000, 2005, and 2010. The site has been aerially seeded in the past with crested wheatgrass. The community, as represented by the trend site, contains a scattered canopy of big sagebrush with pockets of low sagebrush. The interspatial areas are occupied by Sandberg bluegrass, squirreltail, bluebunch wheatgrass and crested wheatgrass, with a beginning presence of cheatgrass.

The frequency of bluebunch wheatgrass shows a long-term and short-term static trend. Crested wheatgrass shows a long-term decrease and short-term static frequency. Cheatgrass was detected in 1994 and has been increasing in frequency since. Sandberg bluegrass and squirreltail have been static in frequency since first recorded (Table VEG-41, Figure VEG-74).

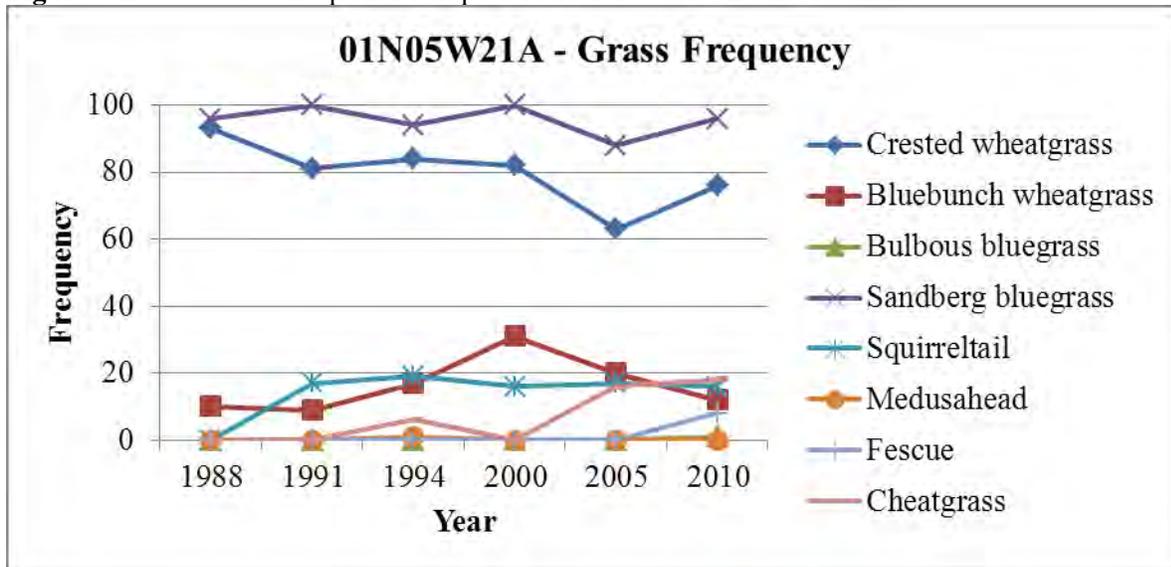
Wyoming big sagebrush and seedlings have shown a short-term increase and long-term significant increase in frequency. Low sagebrush has shown a short- and long-term significant decrease in frequency. Horsebrush and green rabbitbrush have shown no apparent change from 1988 to 2010.

Shrub density is showing an upward trend for all shrub species on the site 01N05W21A.

Table VEG-41: Grass frequencies in Pasture 1 of the Sands Basin allotment, site 01N05W21A

Grasses		Percentage					
Species	Common Name	1988	1991	1994	2000	2005	2010
AGCR	Crested wheatgrass	93	81	84	82	63	76
AGSP	Bluebunch wheatgrass	10	9	17	31	20	12
POBU	Bulbous bluegrass	0	0	0	0	0	1
POSA3	Sandberg bluegrass	96	100	94	100	88	96
SIHY	Squirreltail	0	17	19	16	17	16
TAAS	Medusahead	0	0	1	0	0	0
VULPA	Fescue	0	0	0	0	0	8
BRTE	Cheatgrass	0	0	6	0	16	18

Figure VEG-74: Grass frequencies in pasture 1 of the Sands Basin allotment



The general view photos show these communities are moderately dominated by Wyoming big sagebrush and small bunchgrasses (Figure VEG-75).

Figure VEG-75: From left to right: April 1988 and August 2011 photo trend in the Sands Basin allotment showing general view with no apparent trend on site 01N05W021A in pasture 1.



Pasture 2

Seeding

Rangeland Health Field Assessment

Table VEG-42

#	Ecological Site
1	Loamy 10-13" (Johnstone fire, 1960)
1	Shallow Claypan 12-16" inclusion within Loamy 11-13"

Approximately 8 percent of this pasture was aerially seeded after the Johnstone fire of 1960. The eastern side of the pasture was aerially seeded and generally retains a representation of the original plant community intermingled with crested wheatgrass. The large basin in the central portion of pasture 2 was seeded at a later date.

The eastern RHFA site is located on a hillside bench and the western RHFA site is located along the northwest perimeter of the basin. At both assessment sites, good perennial plant diversity was observed with a mix of shrubs, crested wheatgrass, native perennial grasses, and forbs with fairly even distribution. A slight decadence in rabbitbrush was noted with all other species remaining healthy and reproductive. This indicator was rated at slight to moderate. Cheatgrass was observed in patches at one site and trace amounts at the other for an overall rating of slight to moderate. All other indicators for this pasture are rated at none to slight. The overall biotic attribute rating for this pasture is none to slight.

Noxious Weeds

Three noxious weed sites are logged in the BLM Boise District weed database, all of which occur in the western third of the pasture. Tamarisk occurs at one site in an area encompassing less than 0.1 acres. This stand of tamarisk was treated in 2005 with chemistry. The one recorded site of Canada thistle is also less than 0.1 acres, was last visited in 2005 but was not treated at the time. Scotch thistle is known to occur at one site that is 0.1 to 1 acre in size. This site was treated in 2006 with chemicals. All sites will continue to have treatment as a part of the Boise District weed program.

Trend

One nested-plot frequency transect study site (01N05W17) is established in pasture 2. The site was established in 1988 and revisited in 2010. The site has been aerially seeded in the past with crested wheatgrass. The community, as represented by the trend site, contains a scattered canopy of big sagebrush with pockets of low sagebrush. The interspatial areas are occupied by mostly Sandberg bluegrass and crested wheatgrass.

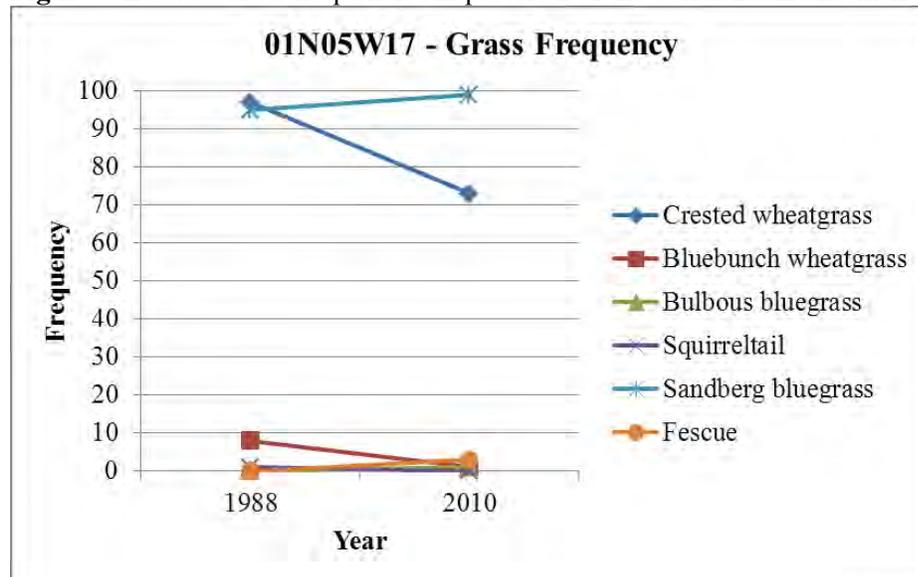
The frequency of bluebunch wheatgrass shows a downward trend. While crested wheatgrass shows a significant decrease in frequency from 1988 to 2010. Sandberg bluegrass has been static in frequency of occurrence since recorded (Table VEG-43, Figure VEG-76).

Wyoming big sagebrush, low sagebrush, rabbitbrush, and seedings have shown a significant increase in frequency. Shrub density is showing an upward trend for all shrub species on site 01N05W17.

Table VEG-43: Grass frequencies in pasture 2 of the Sands Basin allotment, site 01N05W17

Grasses		Percentage	
Species	Common Name	1988	2010
AGCR	Crested wheatgrass	97	73
AGSP	Bluebunch wheatgrass	8	1
POBU	Bulbous bluegrass	0	1
SIHY	Squirreltail	1	0
POSA3	Sandberg bluegrass	95	99
VULPA	Fescue	0	3

Figure VEG-76: Grass frequencies in pasture 2 of the Sands Basin allotment



The general view photos show these communities are moderately dominated by Wyoming big sagebrush and small bunchgrasses, generally Sandberg bluegrass (Figures VEG-77 and -78).

Figure VEG-77: From left to right: July 1991 and July 2010 photo trend in the Sands Basin allotment showing increased shrub density on site 01N05W018A in pasture 2



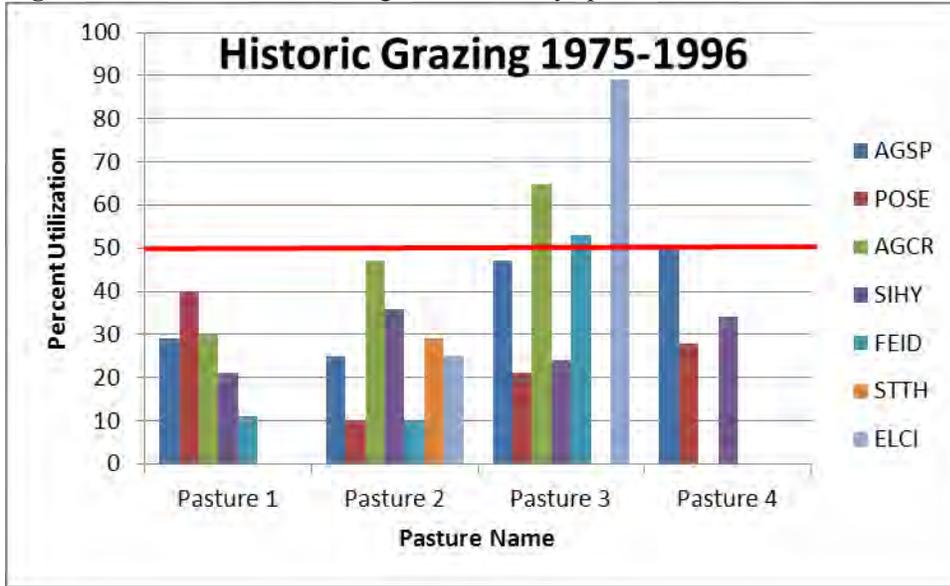
Figure VEG-78: From left to right: April 1988 and July 2010 photo trend in the Sands Basin allotment showing poor vigor in the seeding and increased shrub density on site 01N05W018B in pasture 2



Utilization

Utilization levels from 1975 to 1996 for upland key species in the Sands Basin allotment have generally been light to heavy. More recent data from 1997 to 2011 have shown slight to light use, with the exception of 59 percent use on Idaho fescue in 2004 at one site in pasture 4 (Standard 4) from both wild horses and cattle. Census data for the Sands Basin HMA in 2003 showed 52 and in 64 head in 2006, which is more than the animal management level of 49 head (Appendix F). In this allotment, wild horses also use pastures 2, 3 and 4 (Figure VEG-79 and -80: Average Utilization).

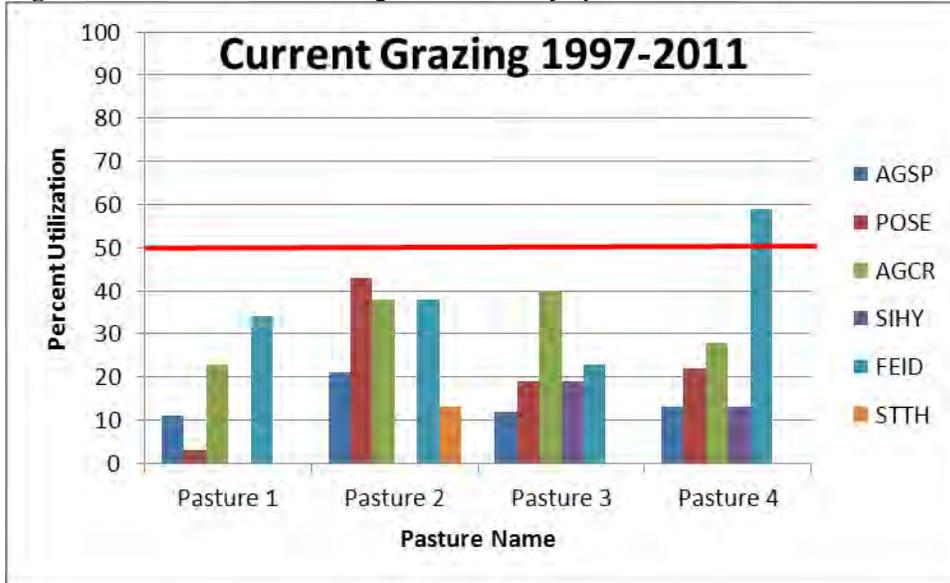
Figure VEG-79: Historic average utilization by species on the Sands Basin allotment



Horizontal line represents 50 percent utilization as specified in Owyhee Resource Management Plan.

Utilization of 89 percent, on basin wildrye, was recorded in 1976 only, and therefore does not reflect a true average.

Figure VEG-80: Current average utilization by species on the Sands Basin allotment



Horizontal line represents 50 percent utilization as specified in Owyhee Resource Management Plan.

Fifty-nine percent utilization on Idaho fescue occurred in 2004 and was recorded only once from both wild horses and cattle, not a true average. All of the stipa recorded may have been the same species.

Actual Use

Actual use data for 1990 to 2011 indicates that when grazed, the Sands Basin allotment ranged from 122 to 1,016 AUMs, or 11 to 89 acres per AUM. The allotment was rested or had no available data for grazing

in 1991, 1994 and 2004. Historically, authorized use in the Sands Basin allotment has ranged from 11 to 15 acres per AUM as compared to the rate of 11 to 89 acres per AUM that is currently being authorized (Table VEG-44 and -45 below and Appendix C Actual Use).

Table VEG-44: Sands Basin allotment actual use by pasture since 1990, displayed by ranges

Sands Basin Allotment	Dates grazed	AUMs Range	Acres per AUM Range	# Years Rested since 1990 ²	Public Acres per Pasture
Pasture 1	3/31-6/3 & 10/8-11/14 ¹	37-394	5-49	5/22 ³	1,828
Pasture 2	4/1-6/7 & 10/1-11/30	55-661 6-314	6-70 12-640	7/22	3,841
Pasture 3	4/1-6/10	4-234	9-495	8/22	1,980
Pasture 4	4/1-6/18 & 10/12-11/30	27-715 9-126	8-218 47-653	6/22 ³	5,873

¹Used in the winter only twice in 22 years during 2009 and 2000

²Rested during critical growth period

³Pastures not having adequate rest on plants grazed during the critical growth period since 1990.

⁴Used in the winter four out of 22 years

Table VEG-45: Sands Basin allotment grazing schedule in accordance with 2007-2011 actual use reports

Pasture	2007	2008	2009	2010	2011
1 East Sands	3/31-4/30	4/1-5/1	4/1-4/10 10/8-10/12	4/1-5/15	4/3-4/24
2 Seeding	10/28-11/6	5/2-6/6 10/28-11/6	3/11-4/25 10/1-10/7 10/13-10/31	5/16-6/6 10/29-10/31	5/1-6/7 11/6-11/7
3 Bridge Creek	4/1-4/30	4/2-5/4	4/1-7/30	4/1-4/30	4/2-4/30
4 Barrel Springs	5/1-5/24	5/5-6/2 11/8-11/10	5/1-5/30	5/1-6/3	4/25-6/4

Evaluation of Standard 5

Evaluation Finding – Allotment/watershed is:

Meeting the Standard

Not meeting the Standard, but making significant progress toward meeting

Not meeting the Standard

Rationale for Evaluation Finding

The Sands Basin allotment pastures 1 and 2 are predominately non-native plants with increasing components of shrubs and native Sandberg bluegrass and are functioning to maintain life form diversity, production, nutrient cycling, energy flow and the hydrologic cycle. These pastures are therefore meeting Standard 5 Seedings.

All areas seeded within pastures 1 and 2 have a diversity of perennial species consisting mainly of the seeded species, a mix of native grass species and shrub overstory. Invasives are present with a low concern in pasture 2 but have potential to spread in pasture 1. At all seedings, reproductive capability and

vigor are good. Overall, seedings carry a variety of perennial species, plants have good vigor to maintain the seeded and native species, and adequate litter is present for site protection and for decomposition to replenish soil nutrients relative to site potential. These viable and productive seedings within pastures 1 and 2 are meeting Standard 5.

Pastures 1 and 2 – Most of pasture 1 burned in 1960 and was aerially seeded. A majority of pasture 2 was burned and drill seeded with crested wheatgrass in the early 1980s. In pasture 1, Wyoming big sagebrush and rabbitbrush are dominant, with crested wheatgrass between shrubs. Few forbs and native grasses are present. Pasture 2 has a diversity of native perennial shrubs, forbs and grasses intermixed with crested wheatgrass. Cheatgrass is found in patches on one side of the pasture. These pastures are meeting Standard 5 (Seedings). Vegetation trend data reflect a scattered canopy of big sagebrush with pockets of low sagebrush, and an understory dominated by Sandberg bluegrass, squirreltail, bluebunch wheatgrass, and crested wheatgrass. In pasture 1, trend in perennial grasses is mostly static, but an increased occurrence of cheatgrass has been detected in recent years. In pasture 2, both bluebunch wheatgrass and crested wheatgrass have declined since 1988, while Sandberg bluegrass has remained stable, and density and frequency of shrubs, including Wyoming big sagebrush, low sagebrush and rabbitbrush have increased. Noxious weeds including tamarisk, Canada thistle and Scotch thistle have been chemically treated in this pasture, and will continue to be monitored and treated as a part of the Boise District weed program.

Trend data indicate seedings are functioning to maintain life form diversity and production. Crested wheatgrass, since seeded, has slightly decreased, with Sandberg bluegrass and shrubs increasing as the native component. Trend is static in diversity of plants. *Vulpia* and *Bulbous bluegrass* have been increasing in frequency at the pasture 2 site. Seventy-seven and 18 percent of pastures 1 and 2, respectively, have been affected by fire or are increasing in cheatgrass and medusahead. If the cheatgrass threshold is crossed, intervention through artificial reseedling may be the only recourse to obtain satisfactory native or introduced plant communities (Pellant, 1996).

Standard 6 – Exotic Plant Communities, Other Than Seedings

Exotic plant communities, other than seedings, will meet minimum requirements of soil stability and maintenance of existing native and seeded plants. These communities will be rehabilitated to perennial communities when feasible cost effective methods are developed.

Indicators may include, but are not limited to, the following:

1. Noxious weeds are not increasing.
2. The number of perennial species is not diminishing over time.
3. Plant vigor (production, seed and seedstalk production, cover, etc.) of remnant native or seeded (introduced) plants is maintained to enable reproduction and recruitment when favorable climatic or other environmental events occur.
4. Adequate litter and standing dead plant material is present for site protection and for decomposition to replenish soil nutrients relative to site potential.

Rangeland Health Introduction

Where applicable, available data used to develop this assessment include Rangeland Health Field Assessments (RHFA), upland trend data, the Noxious Weed GIS layer, actual use, utilization, photos and Trimby Fire ESR. Monitoring methods are described in Appendix B.

RHFAs were performed during 2007 and 2008 at various locations in each of the four allotments. The number of RHFAs by allotment is displayed at the beginning of each section, along with the associated ecological sites for the specific area. Nine of the 17 rangeland health indicators collected during the RHFAs and included in the standard matrix are related to Standard 6 and the attribute of biotic integrity. Ratings for these nine indicators are summarized in Appendix D Rangeland Health Indicators by allotment and degree of departure from reference conditions.

The analysis of the biotic integrity attribute considers nine indicators: soil surface resistance to erosion, soil surface loss or degradation, compaction layer, functional/structural groups, plant mortality/decadence, litter amount, annual production, invasive plants, and reproductive capacity of perennial plants.

Burgess FFR Allotment

Pasture 2

RHFA site RH2A was located in an old burn area. At this site, the indicator for functional/structural groups was rated as a 'moderate to extreme' departure from reference conditions, and the indicator for invasive species was rated as an 'extreme' departure. Shrub and bunchgrass cover were lacking. The site is dominated by medusahead wildrye with patches Sandberg bluegrass and phlox. There was very little recruitment of bluebunch wheatgrass following the burn. The production of litter from annual species was more than expected. Vigor and seedhead production was reduced on Sandberg bluegrass and bluebunch wheatgrass. Shrub recruitment was reduced. Perennial bunchgrasses were slightly decadent.

At RH2B, the indicator for functional/structural groups was rated as showing between a moderate and moderate to extreme departure from reference site conditions. The shrub component was nearly as expected, but bluebunch wheatgrass was missing from the understory component. Sandberg bluegrass, squirreltail, bulbous bluegrass, soft brome and ventenata dominated the understory. Some crown die-out in pedestalled bluegrasses plants was observed. Production was slightly less than expected due to absence of large perennial bunchgrasses. Where present, Sandberg bluegrass displayed reduced vigor and was commonly pedestalled. Ventenata and soft brome were dominant in patches, and bulbous bluegrass was common.

Evaluation of Standard 6

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

Pasture 2 is located in an old burn area. Pasture 2 indicators for functional/structural groups were rated as a moderate to extreme departure from reference conditions, and the indicator for invasive species was rated as an extreme departure. Shrub and bunchgrass cover were lacking. The pasture is dominated by medusahead wildrye (*Taeniatherum caput-medusae*) with patches Sandberg bluegrass and phlox. There was very little recruitment of bluebunch wheatgrass following the burn. The production of litter from annual species was more than expected. Vigor and seedhead production was reduced on Sandberg bluegrass and bluebunch wheatgrass. Shrub recruitment was reduced. Perennial bunchgrasses were slightly decadent. Soil degradation and bare ground is a concern in areas where invasive annuals are increasing and are not meeting minimum requirements of soil stability and therefore not meeting standard 6.

Elephant Butte Allotment

Rangeland Health Field Assessment

Seven RHFAs were conducted in May of 2007, and nine trend sites were conducted within this allotment. See Map RNGE-1 Range Resources for locations of each RHFA and Trend site. More than 2,800 acres (approximately 30 percent) of the Elephant Butte allotment have burned between 1960 and 2012. However, not all sites where RHFAs were performed were subject to these fires. Fires that burned over RHFA sites from 1960 to 2012 are noted in the tables at the beginning of each pasture write-up. Two trend sites in pasture 1 were discontinued because of a land purchase to the county.

Hardtrigger Wild Horse Management Area is within this allotment. In accordance with the 1999 ORMP, the appropriate management level (AML) in Hardtrigger is 98 horses. However, the population may range from 66 to 130 horses in any given year, which is approximately 1,176 AUMs annually.

Within the 2001 Determination for Elephant Butte allotment (DOI BLM 2001) the pastures of the allotment are split into Standard 4 (Native Plants) and Standard 6 (Exotic Plant Communities, Other than Seedings).

Previous Assessment for Standard 4 (Native Plants)

The 2001 Determination rating under Standard 4 was Not Meeting the Standard, Livestock Grazing Management Practices are Significant Factors. Native plant communities were not being maintained or improved to ensure the proper functioning of ecological processes and continued productivity and diversity of native plants. Plant community integrity and native species diversity were inadequate for pastures 1, 2, 3, and 4. These pastures contained a shrub-dominated cheatgrass understory lacking large bunchgrasses unless they were within protection of shrub canopy. All pastures were observed to be devoid of leguminous forbs. Pasture 2 areas of Loamy 10-13" were the only exception to this, with adequate species diversity and the frequency of bunchgrasses generally static. A lack of conformance with Guidelines for Livestock Grazing Management no. 3, 4, 9, and 12 were also noted.

Previous Assessment for Standard 6 (Exotic Plant Communities, Other than Seedings)

The 2001 Determination rating under Standard 6 was Not Meeting the Standard, but Making Significant Progress Toward Meeting the Standard. Invasive plants dominated the allotment. The low number of perennial species did not appear to be diminishing over time at trend sites. Reproduction and recruitment of plants was adequate along with plant vigor with the exception of Indian ricegrass. Adequate litter and standing dead plant material was present for site protection and decomposition to replenish soil nutrients. The communities ability to perform nutrient cycling was lacking. A lack of conformance with Guidelines for Livestock Grazing Management no. 1, 4, 8, and 12 were also noted.

Pasture 1

Rangeland Health Field Assessment

Table VEG-46: Rangeland health field assessment for Elephant Butte pasture 1

#	Ecological Site
1	Sandy Loam 8-12" with inclusions of Calcareous Loam 7-10"
1	Calcareous loam 7-10"

The indicator ratings at both assessment sites (VEG-46) in pasture 1 are very similar for biotic integrity. On average, both indicators relating to soil surface (erosion and degradation) are at a slight departure from potential. Functional/structural groups and invasive plants are at a moderate to extreme departure from potential. Cheatgrass dominates the visual aspect with shadscale as the subdominant species. Perennial bunchgrasses have decreased drastically from potential and when present, can be found under the canopy of shrubs. Forbs at each site have been reduced to trace amounts (less than 2 percent composition). All other indicators (compaction, plant mortality, litter, annual production, and reproduction) have a none-to-slight departure from sight potential.

The overall biotic integrity for this pasture rates out at a moderate to extreme departure. The loss of biotic integrity is amplified through the dominance of cheatgrass, the shift in species composition away from natives, and a decrease in the number of species present.

Noxious Weeds

Within the BLM Boise District weed database there are no recorded noxious weed sites in the pasture.

Trend

Figure VEG-81: Site 02N04W31



Three nested-plot frequency transects study sites (02N04W29, 02N04W32 and 02N04W31) were established in pasture 1 of the Elephant Butte allotment (Map RNGE-1), sites in sections 29 and 32 were established on BLM but have since been sold to Owyhee County. The sites were established in 1988 and 1989 re-visited in 1994, 2000 and 2005. Livestock still freely graze this site and, for the purpose of this assessment, have been included in this assessment. The site in section 31 was established in 2010 on BLM land and read only once. The ecological site descriptions of sites in the private sections 29 and 32 are Calcareous Loam 7"-10"; the BLM site in section 31 is a Sandy Loam 8"-12". The community in pasture 1, as represented by the private trend sites, contains a low to moderate canopy of shadscale saltbush with pockets of big and bud sagebrush (Figure VEG-81).

The BLM trend site in section 31 has only Wyoming big sagebrush in the overstory. The interspatial areas are occupied by mostly Sandberg bluegrass, squirreltail, *Vulpia* and cheatgrass. All sites are adjacent to the fire line for the 1961 Squaw Creek Road and 1983 South Two fires respectively, and three percent of the pasture has burned. (Table ALLOT-30: Fire history)

Annual grasses were not recorded in the trend sites consistently, and cheatgrass was recorded in 2005 and has since been dominating the site. Sandberg bluegrass and squirreltail have shown a significant decrease in frequency at site 02N04W29 and static at the other site. (Tables VEG-51 and 52, Figure VEG-82 and 83)

Big sagebrush has shown a decrease in frequency on both sites, one significantly. Shrub density data on site 02N04W29 indicate decreases in Wyoming big sagebrush and shadscale saltbush and increased bud sagebrush. Shrub density data on site 02N04W32 indicated decreases in spiny hopsage and increased Wyoming big sagebrush.

Table VEG-47: Grass frequencies in pasture 1 in the Elephant Butte allotment, site 02N04W29

Grasses		Percentage			
Species	Common Name	1988	1994	2000	2005
POSA3	Sandberg bluegrass	97	93	100	66
SIHY	Squirreltail	55	31	38	3
BRTE	Cheatgrass	ND	ND	ND	100

ND-No Data recorded for annual grasses.

Figure VEG-82: Grass frequencies in pasture 1 in the Elephant Butte allotment

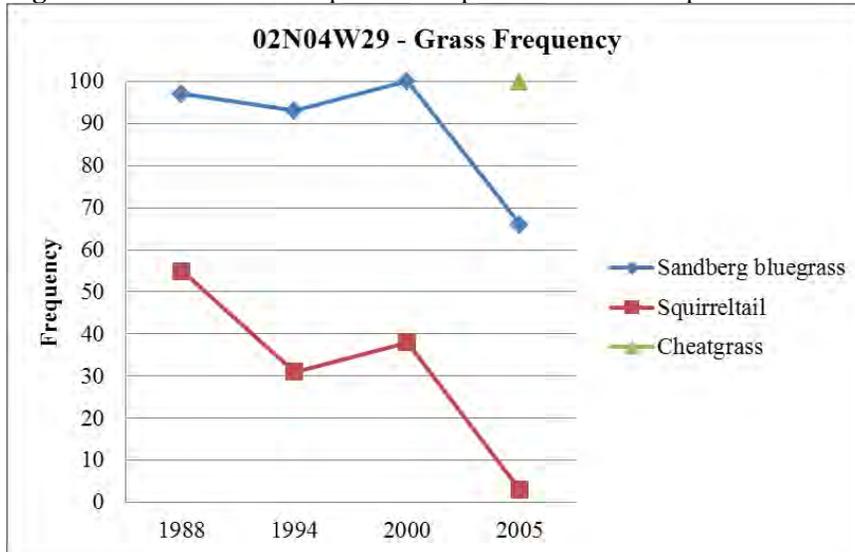
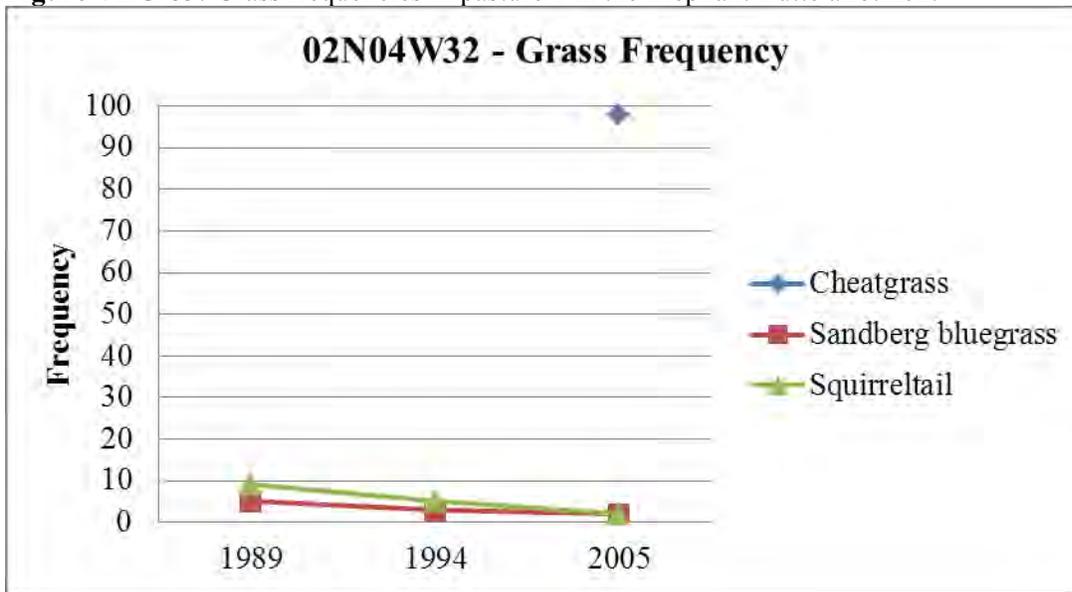


Table VEG-48: Grass frequencies in pasture 1 in the Elephant Butte allotment, site 02N04W32

Grasses		Percentage		
Species	Common Name	1989	1994	2005
BRTE	Cheatgrass	ND	ND	98
POSA3	Sandberg bluegrass	5	3	2
SIHY	Squirreltail	9	5	2

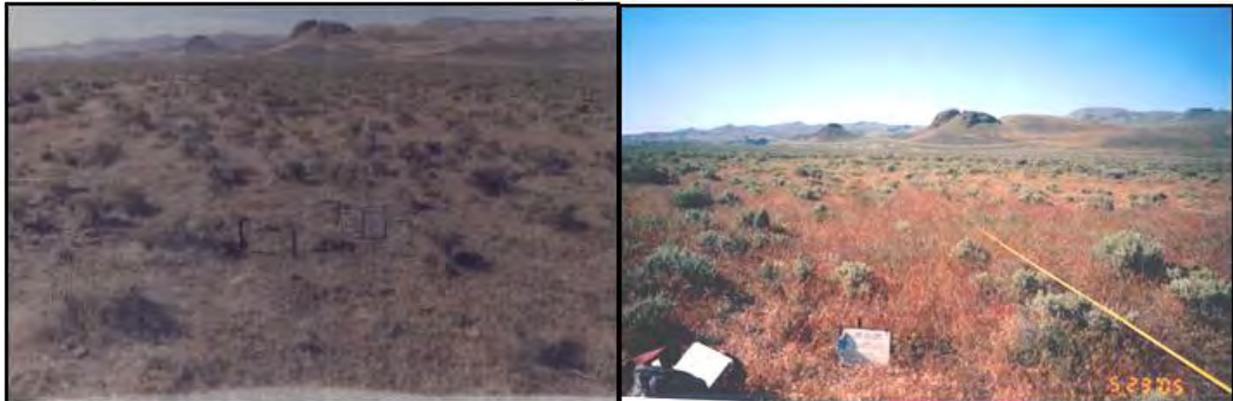
Figure VEG-83: Grass frequencies in pasture 1 in the Elephant Butte allotment



Photographs at the trend site indicate low to moderate perennial shrub cover and decreased perennial grass vigor with increased annuals from June 1985 to May 2005. Photos also show the effects of the 1983 South Two fire. (Table ALLOT-30: Fire history)

The general view photos show these communities are moderately dominated by annuals (Figure VEG-84).

Figure VEG-84: From left to right: June 1985 and May 2005 photo trend in the Elephant Butte allotment showing increased annuals on site 02S04W29 in pasture 1



Pasture 2

The majority of the pasture consists of a sagebrush/cheatgrass mosaic with interruptions by roads. As one moves south (or to higher elevation) the roads become less frequent and sagebrush vegetation more contiguous (USDA FSA, 2011). One trend site is located in the southern native community type which encompasses approximately 25 percent of the pasture (USDA FSA, 2011). The one RHFA performed in 2007 is located in the northern, lower elevation portion of the pasture and is representative of the majority of the allotment.

Rangeland Health Field Assessment

Table VEG-50: Rangeland health field assessment for Elephant Butte pasture 2

#	Ecological Site
1	Loamy 10-13"

The one assessment site for this pasture (Table VEG-50) has an inadequate rating for functional/structural groups, plant mortality, invasive plants, soil surface resistance to erosion and soil surface loss or degradation all at a moderate or moderate to extreme departure. The site is dominated by shrubs (40 to 100 percent composition) with cheatgrass as a subdominant (10 to 40 percent composition) and Sandberg bluegrass and squirreltail at minor component (2 to 5 percent composition). Biological soil crusts, bluebunch wheatgrass, and perennial forbs are largely absent. For this reason, the functional/structural group indicator is rated moderate in degree of departure.

Plant mortality is common among Sandberg bluegrass when associated with pedestalling and is rated at a moderate departure from potential. Soil surface resistance to erosion is compromised by low organic matter on site, a lack of microbiotic crusts, and a reduced soil structure, all leading toward a moderate departure from potential. Soil surface loss or degradation was observed by the presence of pedestals, terracettes, and horse impacts. The invasive weed indicator also has an inadequate rating with a moderate departure from potential.

Broom snakeweed (*Gutierrezia sarothrae*) and cheatgrass are found throughout the site, with cheatgrass a subdominant species in the current plant community. In areas compromised by fire, grazing or drought, broom snakeweed is likely to rapidly invade (USDA USFS, 1937). Indicators of compaction, litter, annual production, and reproduction were noted at a slight to moderate departure from potential (See Appendix D – Indicator Table).

The ability of this community to conduct nutrient cycling is marginally intact based on the compromised soil surface integrity, a decrease in plant diversity, an increase of invasive plants, and active plant mortality. The overall biotic integrity rating for this site is a moderate departure from potential.

Noxious Weeds

One known noxious weed site is present in the southern end of pasture 2 with whitetop (*Cardaria draba*) occurring in an area less than one acre. It was chemically treated in 2006. Treatment on this site will continue as part of the Boise District weed program.

Trend

Two nested-plot frequency transects study sites (01N04W06 and 01N04W07) are established in pasture 2 (Map RNGE-1). The sites were established in 1985 and 1989 and re-visited in 1994, 2000, 2005 and 2010. The ecological site descriptions of the site are Calcareous Loam 7-10" in section 06 and Loamy 10-13" in section 07. . The section 06 community contains a low to moderate canopy of shadscale saltbush with pockets of big and bud sagebrush. There is a transition toward the southern end of the pasture from the annual-dominated community to a small (25 percent or less) area of remnant native vegetation as represented by site 07. The interspatial areas are occupied by mostly Sandberg bluegrass, squirreltail and cheatgrass in site 06, and site 07 has a fairly good population of bluebunch wheatgrass. Both sites are affected by the 1961 Squaw Creek Road and 1972 Alkali Springs #2 fires respectively, and 67 percent of the pasture has burned. (**Table ALLOT-30:** Fire history)

The frequency data for bluebunch wheatgrass shows a long-term decrease and short-term increase in trend

at site 01N04W07 and no occurrence at the other site. Cheatgrass has been detected in 2005 and since has been significantly increasing in frequency. Sandberg bluegrass has shown a static trend at one site and an increase in frequency at the other site. Squirreltail has shown a decrease at one site and an increase in frequency at the other site. (Table VEG-50 and -55, Figure VEG-85 and -86)

Big sagebrush and shadscale have shown static frequency on both sites. Shrub density data on site 01N04W06 indicate a short-term decrease and long-term increase in shadscale saltbush. Shrub density data on site 01N04W07 indicate decreases in Wyoming big sagebrush and increased low sagebrush.

Table VEG-50: Grass frequencies in pasture 2 in the Elephant Butte allotment, site 01N04W06

Grasses		Percentage				
Species	Common Name	1985	1994	2000	2005	2010
CHTE	Texas windmill grass	ND	ND	ND	ND	2
POSA3	Sandberg bluegrass	76	90	94	69	91
SIHY	Squirreltail	16	3	19	20	5
BRTE	Cheatgrass	ND	ND	ND	88	96

ND = No data recorded for annual grasses

Figure VEG-85: Grass frequencies in pasture 2 in the Elephant Butte allotment

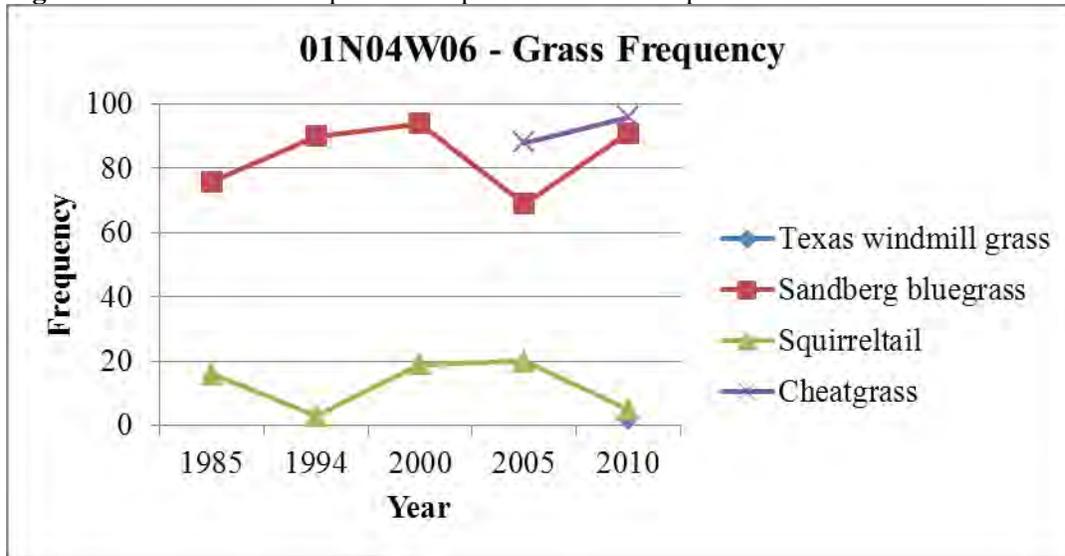
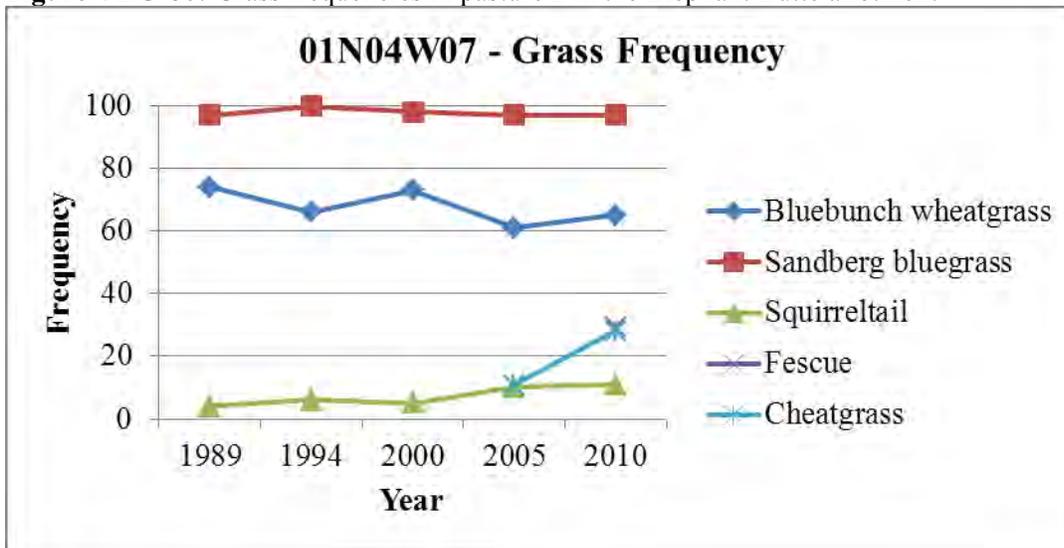


Table VEG-51: Grass frequencies in pasture 2 in the Elephant Butte allotment, site 01N04W07

Grasses		Percentage				
Species	Common Name	1989	1994	2000	2005	2010
AGSP	Bluebunch wheatgrass	74	66	73	61	65
POSA3	Sandberg bluegrass	97	100	98	97	97
SIHY	Squirreltail	4	6	5	10	11
VULPA	Fescue	ND	ND	ND	ND	29
BRTE	Cheatgrass	ND	ND	ND	11	28

ND = No data recorded for annual grasses

Figure VEG-86: Grass frequencies in pasture 2 in the Elephant Butte allotment



The general view photos show these communities are moderately dominated by annuals (Figure VEG-87).

Figure VEG-87: From left to right: June 1985 and May 2010 photo trend in the Elephant Butte allotment showing general view on site 01S04W06 in pasture 2.



Pasture 3

Rangeland Health Field Assessment

Table VEG-52: Rangeland health field assessments for Elephant Butte pasture 3

#	Ecological Site
1	Calcareous Loam 7-10" with inclusions of Loamy 10-13"
1	Loamy 10-13"

This pasture shows similar signs of inadequacy as pastures 2 and 3 within the functional/structural groups and invasive plant indicators. Both of these indicators are rated with a moderate to extreme departure from potential. Deep-rooted perennial bunchgrasses are scarce to absent, with only trace signs of Indian ricegrass (less than 2 percent composition). The shallow-rooted perennial grasses squirreltail (*Elymus*

elymoides) and Sandberg bluegrass are a minor component at the site (2 to 5 percent composition). Although Thurber’s needlegrass (*Achnatherum therberianum*) is a subdominant grass species at potential, it was not observed at either site. Shadscale is currently the dominant shrub but is reduced. Biological soil crusts are present in trace amounts. Cheatgrass has replaced large deep-rooted perennial grasses and is now the dominant species throughout the site. Other invasive species with presence on site are clasping pepperweed (*Lepidium perfoliatum*) and greasewood (*sarcobatus vermiculatus*). Greasewood can increase on a site to a point of domination when the understory vegetation is over-grazed (USDA NRCS, 2012).

Squirreltail displays seed stalks at the assessment site, yet vigor is observed to be compromised in Indian ricegrass and Sandberg bluegrass. This indicator of reproductive capability is at a moderate departure from potential. In terms of soil surface resistance to erosion, the site lacks some soil stability due to the scarcity of large bunchgrasses and very low cover of biological soil crusts. It is rated at a slight to moderate departure from potential. Annual production is rated at a none-to-slight departure from potential, based on a mild increase due to cheatgrass presence. No livestock trails or other issues relating to compaction were observed.

Based on the compromised functional/structural plant groups, strong presence of invasive species, and decreased reproduction of perennial grasses, this assessment site is rated with an overall biotic integrity of a moderate to extreme departure from potential.

Noxious Weeds

According to the BLM Boise District weed database, there are no recorded noxious weed sites in the pasture.

Trend

Two nested-plot frequency transects study sites (01N04W10 and 01N04W14) are established in pasture 3 of the Elephant Butte allotment (Map RNGE-1). The sites were established in 1988 and 1989 and re-visited in 1994, 2000, 2005, and 2010. The ecological site descriptions of the sites in section 10 is Calcareous Loam 7-10” and section 14 is a Loamy 10-13”. The community, as represented by the trend sites, contains a low canopy of shadscale saltbush and bud sagebrush. The interspatial areas are occupied by mostly Sandberg bluegrass, squirreltail and cheatgrass. Both sites are affected by the 2002 Elephant fire and 15 percent of the pasture has burned (**Table ALLOT-30**: Fire history).

Sandberg bluegrass and squirreltail have shown a long-term decrease in frequency at both sites. Cheatgrass has been detected in 2005 and since has been co-dominating the sites. Crested wheatgrass was detected at in 2010 at site 01N04W10 (Tables VEG-57 and -58, Figures VEG-88 and -89).

Bud sagebrush and shadscale saltbush have shown a decrease in long-term frequency on both sites. Shrub densities at both sites are also decreasing.

Table VEG-53: Grass frequencies in pasture 3 in the Elephant Butte allotment, site 01N04W10

Grasses		Percentage				
Species	Common Name	1988	1994	2000	2005	2010
POSA3	Sandberg bluegrass	96	97	94	25	91
SIHY	Squirreltail	8	0	1	1	1
AGCR	Crested wheatgrass	ND	ND	ND	ND	6
BRTE	Cheatgrass	ND	ND	ND	100	99

ND = No data recorded for annual grasses.

Figure VEG-88: Grass frequencies in pasture 3 in the Elephant Butte allotment

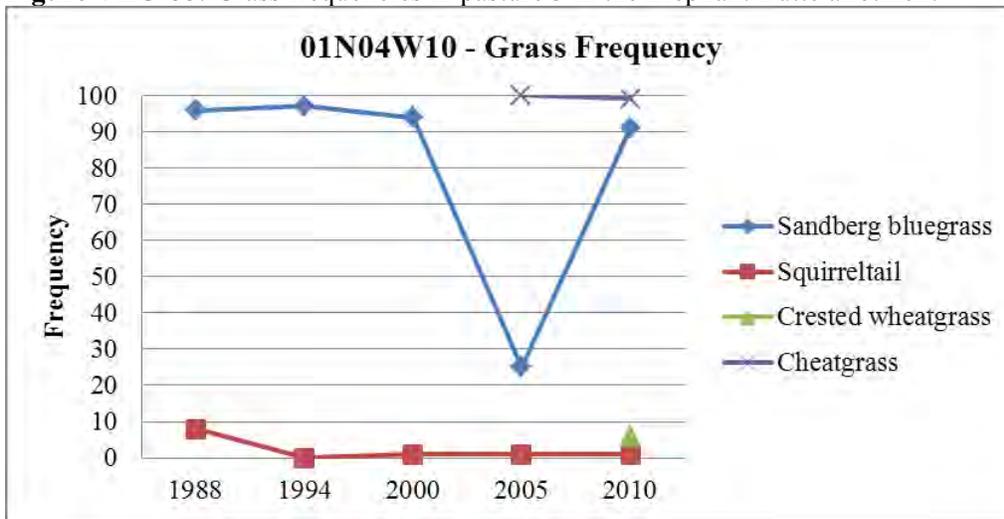
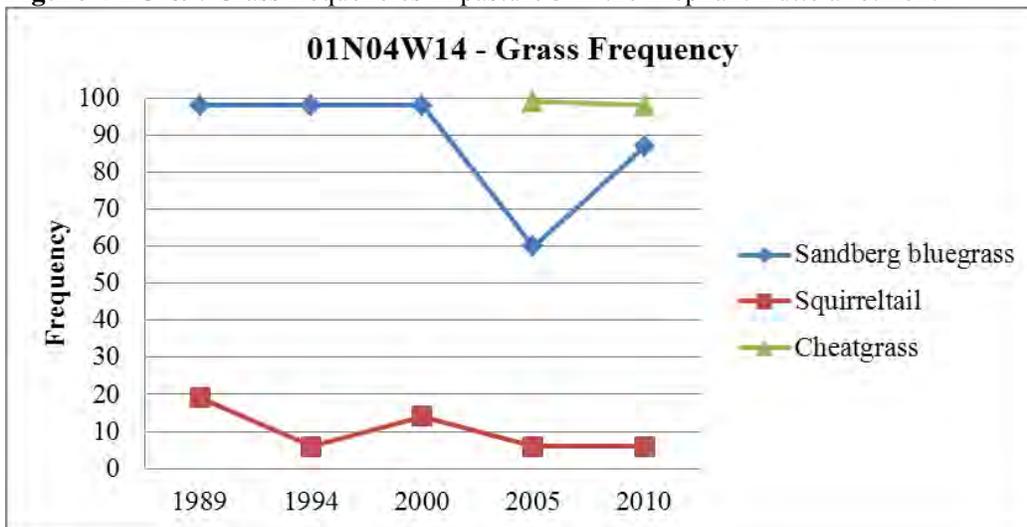


Table VEG-54: Grass frequencies in pasture 3 in the Elephant Butte allotment, site 01N04W14

Grasses		Percentage				
Species	Common Name	1989	1994	2000	2005	2010
POSA3	Sandberg bluegrass	98	98	98	60	87
SIHY	Squirreltail	19	6	14	6	6
BRTE	Cheatgrass	ND	ND	ND	99	98

ND = No data recorded for annual grasses.

Figure VEG-89: Grass frequencies in pasture 3 in the Elephant Butte allotment



The general view photos show these communities are dominated by annuals (Figure VEG-90).

Figure VEG-90: From left to right: June 1985 and May 2005 photo trend in the Elephant Butte allotment showing increased annuals and decreased shrub component on site 01S04W10 in pasture 3.



Pasture 4

Rangeland Health Field Assessment

Table VEG-55: Rangeland Health Field Assessments within Elephant Butte pasture 4

#	Ecological Site
1	Calcareous Loam 7-10"

This assessment site (Table VEG-59) is noted to be a reasonable reflection of approximately 75 percent of the pasture. Functional/structural group and the invasive plants indicator are inadequate for biotic integrity. The site is lacking deep-rooted bunchgrasses and perennial forbs are greatly reduced. No Indian ricegrass or other perennial forbs were noted to be present on site, even in trace amounts. Cheatgrass is a co-dominant throughout with shadscale as the co-dominant shrub. Halogeton (*Halogeton glomeratus*) is present throughout the site as well. Wyoming big sagebrush and Sandberg bluegrass were showing signs of decadence resulting in a slight to moderate rating for the plant mortality/decadence indicator.

The soil surface shows resistance to erosion with the armoring of crusts and gravels and an indicator rating of none to slight. Indicators of soil surface loss or degradation, compaction, litter amount, annual production, and reproductive capability of plants are rated at none to slight.

Based on the compromised functional/structural plant groups and strong presence of invasive species, this assessment site is rated with an overall biotic integrity of a moderate to extreme departure from potential.

Noxious Weeds

Within the BLM Boise District weed database there are no recorded noxious weed sites in the pasture.

Trend

One nested-plot frequency transect study site (01N04W03) is established in pasture 4 of the Elephant Butte allotment (Map RNGE-1). The site was established in 1989 and revisited in 1994, 2000, 2005, and 2010. The ecological site description of the site in section 03 is Calcareous Loam 7-10". The community, as represented by the trend sites, contains a low canopy of shadscale saltbush and bud sagebrush. The interspatial areas are occupied by mostly Sandberg bluegrass and cheatgrass.

Sandberg bluegrass has shown a long-term static trend in frequency and squirreltail is decreasing. Cheatgrass has been detected in 2005 and since has been co-dominating the site (Table VEG-56, Figure

VEG-91).

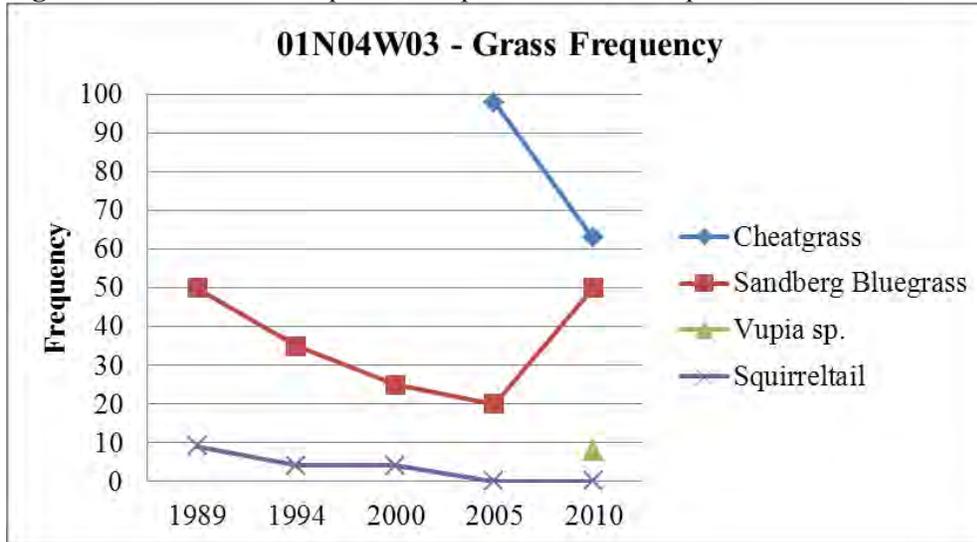
Bud sagebrush and shadscale saltbush has shown a decrease in long-term frequency. Shrub density on site 01N04W03 detected short-term increase and long-term decrease in shadscale saltbush and long-term decrease in bud sagebrush.

Table VEG-56: Grass frequencies in pasture 4 in the Elephant Butte allotment, site 01N04W03

Grasses		Percentage				
Species	Common Name	1989	1994	2000	2005	2010
BRTE	Cheatgrass	ND	ND	ND	98	63
POSA3	Sandberg bluegrass	50	35	25	20	50
VULPIA	Vulpia sp.	ND	ND	ND	ND	8
SIHY	Squirreltail	9	4	4	0	0

ND-No data recorded for annual grasses.

Figure VEG-91: Grass frequencies in pasture 4 in the Elephant Butte allotment



The general view photos show these communities are dominated by annuals (Figure VEG-92).

Figure VEG-92 From left to right: April 1990 and May 2010 photo trend in the Elephant Butte allotment showing increased annuals and decrease in shrub component on site 01S04W03 in pasture 4.



Pasture 5

Rangeland Health Field Assessment

Table VEG-57: Rangeland health field assessment for pasture 5 of the Elephant Butte allotment

#	Ecological Site
1	Sandy Loam 8-12" (Job Corp fire 1981)

Functional/structural group and the invasive plants indicators are inadequate for biotic integrity, with indicator ratings of moderate to extreme. Few shrubs are present on site, with cheatgrass and Thurber's needlegrass as co-dominant species. Squirreltail and Sandberg bluegrass are minor components (2 to 5 percent) and forbs are recorded at a trace amount (< less than 2 percent composition). Invasive plants on-site consist of cheatgrass (co-dominant), Russian thistle (*Salsola kali*), and halogeton. Litter amount has a slight to moderate departure, with an excess of litter mainly due to a strong cheatgrass presence. A compaction layer associated with roads and livestock trails is present, lending to a slight to moderate departure from potential. Seedheads were noted on Indian ricegrass, squirreltail, halogeton and Thurber's needlegrass, thus affording a call of none to slight departure for the reproductive capability indicator. Both soil surface indicators, plant mortality/decadence and annual production, have a none-to-slight departure from potential.

Based on the compromised functional/structural plant groups and strong presence of invasive species, this assessment site is rated with an overall biotic integrity of a moderate departure from potential.

Noxious Weeds

Within the BLM Boise District weed database there are no recorded noxious weed sites in the pasture.

Trend

One nested-plot frequency transect study site (02N04W22) is established in pasture 5 of the Elephant Butte allotment (Map RNGE-2). The site was established in 1989 and revisited in 1994, 2000, 2005 and 2010. The ecological site description of the site in section 22 is Calcareous Loam 7-10". The community, as represented by the trend sites, contains no shrub component and is occupied by mostly Sandberg bluegrass, squirreltail, needle-and-thread, and cheatgrass. The site is adjacent to the fire line for the 1971 and 1981 Job Core, 1983 South Two, 1987 Hwy 78-II, and 2003 Gun Club fires respectively. Eighty-eight percent of the pasture has burned. (**Table ALLOT-30:** Fire history)

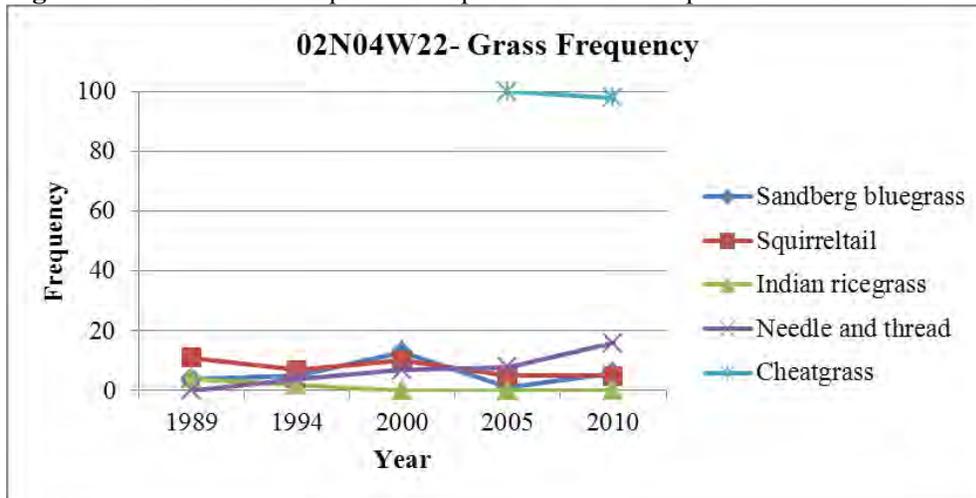
Sandberg bluegrass has shown a long-term increase trend in frequency and squirreltail is decreasing. Needle and thread has shown a long-term increase in frequency. Cheatgrass was detected in 2005 and since has been dominating the site (Table VEG-59, Figure VEG-93).

Table VEG-59: Grass frequencies in pasture 5 in the Elephant Butte allotment, site 02N04W22

Grasses		Percentage				
Species	Common Name	1989	1994	2000	2005	2010
POSA3	Sandberg bluegrass	4	5	13	1	6
SIHY	Squirreltail	11	7	10	5	5
ORHY	Indian ricegrass	4	2	0	0	0
STCO4	Needle and thread	0	4	7	8	16
BRTE	Cheatgrass	ND	ND	ND	100	98

ND-No data recorded for annual grasses.

Figure VEG-93: Grass frequencies in pasture 5 in the Elephant Butte allotment



The general view photos show these communities are dominated by grasses (Figure VEG-94).

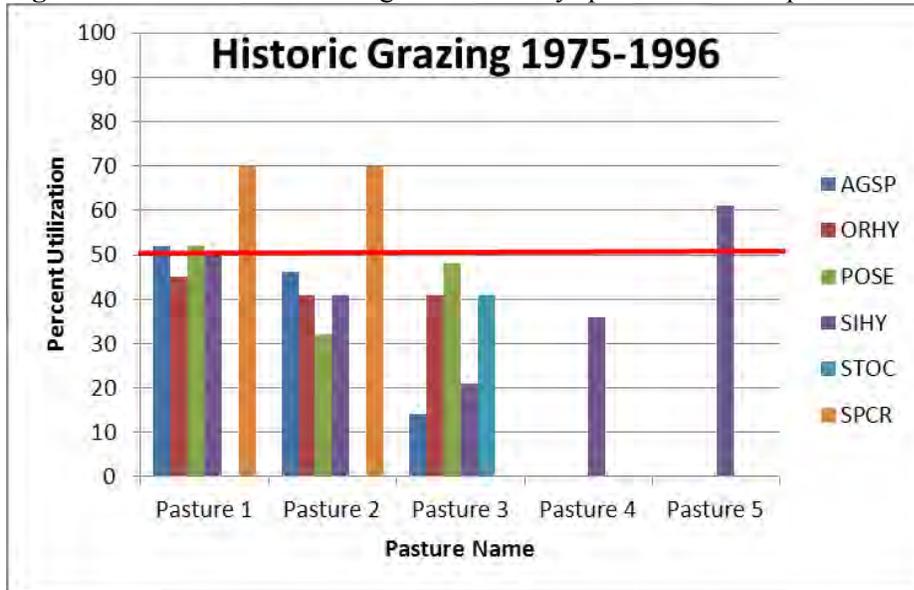
Figure VEG-94: From left to right: April 1990 and June 2010 photo trend in the Elephant Butte allotment showing general view of site 02S04W22 in pasture 5.



Utilization

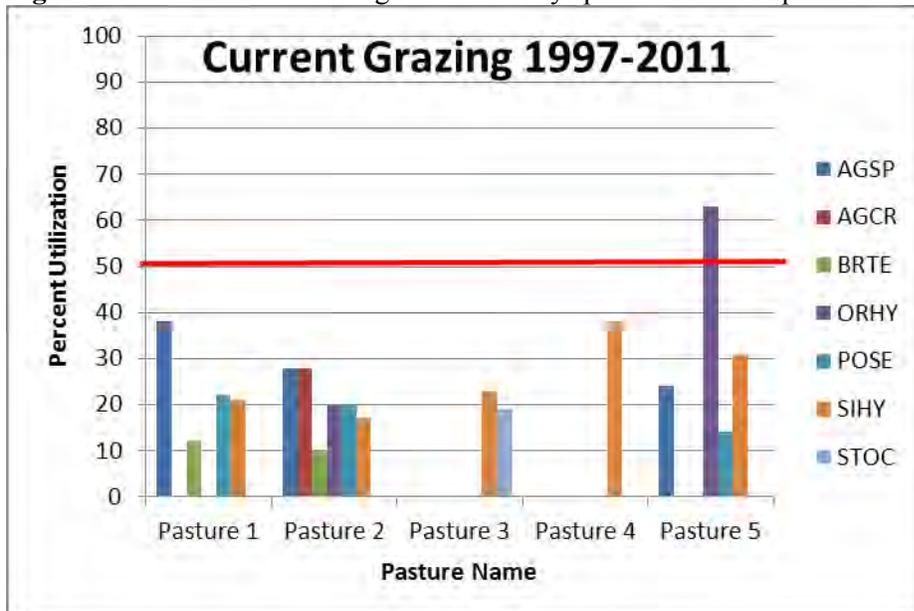
Utilization levels from 1975 to 1996 for upland key species in the Elephant Butte allotment have ranged from slight to heavy. Current utilization levels from 1997 to 2011 have been slight to light, with the exception of 63 percent utilization in 2000 on Indian ricegrass in pasture five. Utilization data indicate pasture 1 generally received light to moderate use of the uplands. Pastures 3 and 4 generally receive moderate use. In this allotment, wild horses also use pastures 3 and 4 (Figures VEG-95 and -96: Average Utilization).

Figure VEG-95: Historic average utilization by species on the Elephant Butte allotment



Horizontal line represents 50 percent utilization as specified in Owyhee Resource Management Plan.

Figure VEG-96: Current average utilization by species on the Elephant Butte allotment



Horizontal line represents 50 percent utilization as specified in Owyhee Resource Management Plan

Actual Use

Actual use data for 1997 to 2011 indicates that when grazed, the Elephant Butte allotment ranged from 179 to 910 AUMs, or 7 to 35 acres per AUM. The allotment was rested or had no available data for grazing in 1991, 2005, and 2008. Historically, authorized use in the Elephant Butte allotment has ranged from 7 to 34 acres per AUM, compared to the rate of 15 to 39 acres per AUM that is currently authorized. (Tables VEG-60 and 61 below and Appendix C Actual Use)

Table VEG-60: Elephant Butte allotment actual use by pasture, displayed by ranges since 1990

Elephant Butte Allotment	Dates grazed	AUMs Range	Acres per AUM Range	# Years Rested since 1990³	Public Acres per Pasture
Pasture 1	4/1-6/2	61-283	11-52	10/22	3,192
Pasture 2	4/1-5/20 & 1/2-2/5 ¹	45-215	9-43	15/22	1,923
Pasture 3	4/1-5/31 & 12/1-1/28 ²	23-172	14-103	10/22	2,380
Pasture 4	3/15-5/14	9-70	10-80	11/22	721
Pasture 5	3/15-5/21 & 12/8-2/1 ⁴	24-208 69-330	5-40 3-14	11/22	958

¹Used in the winter only once in 22 years during 2009

²Used in the winter only once in 22 years during 2010

³Rested during critical growth period; all pastures have had adequate rest on plants grazed during the critical growth period since 1990.

⁴Used in the winter eight out of 22 years; three of those years in both spring and winter; spring grazed plants were expected to have full recovery before winter use.

Table VEG-61: Elephant Butte allotment grazing schedule in accordance with actual use reports 2007-2011

Pasture	2007	2008	2009	2010	2011
Pasture 1	Rest	Rest	4/1-5/11	4/3-5/18	4/1-5/31
Pasture 2	4/1-5/7	Rest	1/2-2/5(winter)	Rest	Rest
Pasture 3	Rest	Rest	4/1-5/11	12/1-1/28(winter)	4/23-5/31
Pasture 4	Rest	Rest	Rest	Rest	3/18-4/1
Pasture 5	3/15-4/2	Rest	3/17-3/31	3/15-4/2	Rest

Evaluation of Standard 6

Evaluation Finding – Allotment/watershed is:

Meeting the Standard

Not meeting the Standard, but making significant progress toward meeting

Not meeting the Standard

Rationale for Evaluation Finding

The dominating presence of cheatgrass is the determining factor for evaluating the rangeland health of the Elephant Butte allotment using Standard 6-Exotic Plant Communities. The exception is a small inclusion of Wyoming big sagebrush community in the southern portion of pasture 2 that has appropriate native species present. This area resembles the potential natural community as represented by trend site 02N04W07, which has been experiencing diminishing bluebunch wheatgrass and increasing cheatgrass

since 1989. However, pasture 2 as a whole is managed as an exotic plant community. Remnant native vegetation is being maintained in pastures 1, 3, 4, and 5. These pastures are meeting Standard 6. Perennial grasses and annual weeds are mostly static, according to trend data, and shrub cover is mostly declining. Pasture 2 is not meeting Standard 6.

RHFAs and trend data outside of the southern end of pasture 2 indicate that the plant communities have lost species diversity to dominance of cheatgrass and other annual weedy species, with decreased presence of desirable perennial species such as Indian ricegrass, bluebunch wheatgrass, Sandberg bluegrass, bud sagebrush and shadscale. The abundance of species at potential and species diversity is lower than expected as the allotment has shifted to a cheatgrass/annual plant community. The allotment appears to provide physical soil stability, yet it has little to no maintenance of native perennial species, which are generally absent at several sites. This is likely a result of resource competition with non-native species. Cheatgrass is a winter annual that germinates anytime from fall through spring when soil moisture and temperatures are adequate. It has a competitive advantage over native vegetation for water and nutrients when many native perennials are just beginning growth (Pellant, 1996). Cheatgrass completes its lifecycle earlier than native perennial plants, creating a discontinuous and inefficient use of the sun's energy in cheatgrass-dominated communities (Pellant, 1996), such as in the Elephant Butte allotment. As a result, challenges are posed to provide necessary resources for the maintenance of plant vigor in remnant native plants and have led to a subsequent crippling effect for reproduction and further recruitment.

All of the representative assessment sites in this allotment have crossed an ecological threshold away from the potential plant community to an annual-dominated plant community with inclusions of native perennial vegetation. It is generally not economically feasible to move this state back toward the potential reference community. The cumulative impacts of many different types of disturbances have led to the overall decline in rangeland vigor and productivity. Invasive annual plants now occupy a substantial part of the pastures and have significantly altered the ecological processes of the native plant communities. The Elephant Butte allotment is not meeting Standard 6 in all of pasture 2.

The only recorded noxious weed site in the BLM Boise District weed database is whitetop, which has been found in the southern portion of pasture 2 at one site. This site occurs in a fraction of the allotment as a whole, is currently being treated, and does not play a role in the allotment not meeting Standard 6. However, the presence of this noxious weed should be taken seriously when considering management objectives. Maintaining the health and vigor of the remnant native perennial species can dampen the speed of invasion of unwanted species.

Trend data indicate the plant communities are dominated by cheatgrass and Sandberg bluegrass and other annuals, with some bud sagebrush and shadscale saltbush. All of the components of the reference community on the allotment have crossed the threshold. Trend data show perennial species diminishing over time. Specifically, both Sandberg bluegrass and squirreltail are decreasing in frequency in pastures 1 and 3. Pasture 2 is experiencing a decrease in bluebunch wheatgrass and pastures 4 and 5 are experiencing decreases in squirreltail frequency. The majority of the allotment has been affected by fire or cheatgrass is either dominating or increasing. The rangeland health of cheatgrass-infested communities is either at risk or already in the unhealthy category, with even more undesirable weeds invading some cheatgrass communities (Pellant, 1996). The number of perennial species diminishing over time, as shown in the trend data, is a significant factor in failing to meet Standard 6.

Current utilization levels from 1997 to 2011 have been slight to light, with the exception of 63 percent utilization in 2000 on Indian ricegrass in pasture five. These utilization levels are appropriate to allow for maintenance of existing plant communities. Light grazing means a degree of herbage production that

allows palatable species to maximize their herbage producing ability (**Holecheck, Gomez, Molinar, & Galt, 1999**).

Actual use has occurred for approximately 6 weeks during the critical growth period (March-June) in the allotment when grazed at 8 to 35 acres per AUM. Carrying capacities for cheatgrass-dominated rangelands have been estimated at 1.5 to 3.0 acres per Animal Unit Month (AUM) on good cheatgrass range (Hull and Pehanec 1947) and 5 to 8 acres per AUM on other Idaho rangelands (Klemmedson and Smith 1964).

Proper rest has occurred during the critical growth period (March-June). In the semi-arid and desert range types, rotation grazing systems generally showed no advantage over continuous or season-long grazing (**Holecheck, Gomez, Molinar, & Galt, 1999**). The concept of a threshold of environmental change has been proposed by Friedel (1991) to explain situations where shifts in plant community composition or structure are drastic and the possibility of a return to the original plant community by simply changing livestock grazing management is unlikely. However, future management should include opportunity to maintain the health and vigor of remnant native perennial species.

Rangeland health assessments and trend data lead to a finding that the biotic integrity of pasture 3 departs from potential to a degree supporting a conclusion that it is not meeting Standard 6 – Exotic Plant Communities. Noxious weeds are not increasing although the number of perennial species (Sandberg bluegrass and bluebunch wheatgrass) is diminishing over time as annual weed invasion persists. Although the pasture contains all of the components found within the potential natural community, the balance is no longer within the reference state. Several factors could be the influences driving this pasture to its imbalance in biotic function: recent and historic fire impacts, historic utilization, and current actual use. Although the biotic integrity has been compromised, it is important to maintain the remnant native plant species present and hydrologic and soil stability in an effort to dampen further degradation of the pasture. Without proper grazing management of the remnant native perennials, there is concern for further invasion of an even less desirable annual species than cheatgrass or medusahead, ventenata (*Ventenata dubia*). This very elastic species is known to occur at several locations within close proximity to pasture 3 in the Owyhee Front. Ventenata is a winter annual, has minimal forage value and the ability to replace perennial grasses and forbs, and is a strong competitor with cheatgrass and medusahead stands. When robust perennial vegetation is maintained in the community, it will provide resilience against invasion or expansion of annual weeds, have a better chance at recovering from fire or drought, and will produce more forage for wildlife and livestock (Butler, Brummer, Samsel, Marling, & Comingore, 2009).

Jackson Creek Allotment

Pasture 1

Rangeland Health Field Assessment

The rangeland health field assessment conducted on a Shallow Claypan 11”-13” ecological site indicated that all structural/functional groups were present and dominated by perennial increasers such as Sandberg bluegrass. Bulbous bluegrass, cheatgrass, and medusahead occur on this site. There was abundant litter and vegetation with little bare ground on this site. The second rangeland health assessment, conducted on a Shallow Claypan 11”-13” ecological site, indicates the characteristics of an old burn even though no charred debris was observed. The site is sparsely distributed with shrubs, and large perennial bunchgrasses are scattered in small patches; Sandberg bluegrass, vententata, and medusahead dominate the site. Reproductive capabilities were less than expected on perennial plants. There are a few scattered nitrogen fixers.

Trend

At 03S06W25, bluebunch wheatgrass frequency remained at low levels. Sandberg bluegrass frequency declined long term, but remained static since 2003. Low sagebrush frequency decreased significantly at this site (Table VEG-62 and Figure VEG-97).

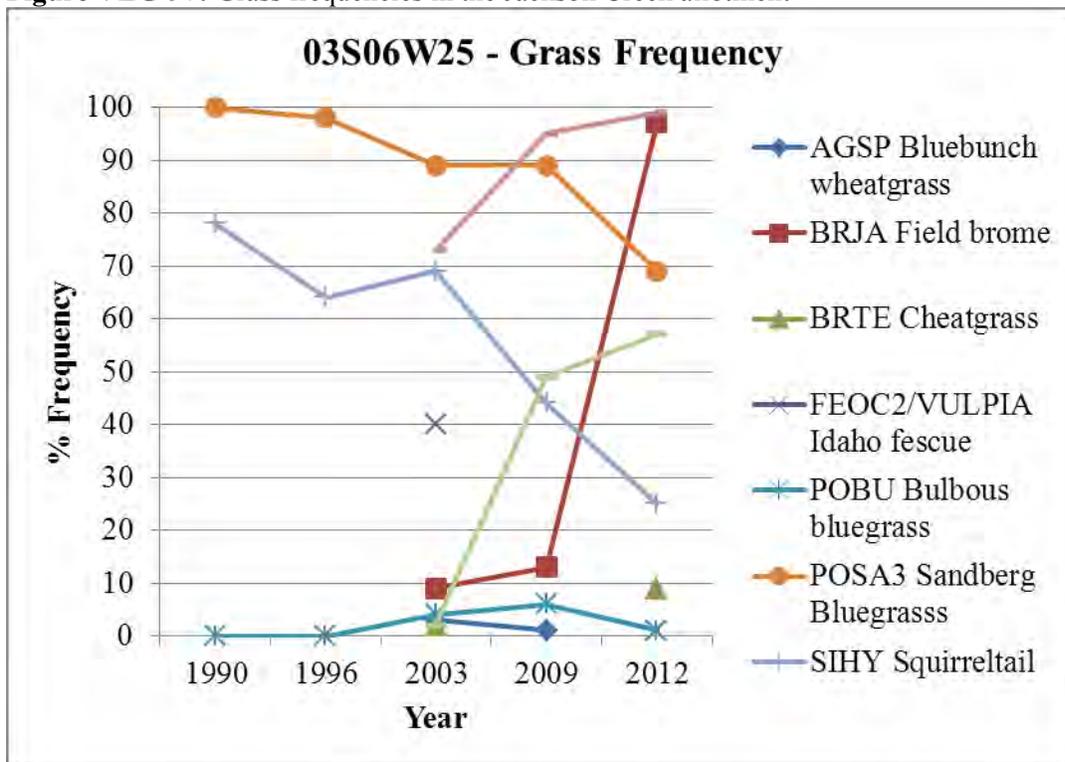
Table VEG-62: Grass frequency in pasture 1 of the Jackson Creek allotment, site 03S06W25

Grasses		1990	1996	2003	2009	2012
AGSP	Bluebunch wheatgrass	0	0	3	1	0
BRJA	Field brome	ND	ND	9	13	97
BRTE	Cheatgrass	ND	ND	2	ND	9
FEOC2/VULPIA	Idaho fescue	0	0	40	0	1
POBU	Bulbous bluegrass	0	0	4	6	1
POSA3	Sandberg Bluegrasses	100	98	89	89	69
SIHY	Squirreltail	78	64	69	44	25
VEDU	Ventenata	ND	ND	73	95	99
TAAS/TACA8	Medusahead	ND	ND	2	49	57

ND = No Data recorded for annual grasses.

¹Western fescue was most likely miss-identified for medusahead in 2003.

Figure VEG-97: Grass frequencies in the Jackson Creek allotment



Evaluation of Standard 6

Evaluation Finding – Allotment/watershed is:

Meeting the Standard

Not meeting the Standard, but making significant progress toward meeting

Not meeting the Standard

Rationale for Evaluation Finding

Of the five pastures in Jackson Creek allotment, pasture 1 is dominated by invasive annual weeds and pastures 2, 3, 4, and 5 are dominated by native plant communities. Therefore pasture 1 was evaluated under Standard 6 (Exotics other than seedings).

Pasture 1 does not have any previous fire history. The current dominant vegetation is a mix of annual weeds, North Africa grass and medusahead, with Sandberg bluegrass and squirreltail as subordinates. This pasture is not meeting Standard 6. Sandberg bluegrass and squirreltail have been on a steady decline since 1990 continuing to 2012. Other perennial grasses are scarce to absent. Annual weeds have increased in the short and long-term. Noxious weeds including tamarisk and whitetop have been chemically treated in this pasture and will continue to be monitored and treated as a part of the Boise District weed program. The occurrences of noxious weeds in this pasture do not contribute to the failure to meet the standard.

Lowry FFR Allotment

Rangeland Health Field Assessment

One RHFA site was established and read in 2001. The community, as represented by the RHFA, is dominated by low sagebrush and Sandberg bluegrass. Shrub component is higher than expected and overall rating is slight-to-moderate departure from the Loamy 13-16” site potential (Figure VEG-98).

Figure VEG-98: October 2001 overview of the RHFA on the Lowry FFR allotment



No trend data are available. Utilization data are for 2011 only. Sandberg bluegrass, crested wheatgrass, and cheatgrass were measured at 3 percent and bulbous bluegrass was measured at 33 percent. Actual use data are consistent with authorization of 6 AUMs from 12/1 to 12/31 annually (Appendix C Actual Use). Only 22 percent of the acres in the Lowry FFR allotment are publicly owned.

Evaluation of Standard 6

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

This is a one-pasture allotment dominated by invasive annual weeds and was meeting Standard 6 (Exotic Plant Communities). The community is dominated by low sagebrush and Sandberg bluegrass, invasive annuals and medusahead wildrye. The shrub component is higher than expected. Minimum requirements of soil stability and maintenance are not present and the allotment is therefore not meeting Standard 6.

One RHFA site was read in 2001. The community, as represented by the RHFA, is dominated by low sagebrush and Sandberg bluegrass. The shrub component is higher than expected and overall rating is slight-to-moderate departure from the Loamy 13-16” site potential . Not meeting Standard 6.

Utilization, actual use, season of use, and number of livestock are not significant factors in meeting or not meeting Standard 6.

Sands Basin Allotment

The Sands Basin Wild Horse Management Area is within the allotment and is discussed in the utilization and rationale section (Appendix F).

Previous Assessment

The 2001 Determination for the Sands Basin allotment (DOI BLM 2001) rated all seedings as meeting Standard 5 and conforming to Guidelines for Livestock Grazing Management. In established seedings, the diversity of perennial species is not diminishing over time. At trend sites, bluebunch wheatgrass and crested wheatgrass frequencies are static to increasing. Recruitment, plant vigor, and production were adequate. Invasive weeds, such as cheatgrass and medusahead, are common. Adequate litter and standing dead plant material are present for site protection and replenishment of nutrients.

Current Rangeland Health

Pasture 3 has undergone significant seeding treatments in the past; however, since these treatments, annual weed invasion has dominated the majority of those areas treated. Areas previously burned have also undergone a shift toward dominance of annual weeds. In the 2000 rangeland health field assessment, pasture 3 was documented to have an annual weed invasion of cheatgrass and medusahead. Recent field observations within pasture 3 show a dominance of annual weeds within the southern half of the pasture. This invasion has adversely compromised the integrity of the seedings and native vegetation. While there are some inclusions of intact seedings and native communities within pasture 3, the majority is dominated by annual weeds and thus has been included here within Standard 6.

Rangeland Health Field Assessments

Table VEG-63: Rangeland health field assessments for Sands Basin pasture 3

#	Ecological Site
1	Loamy 10-13" (Trimble fire, 2002)
1	Loamy 10-13"
1	Loamy 11-13" inclusion within Shallow Claypan 12-16" (Trimble fire and post fire seeding)

The Trimble fire moved through pasture 3 in 2002, burning approximately 99 percent of the pasture and two of the three RHFA sites (Table VEG-63). The two southern assessment sites are within immediate proximity of each other and are not within a post-fire seeding. The northernmost RHFA is within a post-Trimble fire aerial seeding.

The two southern RHFAs reside immediately adjacent to each other, one within the Trimble burn and the other outside the burn. The unburned RHFA site has a moderate to extreme departure for functional/structural groups, based on a lack bluebunch wheatgrass, which is the expected dominant grass species, and an increase in cheatgrass and medusahead. Shrub cover is as expected for site potential. Invasive species are dense throughout the site, indicating a moderate to extreme departure rating for the invasive plants indicator. Litter is at a moderate departure from potential, with several areas exceeding what is expected due to the presence of invasives. Annual production is reduced at the site due to a lack of large perennial bunchgrasses. When present, most perennial plants are reproducing. Soil surface indicators are at a slight to moderate departure due to a lack of organic matter.

The burned RHFA site is strongly lacking in three indicator ratings: functional structural group, litter amount, and invasive plants. The plant community is lacking diversity, with a dominance of medusahead and a loss of bunchgrasses and shrub cover resulting in a moderate to extreme departure. The annual grass invasion has created higher than expected amounts of litter, and the litter indicator is rated as moderate. Invasive plants are densely present throughout the site, with a dominant visual aspect of few shrubs or shrub skeletons and an annual grass understory. The invasive plants indicator is rated at a moderate to extreme departure. Presence of some seedstalks where bunchgrasses can be seen, led to a moderate departure rating for the reproductive capability indicator. Plant mortality within the shrub component hassled to a rating of slight to moderate departure.

The seeded RHFA site to the north has a dominant visual aspect of the seeded species with few shrubs present. The site has a none-to-slight departure for all indicators except functional/structural group, litter amount, and invasive plants, which each have a slight to moderate departure rating. The functional/structural group is lacking shrubs but retains some plant diversity in terms of deep- and shallow-rooted bunchgrasses and forbs. Litter amount is slightly high due to the heavy cover of bunchgrasses. Invasive plants are few, with presence of cheatgrass and medusahead, the two annual grasses of concern. This seeding has a biotic integrity rating of a none-to-slight departure from potential.

Overall, the ability of the two native sites to perform nutrient cycling and sustain biotic integrity is very low. The overall biotic rating for these two sites is an extreme departure, based mainly on a lack of species diversity, imbalanced functional/structural group, a dominance of invasive grasses and an excess of litter.

Noxious Weeds

Two noxious weeds sites are in the southeast corner of pasture 3 documented within the BLM Boise District weed database. Canada thistle was first identified in 2003 at a site 0.1 to 1 acre in size and was chemically treated in 2004. Also in 2003, Russian olive was identified in an area less than 0.1 acre in size and was not treated. These sites will continue to be treated as a part of the BLM Boise District weed program.

Trend

One nested-plot frequency transect study site (01N06W14) was established in pasture 3 in 1991 and revisited in 2010. The site has been aerielly seeded in the past. The community, as represented by the trend site, contains a scattered canopy of big sagebrush with pockets of low sagebrush. The interspatial areas are occupied by mostly Sandberg bluegrass, squirreltail, fescue, field brome, cheatgrass, and

medusahead.

Bluebunch wheatgrass and Sandberg bluegrass show a significant downward trend in frequency. Crested wheatgrass, field brome, medusahead, fescue, Japanese brome, and cheatgrass all show significant increases in frequency from 1991 to 2010 (Table VEG-67, Figure VEG-99).

Trend data showed a significant decrease in frequency of Wyoming big sagebrush, a significant increase of horsebrush from 1991 to 2010 horsebrush showed. Shrub density data showed an upward trend for Wyoming big sagebrush and decreases in low sagebrush species density on site 01N06W14.

Table VEG-64: Grass frequencies in pasture 3 of the Sands Basin allotment 01N06W14; this site is for wild horse utilization for the Sands Basin HMA

Grasses		Percentage	
Species	Common Name	1991	2010
AGCR	Crested wheatgrass	0	5
AGSP	Bluebunch wheatgrass	21	1
BRJA	Field brome	0	44
POSA3	Sandberg bluegrass	100	84
SIHY	Squirreltail	23	27
TACA8	Medusahead	0	73
VULPA	Fescue	0	39
BRTE	Cheatgrass	0	50

Figure VEG-999: Grass frequencies in pasture 3 of the Sands Basin allotment

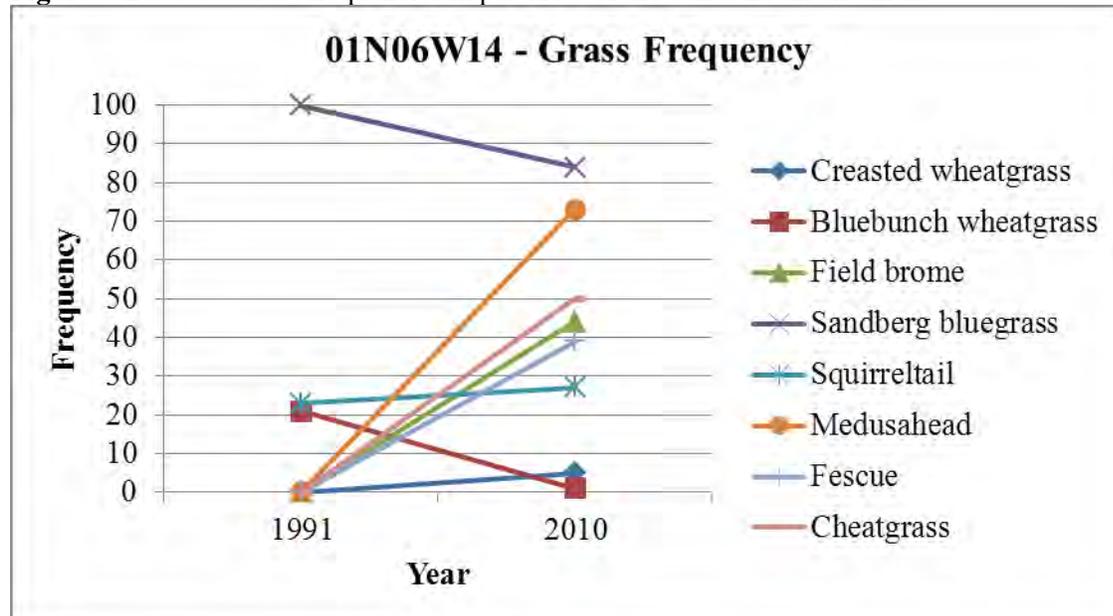


Figure VEG-100: From left to right: August 1991 and August 2011 photo trend in the Sands Basin allotment showing increased annuals and decreased shrub density from the effects of the 2002 Trimble fire on site 01N06W014 in pasture 3.



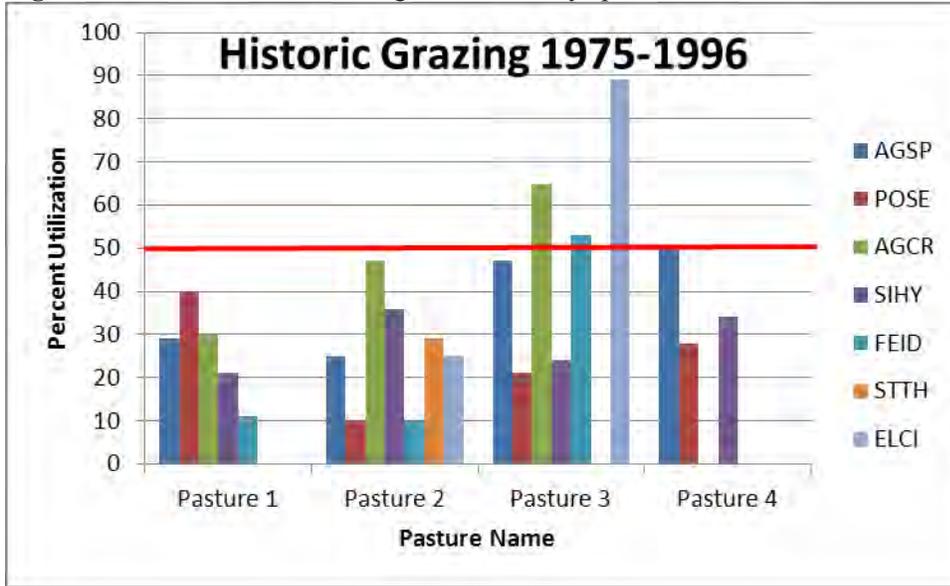
Figure VEG-101: From left to right: July 1991 and July 2010 photo trend in the Sands Basin allotment showing increased annuals from the effects of the 2002 Trimble fire on site 01N06W024 in pasture 3.



Utilization

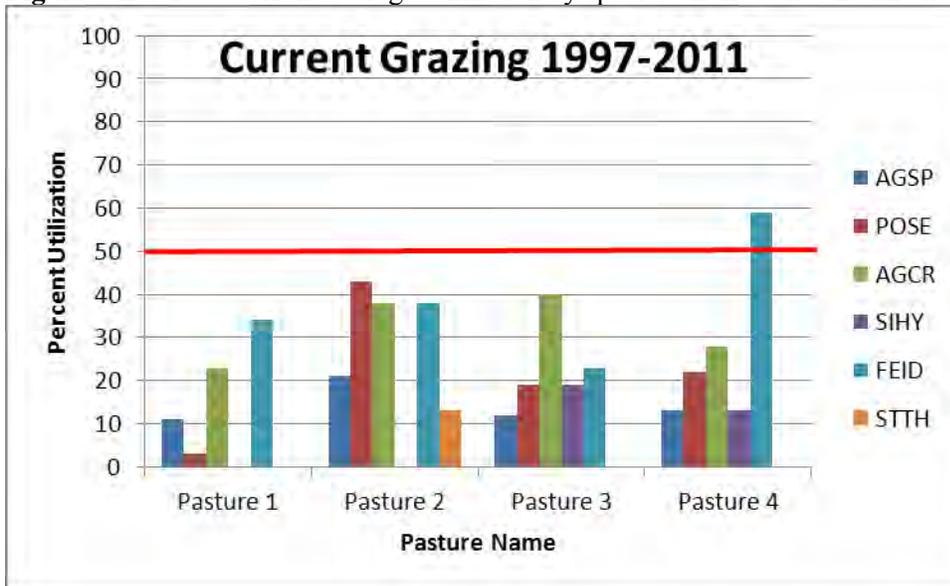
Utilization levels from 1975 to 1996 for upland key species in pasture 3 were light to heavy, with use above 50 percent on crested wheatgrass, Idaho fescue, and basin wildrye. More recent data from 1997 to 2011 has shown slight to light use, with the heaviest use of 40 percent on crested wheatgrass (Figures VEG-102 and 103). Utilization data reflect both wild horse and cattle grazing. Census data for Sands Basin HMA in 2003 showed 52 and 64 head in 2006 over the animal management level of 49 head (Appendix F).

Figure VEG-102: Historic average utilization by species on the Sands Basin allotment



Horizontal line represents 50 percent utilization as specified in Owyhee Resource Management Plan.

Figure VEG-103: Current average utilization by species on the Sands Basin allotment



Actual Use

Actual use data for 1990 to 2011 indicates that when grazed, the Sands Basin allotment ranged from 122 to 1016 AUMs, or 11 to 89 acres per AUM. The allotment was rested or had no available data for grazing in 1991, 1994, and 2004. Historically, authorized use in the Sands Basin allotment has ranged from 11 to 15 acres per AUM, as compared to the rate of 11 to 89 acres per AUM that is currently authorized. (Tables VEG-68 and -69 below and Appendix C Actual Use)

Table VEG-65: Sands Basin allotment actual use by pasture displayed by ranges since 1990

Sands Basin Allotment	Dates grazed	AUMs Range	Acres per AUM Range	# Years Rested since 1990 ²	Public Acres per Pasture
Pasture 1	3/31-6/3 & 10/8-11/14 ¹	37-394	5-49	5/22 ³	1,828
Pasture 2	4/1-6/7 & 10/1-11/30	55-661 6-314	6-70 12-640	7/22	3,841
Pasture 3	4/1-6/10	4-234	9-495	8/22	1,980
Pasture 4	4/1-6/18 & 10/12-11/30	27-715 9-126	8-218 47-653	6/22 ³	5,873

¹Used in the winter only twice in 22 years during 2009 and 2000

²Rested during critical growth period

³Pastures not having adequate rest on plants grazed during the critical growth period since 1990.

⁴Used in the winter four out of 22 years

Table VEG-66: Sands Basin allotment grazing schedule in accordance with actual use reports 2007-2011

Pasture	2007	2008	2009	2010	2011
1 East Sands	3/31-4/30	4/1-5/1	4/1-4/10 10/8-10/12	4/1-5/15	4/3-4/24
2 Seeding	10/28-11/6	5/2-6/6 10/28-11/6	3/11-4/25 10/1-10/7 10/13-10/31	5/16-6/6 10/29-10/31	5/1-6/7 11/6-11/7
3 Bridge Creek	4/1-4/30	4/2-5/4	4/1-7/30	4/1-4/30	4/2-4/30
4 Barrel Springs	5/1-5/24	5/5-6/2 11/8-11/10	5/1-5/30	5/1-6/3	4/25-6/4

Evaluation of Standard 6

Evaluation Finding – Allotment/watershed is:

Meeting the Standard

Not meeting the Standard, but making significant progress toward meeting

Not meeting the Standard

Rationale for Evaluation Finding

Despite the small inclusion of the northern seeded area represented by one trend site and other native plant community inclusions, the dominating presence of annual weeds within pasture 3 is the determining factor for evaluating the rangeland health within Standard 6.

Data from assessment sites for pasture 3 identify a dominant presence of annual invasive weeds, lack of species diversity, and poor recruitment of the remnant native perennial vegetation. Noxious weeds were not observed. Cheatgrass and medusahead were present in the assessment of the NW Owyhee Front (DOI BLM 2001); however, at the time, it did not appear to be as severe an issue as it is currently.

Invasive plants within the assessment sites have impacted the ecosystem by altering the composition of species away from potential. This alteration toward an annual-dominated community poses ecological implications to the native flora and fauna through an altered regime of energy flow and nutrient balance (Pellant, 1996) and in pasture 3, it has led to a significant departure from potential. As a result, challenges

are posed to provide necessary resources for the maintenance of plant vigor in remnant native plants and have led to a subsequent crippling effect for reproduction and further recruitment.

The noxious weed Canada thistle is known to occur in the southeast corner of the pasture; it is currently being treated, is not known to be increasing and does not play a role in this pasture failing to meet Standard 6. However, the presence of this noxious weed should be taken seriously when considering management objectives. Maintaining the health and vigor of the remnant native perennial species can dampen the speed of invasion of unwanted species.

Trend data also support this shift in plant community showing a long-term decrease in frequency of native perennial bunchgrasses and a long-term increase of several annual weeds which now dominate the site. For areas seeded in the early 1980s, crested wheatgrass has a very low frequency of occurrence (5 percent). At the time of the Assessment of the NW Owyhee Front, a decline in vigor of crested wheatgrass was identified for pasture 3 (DOI BLM 2001).

This downward trend of native perennial bunchgrasses and increase in annual weeds is likely a response to recent wildfire.

In 2002, this pasture burned almost in entirety and was seeded. However, since treatment, this pasture has been substantially invaded by annual weeds, which now make up the dominant vegetation in much of the pasture. While there are some inclusions of intact seedings and native communities within pasture 3, the biotic integrity of the pasture has been dramatically compromised due to the dominance of exotic annual species and season-long wild horse use and fire. This pasture is not meeting Standard 6 (Exotic Plant Communities, other than Seedings). Species diversity is low, with trend data reflecting a decline in perennial grasses and shrubs and the increase in annual grasses. Noxious weeds including Canada thistle and Russian olive have been chemically treated in this pasture, and will continue to be monitored and treated as a part of the Boise District weed program.

Utilization levels on average have remained at a slight to light level from 1997 to present. This average level of utilization is below the maximum allowable level of 50 percent utilization, as stated in the Owyhee RMP (USDI BLM, 1999). However, the historic utilization of Idaho fescue, crested wheatgrass, and basin wildrye was over 50 percent, and use of bluebunch wheatgrass averaged 48 percent, levels that are considered problematic for rangeland health.

Historic actual use data from 1990 to 2006 show a pattern of critical growing-season use with rest every 1 to 2 years. From 2005 to 2011, grazing has occurred every year during the critical growing season, with no years of rest, which has had a problematic influence on current conditions.

Rangeland health assessments and trend data lead to a finding that the biotic integrity of pasture 3 departs from potential significantly enough to support a conclusion that it is not meeting Standard 6- Exotic Plant Communities. Noxious weeds are not increasing, although the number of perennial species, mainly Sandberg bluegrass and bluebunch wheatgrass, is diminishing over time as annual weed invasion persists. Although the pasture does contain all of the components found within the potential natural community the balance is no longer within the reference state. Several factors could influence influencing the imbalance in biotic function: recent and historic fire impacts, historic utilization, and current actual use. Although the biotic integrity has been compromised, it is important to maintain the remnant native plant species present and hydrologic and soil stability in an effort to dampen further degradation of the pasture. Without proper grazing management of the remnant native perennials, there is concern for further invasion of an even less desirable annual species than cheatgrass and medusahead, ventenata (*Ventenata dubia*). This very elastic species is known to occur at several locations within close proximity to pasture 3 in the Owyhee Front. Ventenata is a winter annual, has minimal forage value and has been observed

growing in patches of both cheatgrass and medusahead in the Boise Foothills (personal communications Pellant 2012). When robust perennial vegetation is maintained in the community, it will provide resistance to invasion or expansion of annual weeds, have a better chance at recovering from fire or drought, and will produce more forage for wildlife and livestock (Butler, Brummer, Samsel, Marling, & Comingore, 2009).

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Appendix A: Idaho Standards for Rangeland Health and Guidelines for Livestock Grazing Management

Standards for Rangeland Health

Introduction

The Standards for Rangeland Health, as applied in the State of Idaho, are to be used as the Bureau of Land Management's management goals for the betterment of the environment, protection of cultural resources, and sustained productivity of the range. They are developed with the specific intent of providing for the multiple use of the public lands. Application of the standards should involve collaboration between the authorized officer, interested publics, and resource users.

Rangelands should be meeting the Standards for Rangeland Health or making significant progress toward meeting the standards. Meeting the standards provides for proper nutrient cycling, hydrologic cycling, and energy flow.

Monitoring of all uses is necessary to determine if the standards are being met. It is the primary tool for determining rangeland health, condition, and trend. It will be performed on representative sites.

Appropriate to soil type, climate, and landform, indicators are a list of typical physical and biological factors and processes that can be measured and/or observed (e.g., photographic monitoring). They are used in combination to provide information necessary to determine the health and condition of the rangelands. Usually, no single indicator provides sufficient information to determine rangeland health. Only those indicators appropriate to a particular site are to be used. The indicators listed below each standard are not intended to be all inclusive.

The issue of scale must be kept in mind in evaluating the indicators listed after each standard. It is recognized that individual isolated sites within a landscape may not be meeting the standards; however, broader areas must be in proper functioning condition. Furthermore, fragmentation of habitat that reduces the effective size of large areas must also be evaluated for its consequences.

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.

Indicators may include, but are not limited to, the following:

- The amount and distribution of ground cover, including litter, for identified ecological site(s) or soil-plant associations are appropriate for site stability.
- Evidence of accelerated erosion in the form of rills and/or gullies, erosional pedestals, flow patterns, physical soil crusts/surface sealing, and compaction layers below the soil surface is minimal for soil type and landform.

Standard 2 (Riparian Areas and Wetlands)

- 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.
- Indicators may include, but are not limited to, the following:
- The riparian/wetland vegetation is controlling erosion, stabilizing streambanks, shading water areas to reduce water temperature, stabilizing shorelines, filtering sediment, aiding in floodplain development, dissipating energy, delaying flood water, and increasing recharge of groundwater appropriate to site potential.

- Riparian/wetland vegetation with deep strong binding roots is sufficient to stabilize streambanks and shorelines. Invader and shallow rooted species are a minor component of the floodplain.
- Age class and structural diversity of riparian/wetland vegetation is appropriate for the site.
- Noxious weeds are not increasing.

Standard 3 (Stream Channel/Floodplain)

- 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.
- Indicators may include, but are not limited to, the following:
- Stream channels and floodplains dissipate energy of high water flows and transport sediment. Soils support appropriate riparian-wetland species, allowing water movement, sediment filtration, and water storage. Stream channels are not entrenching.
- Stream width/depth ratio, gradient, sinuosity, and pool, riffle and run frequency are appropriate for the valley bottom type, geology, hydrology, and soils.
- Streams have access to their floodplains and sediment deposition is evident.
- There is little evidence of excessive soil compaction on the floodplain due to human activities.
- Streambanks are within an appropriate range of stability according to site potential.
- Noxious weeds are not increasing.

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.
- Indicators may include, but are not limited to, the following:
- Native plant communities (flora and microbial crusts) are maintained or improved to ensure the proper functioning of ecological processes and continued productivity and diversity of native plant species.
- The diversity of native species is maintained.
- Plant vigor (total plant production, seed and seedstalk production, cover, etc.) is adequate to enable reproduction and recruitment of plants when favorable climatic events occur.
- Noxious weeds are not increasing.
- Adequate litter and standing dead plant material are present for site protection and for decomposition to replenish soil nutrients relative to site potential.

Standard 5 (Seedlings)

- 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.
- Indicators may include, but are not limited to, the following:
- In established seedlings, the diversity of perennial species is not diminishing over time.
- Plant production, seed production, and cover are adequate to enable recruitment when favorable climatic events occur.
- Noxious weeds are not increasing.
- Adequate litter and standing dead plant material are present for site protection and for decomposition to replenish soil nutrients relative to site potential.

Standard 6 (Exotic Plant Communities, other than Seedlings)

- Exotic plant communities, other than seedings, will meet minimum requirements of soil stability and maintenance of existing native and seeded plants. These communities will be rehabilitated to perennial communities when feasible cost effective methods are developed.
- Indicators may include, but are not limited to, the following:
 - Noxious weeds are not increasing.
 - The number of perennial species is not diminishing over time.
 - Plant vigor (production, seed and seedstalk production, cover, etc.) of remnant native or seeded (introduced) plants is maintained to enable reproduction and recruitment when favorable climatic or other environmental events occur.
- Adequate litter and standing dead plant material is present for site protection and for decomposition to replenish soil nutrients relative to site potential.

Standard7 (Water Quality)

- Surface and ground water on public lands comply with the Idaho Water Quality Standards.
- Indicators may include, but are not limited to, the following:
 - Physical, chemical, and biologic parameters described in the Idaho Water Quality Standards.

Standard 8 (Threatened and Endangered Plants and Animals)

- Habitats are suitable to maintain viable populations of threatened and endangered, sensitive, and other special status species.
- Indicators may include, but are not limited to the following:
 - Parameters described in the Idaho Water Quality Standards.
 - Riparian/wetland vegetation with deep, strong, binding roots is sufficient to stabilize streambanks and shorelines. Invader and shallow rooted species are a minor component of the floodplain.
 - Age class and structural diversity of riparian/wetland vegetation are appropriate for the site.
 - Native plant communities (flora and microbial crusts) are maintained or improved to ensure the proper functioning of ecological processes and continued productivity and diversity of native plant species.
 - The diversity of native species is maintained.
 - The amount and distribution of ground cover, including litter, for identified ecological site(s) or soil-plant associations are appropriate for site stability.
 - Noxious weeds are not increasing.

Guidelines for Livestock Grazing Management

Introduction

Guidelines direct the selection of grazing management practices, and where appropriate, livestock management facilities to promote significant progress toward, or the attainment and maintenance of, the standards. Grazing management practices are livestock management techniques. They include the manipulation of season, duration (time), and intensity of use, as well as numbers, distribution, and kind of livestock. Livestock management facilities are structures such as fences, corrals, and water developments (ponds, springs, pipelines, troughs, etc.) used to facilitate the application of grazing management practices. Livestock grazing management practices and guidelines will be consistent with the Idaho Agricultural Pollution Abatement plan.

Grazing management practices and facilities are implemented locally, usually on an allotment or watershed basis. Grazing management programs are based on a combination of appropriate grazing management practices and facilities developed through consultation, coordination, and cooperation with the Bureau of Land Management, permittees, other agencies, Indian tribes, and interested publics.

These guidelines were prepared under the assumption that regulations and policies regarding grazing on the public lands will be implemented and will be adhered to by the grazing permittees and agency personnel. Anything not covered in these guidelines will be addressed by existing laws, regulations, Indian treaties, and policies.

The BLM will identify and document within the local watershed all impacts that affect the ability to meet the standards. If a standard is not being met due to livestock grazing, then allotment management will be adjusted unless it can be demonstrated that significant progress toward the standard is being achieved. This applies to all subsequent guidelines.

Guidelines

1. Use grazing management practices and/or facilities to maintain or promote significant progress toward adequate amounts of ground cover [determined on an ecological site basis) to support infiltration, maintain soil moisture storage, and stabilize soils.
2. Locate livestock management facilities away from riparian areas wherever they conflict with achieving or maintaining riparian-wetland functions.
3. Use grazing management practices and/or facilities to maintain or promote soil conditions that support water infiltration, plant vigor, and permeability rates and minimize soil compaction appropriate to site potential.
4. Implement grazing management practices that provide periodic rest or deferment during critical growth stages to allow sufficient regrowth to achieve and maintain healthy, properly functioning conditions, including good plant vigor and adequate vegetative cover appropriate to site potential.
5. Maintain or promote grazing management practices that provide sufficient residual vegetation to improve, restore, or maintain healthy riparian-wetland functions and structure for energy dissipation, sediment capture, ground water recharge, streambank stability, and wildlife habitat appropriate to site potential.
6. The development of springs, seeps, or other projects affecting water and associated resources shall be designed to protect the ecological functions, wildlife habitat, and significant cultural and historical/ archaeological/paleontological values associated with the water source.
7. Apply grazing management practices to maintain, promote, or progress toward appropriate stream channel and streambank morphology and functions. Adverse impacts due to livestock grazing will be addressed.
8. Apply grazing management practices that maintain or promote the interaction of the hydrologic cycle, nutrient cycle, and energy flow that will support the appropriate types and amounts of soil organisms, plants, and animals appropriate to soil type, climate, and landform.
9. Apply grazing management practices to maintain adequate plant vigor for seed production, seed dispersal, and seedling survival of desired species relative to soil type, climate, and landform.
10. Implement grazing management practices and/or facilities that provide for complying with the Idaho Water Quality Standards.
11. Use grazing management practices developed in recovery plans, conservation agreements, and Endangered Species Act, Section 7 consultations to maintain or improve habitat for federally listed threatened, endangered, and sensitive plants and animals.
12. Apply grazing management practices and/or facilities that maintain or promote the physical and biological conditions necessary to sustain native plant populations and wildlife habitats in native plant communities.
13. On areas seeded predominantly with non-native plants, use grazing management practices to maintain or promote the physical and biological conditions to achieve healthy rangelands.
14. Where native communities exist, the conversion to exotic communities after disturbance will be minimized. Native species are emphasized for rehabilitating disturbed rangelands. Evaluate whether native plants are adapted, available, and able to compete with weeds or seeded exotics.
15. Use non-native plant species for rehabilitation only in those situations where:

- a. native species are not readily available in sufficient quantities;
 - b. native plant species cannot maintain or achieve the standards; or
 - c. c. non-native plant species provide for management and protection of native rangelands.
- Include a diversity of appropriate grasses, forbs, and shrubs in rehabilitation efforts.³
16. On burned areas, allow natural regeneration when it is determined that populations of native perennial shrubs, grasses, and forbs are sufficient to revegetate the site. Rest burned or rehabilitated areas to allow recovery or establishment of perennial plant species.
 17. Carefully consider the effects of new management facilities (e.g., water developments, fences) on healthy and properly functioning rangelands prior to implementation.
 18. Use grazing management practices, where feasible, for wildfire control and to reduce the spread of targeted undesirable plants (e.g., cheatgrass, medusa head, wildrye, and noxious weeds) while enhancing vigor and abundance of desirable native or seeded species.
 19. Employ grazing management practices that promote natural forest regeneration and protect reforestation projects until the Idaho Forest Practices Act requirements for timber stand replacement are met.
 20. Design management fences to minimize adverse impacts, such as habitat fragmentation, to maintain habitat integrity and connectivity for native plants and animals.

³ An apparent editing mistake with numbering the 1997 Idaho guidelines was carried forward in this appendix to avoid misidentifying specific guidelines.

Appendix B-1: Methods

Monitoring

Trend Data

Trend monitoring sites have been established within the Chipmunk Group Allotments and the data is available at the Owyhee Field Office.

A note on statistical methods:

In the past, apparently Chi Square analysis was used to compare means between years. This statistical approach is not appropriate because Chi Square assumes independent random sampling within a population each year. That is not the case with repeated measurements of fixed transect lines.

A paired Student's T test addresses this requirement. An analysis of variance (ANOVA) or a regression analysis could be useful for determining trends across multiple years. However, these methods are generally appropriate for sample sizes of ten or more; our four (or 5) years of data are not enough to show a meaningful trend using this method. The Student's T test assumes that the two populations sampled have similar variances, and samples for each mean are normally distributed. For this analysis, these parameters were assumed, but not tested.

Frequency:

At each site and for each species, the total number of hits for the 20 quadrats per belt was used as the sampling unit, providing an $n = 5$ for each site/species/year combination. The largest plot size (plot 4, 50 cm x 50 cm) of the nested frequency set was used for each species. The five samples per site were averaged and the standard deviation calculated. Then a paired, two-tailed Student's T test was run to determine whether the difference between the means of two adjacent sampling years (i.e. 1989 to 2003 and 2003 to 2009) was significantly different at $p < 0.1$.

Nested Plot Frequency Transect (NPFT) data provide insight into changes in the plant community, such as plant occurrence, vigor, and/or health. NPFT data are collected at permanently located study sites and includes; species frequency, cover data, as well as shrub density where applicable. The methodology used to establish and collect data at these sites is described in detail in *BLM technical references 1400-4 and 1730-1*.

Frequency data shows changes in the occurrence of plants. Additional phenological information and photographs provides information on the reproductive capabilities of plants. Cover data describes the percent of ground covered by plant material, biological soil crusts, gravel, rock, and plant litter. Data is available at the Owyhee Field Office.

Ground Cover:

Ground cover was compared between 2000, 2005, and 2010 for most sites at the revisited trend locations. Ground cover is recorded as a point intercept for 80 points at each of the five belts, resulting in 400 hits per site. Paired, two-tailed Student's T tests were calculated on the mean percentages of each belt.

Shrub and Tree Density:

Shrub and tree densities were counted in two 0.01-acre plots at each monitoring site. No statistical tests were run on these data since only two samples per site were taken.

Shrub density is collected when shrubs are present, in either 1/100th or 1/200th acre plots, depending on shrub distribution, and calculated and expressed as plants per acre.

Photographs are taken at NPFT sites as well as photo plot sites. A minimum of three photographs are taken, two general landscape views and one close-up of the photo plot. Additionally, the photo plot is sketched to help illustrate species composition, size, and vigor, and is used to help corroborate the photograph.

Rangeland Health Field Assessments:

Rangeland Health Field Assessments (RHFA) were conducted in accordance with the procedure described in BLM-Technical Reference 1734-6, “Interpreting Indicators of Rangeland Health - Version 3” (USDI-BLM 2000). This procedure is a comparison of 17 indicators of rangeland health observed for a field assessment site to an Ecological Site Description or a reference site that displays a natural range of the expected physical and vegetative characteristics. The indicators are summarized as attribute ratings for soil stability, hydrologic function, and biotic function.

The interpretation process is the critical link between observations of indicators and determining the degree of departure from what is expected for the site at potential. RHFA monitoring sheets, photos, functional group descriptions, cover class percentages, and site documentation for species abundance and dominant life forms were utilized in an interdisciplinary team setting to aid in the interpretation and summary of attribute ratings. Changes from previous decisions made were applied where necessary, based on the array of updated and available information.

At the time field assessments were performed and during the summary of attribute ratings, ecological site descriptions specific to each monitoring site location were used to provide for interpretation of departure from reference conditions. A “preponderance of evidence” approach was used to select the appropriate departure category for each attribute. The decision was based on where the majority of indicators for each attribute fell and a rating based on professional judgment that considered whether an indicator was particularly important for the site. Such an approach therefore excluded the use of a numerical indicator tally and heavily relied on a summary of all available information which was often very limited, incomplete, or non-existent.

The compilation of recorded departures of these indicators and the associated biotic attribute rating for the Group 2 allotment is displayed in Appendix D: Rangeland Health Indicators & Attribute Ratings.

This section describes methods used to collect data for this assessment. Resources of interest, as identified by the Idaho Rangeland Health Standards and Guidelines, are assessed to determine whether they are meeting, or making significant progress toward meeting the Standards. The information collected includes data that enables an Interdisciplinary Team (ID Team) to analyze the condition of upland and riparian areas, as well as habitat for wildlife species and areas of concern for special status plants.

Uplands

Rangeland Health Assessments -Rangeland Health Evaluation Summary Worksheets (RHE), outlined in *BLM technical reference 1734-6 Interpreting Indicators of Rangeland Health*, and other available qualitative and quantitative data are used to determine if rangelands are meeting or making significant progress toward meeting the Standards for Rangeland Health.

The rangeland health evaluation summary worksheet consists of 17 indicators, each of which is rated on the degree of departure from the appropriate ecological site description or ecological reference area. Areas without a nearby reference site are evaluated using the appropriate ecological site description, familiarity of the area, and incorporating the best professional judgment of the evaluators. The 17

indicators, from the summary worksheet, are compiled into three interlocking attribute categories representing soil/site stability, hydrologic function, and biotic integrity. The preponderance of evidence of each attribute determines the condition of the site.

Utilization - Utilization data is important in evaluating the effects of grazing and browse on specific areas of rangeland. Utilization refers to the percentage of forage that has been removed by animals during the grazing period. It is expressed as a percentage, and can characterize the amount of use on vegetation in an area or the use of individual plant species. Generally, utilization data are collected on transects located at pre-selected key use areas, such as permanently located study sites, although utilization may be collected at appropriate sites throughout a pasture or allotment.

Numerous methods are available for measuring utilization, some of which include: the Landscape Appearance Method, Key Species Method, Grazed Class Method, Cole Browse Method or Extensive Browse Method (*Interagency Technical Reference 1996 BLM/RS/ST-96/004+1730*). In general, the utilization data used in this assessment were collected using the Key Species Method and the Cole Browse Method.

Key Species method for measuring utilization is the main monitoring method used on the Owyhee Field Office. The following table describes the range of use that occurs in each use class. (USDI BLM, 1999) (Table Veg-Z)

Table B-1: Key Forage Plant Utilization Monitoring Method

Class	Percent Utilization	Description of Utilization
No Use	0-5	The rangeland shows no evidence of grazing use or negligible use.
Slight	6-20	The rangeland has the appearance of very light grazing. The herbaceous forage plants may be topped or slightly used. Current seedstalks and young plants are little disturbed.
Light	21-40	The rangeland may be topped, skimmed, or grazed in patches. The low value herbaceous plants are ungrazed and 60 to 80 percent of the number of current seedstalks of herbaceous plants remain intact. Most young plants are undamaged.
Moderate	41-60	The rangeland appears entirely covered as uniformly as natural features and facilities will allow. Fifteen to 25 percent of the number of current seedstalks of herbaceous species remain intact. No more than 10 percent of the number of low-value herbaceous forage plants are utilized. (Moderate use does not imply proper use.)
Heavy	61-80	The rangeland has the appearance of complete search. Herbaceous species are almost completely utilized, with less than 10 percent of the current seedstalks remaining. Shoots of rhizomatous grasses are missing. More than 10 percent of the number of low-value herbaceous forage plants have been utilized.
Heavy+	81-94	The rangeland has a mown appearance and there are indications of repeated coverage. There is no evidence of reproduction or current seedstalks of herbaceous species. Herbaceous forage species are completely utilized. The remaining stubble of preferred grasses is grazed to the soil surface.
Severe	95-100	The rangeland appears to have been completely utilized. More

Class	Percent Utilization	Description of Utilization
		than 50 percent of the low-value herbaceous plants have been utilized.

Riparian/Wetland - A Standard Checklist, outlined in the 1998 BLM *Technical Reference 1737-15, A User Guide to Assessing Proper Functioning Condition and the Supporting Science for Lotic Areas* (flowing water), and other available qualitative and quantitative data are used to determine if riparian areas are meeting Rangeland Health Standards.

The standard checklist consists of 17 indicators that are used to assess the functioning condition of riparian areas. The indicators are compiled into three interlocking attribute categories representing erosion/deposition, hydrologic function, and vegetative status. Status of noxious weeds is also considered when evaluating riparian health.

Spring wetland areas were assessed for proper functioning condition as outlined in *Technical Reference 1737-11, "Process for assessing proper functioning condition for lentic riparian-wetland areas"* (USDI-BLM 1994). Lentic areas are defined as wetland-riparian areas adjacent to standing water habitats such as lakes, ponds, seeps, and meadows.

Special Status Species

Wildlife

Special status animal populations are continually tracked by BLM field office staff and the Idaho Natural Heritage Program (IDNHP) through the Idaho Fish and Wildlife Information System (IFWIS). BLM databases and hard copy files and IFWIS were referred to for occurrences of special status animal species.

Upland special status species habitats were assessed by using the same data that was used to assess native, seeded, and exotic plant communities under Standard 4. Indicators of upland habitat structure and functionality include abundance, diversity, vigor, production, cover, utilization, trend, and the occurrence of noxious and invasive plants.

Riparian special status species habitats were assessed using information presented in Standard 2. While there is no direct correlation between stream functioning condition and special status species habitat, many of the indicators of riparian functionality are also crucial components of habitat for many of the special status and other wildlife species dependent on this habitat type, especially redband trout and Neotropical migratory birds and amphibians. The indicators that assess structure, composition and vigor of hydric (riparian) vegetation are especially important because they also assess the quality and quantity of shade, nesting/breeding habitat, forage, and escape cover.

A Framework to Identify Greater Sage-grouse Priority Areas and General Areas in Management Zone IV and Bear Lake Plateau of Southwestern Idaho was used to identify the relationship of sage-grouse populations and the Garat allotment at the regional scale. Priority Areas represent high priority sage-grouse areas characterized by a combined high male lek attendance, high lek density and high lek connectivity. General Areas represent areas of occupied sage-grouse habitats not contained within Priority Areas. General Areas may serve as important connectivity corridors between Priority Areas, potential stepping stones (habitat islands) for grouse movements within corridors, or occupied habitats characterized by low lek density.

Key habitat is a landscape-scale mapping effort that approximates the distribution of sage-grouse habitat in Idaho. It is a vegetation based map largely delineated by the distribution of sagebrush for conservation and restoration planning purposes. The mapping identifies: 1) key sage grouse habitat areas and 2) three habitat restoration types: (a) R1- perennial native and non-native grasslands with high restoration potential; (b) R2 – annual grass dominated areas (either shrubland or grassland) with low restoration potential and (c) R3 – conifer encroachment areas with high restoration potential (Inside Idaho 2012). Sage-grouse breeding habitat assessments conducted from 2000 through 2009 were all updated to 2010 forms to reduce error and create consistency in the information. The field data collected prior to 2010 was recalculated and applied to the current forms.

Botany -Special status plant populations are tracked by both the BLM and the Idaho Natural Heritage Program (INHP). BLM databases, and files and INHP databases are consulted for known occurrences of special status plants. Additional inventories are conducted on an ongoing basis for range projects. Monitoring of known populations occurs as time and staff allow.

Appendix B-2: Utilization

Table B-2.1: Alkali-Wildcat utilization

Year	AGSP	AGCR	POSE	SIHY	STOC
1975	24		36		
			36	30	
	43		20		
	26	10	14		
	33		25		
	14		19	10	
			50	38	
1976	12			10	10
	31			38	
	32			38	
	14			19	
	16			18	
	11			34	12
1979	18				
1981	61			54	
	23				
1982	21				
	15			12	
1983	19				
	11				
1984				10	
	13				
1986	44				
1988	52				
	20			10	
1989	28				
	63				
1990				57	
				0	
1993	57				
	37				
	65				
	0				
1996	62				49
	53				
	58				
	76				
1998	10				
	50				

Year	AGSP	AGCR	POSE	SIHY	STOC
2007 landscape appearance	38				
	28				
	28				
2008			3	3	
2010	42				
	26				
2011			22	9	
			22		
			9	16	
1975-1996 Average	32.88	10	28.57	25.2	23.67
1998-2011 Average	31.71	0	14	9.33	0

Table B-2.2: Baxter Basin utilization

Year	Pasture 1 Native section 01				Pasture 2 Seeding sections 02/03					Pasture 3 Ephemeral sections 35/34				
	AG SP	AG CR	PO SE	SI HY	AG SP	AG CR	PO BU	PO SE	SI HY	AG SP	AG CR	PO BU	PO SE	SI HY
1976						77								
1979					30			10	28					
1980												18	16	32
						23								
						21	17							
1981											16			
					10	10								
1982	7					10								
1983														19
1986						60								
						47								
1987						5					18			
1988						37								
					21	56								
1989						42								
						42								
						49								
1992		62				53								17
1993		50									50			
											50			70
1994						50								3
						3								
1995						26				35				
1996										13				
										13				
1997						10					50			
1999														33
2000											50			
2006	35			17						25				25
2011			17			19		12						
		15	8					20						
		11	7											
			14											
Average 1976-1996	7.0	56.0	0.0	0.0	20.33	35.94	17.00	10.00	28.00	20.33	33.50	18.00	16.00	28.20
Average 1997-2011	35.00	13.00	11.50	17.00	0.00	14.50	0.00	16.00	0.00	25.00	50.00	0.00	0.00	29.00

Table B-2.3: Blackstock Springs utilization

Year	Pasture 1						Pasture 2					Pasture 3			
	AG SP	AG CR	PO SE	SI H Y	R Y E	FE ID	AG SP	AG CR	PO SE	SI H Y	FE ID	AG SP	SI H Y	FE ID	R Y E
1975	51		34	35								50	34		56
	43	46		30	40							49	38		54
	50		36	42											
1979	28	28				28	76				77				
	53	55					32				50				
	31	31					37								
	39	33													
1981	35			30		34									
	36			26		37									
1982							36				44	36			
							66				66				
1983							48	47							
							35								
1986							35								
1987	40	40					42				62				
1988							33								
1990							25					39			
1991							more than past					more than past			
1992		56										48		65	
		53													
		48													
1993		42										37		70	
		36										36			
		40										51			
		42													
		39													
1994	50	59					65								
	30	30					21								
		13													
1995												46			
												29			
1996		45					22				23				
		46					63			63					
1997							16					49		49	
1998							13								

Year	Pasture 1						Pasture 2					Pasture 3			
	AG SP	AG CR	PO SE	SI H Y	R Y E	FE ID	AG SP	AG CR	PO SE	SI H Y	FE ID	AG SP	SI H Y	FE ID	R Y E
2004							14								
							20				17				
							18				17				
							24								
2005		43													
		53													
		51													
		41													
		36													
		41													
		36													
		43													
		60													
2007	37	35													
	60	60													
	39	45													
2011									24						
							26		19						
							24		20						
Average 1975-1996	40.50	41.16	35.00	32.60	40.00	33.00	42.40	47.00	0.00	57.67	49.60	42.78	36.00	67.50	55.00
Average 1997-2011	45.33	45.33	0.00	0.00	0.00	0.00	19.38	0.00	21.00	0.00	17.00	49.00	0.00	49.00	0.00

Table B-2.4: Burgess utilization

Year	Pasture 1				Pasture 3			
	AGSP	FEID	POSE	SIHY	AGSP	FEID	PUTR	ELCE
1976	90			87				
1980	48	46		40	47			50
1981	37	36		30	39			
	30	30		20	12			
1982	48	30		40				
	49			45				
1983	36	23			48			
					22			
1985	30							
1986					50	42		
1987		40			36			
1988	50							
	44	50						
1989	53							
	64							
1992		41			64			
1993	45				43			
					42			
1994	31	26			43			
1995		23			32			
		51			47			
1996	46							
1997		22			41			
2011			19		0		27	
			18		12			
Average 1976-1996	46.73	36.00	0.00	43.67	40.38	42.00	0.00	50.00
Average 1997-2011	0.00	22.00	18.50	0.00	17.67	0.00	27.00	0

Table B-2.5: Burgess FFR utilization

Year	PUTR	AGSP
1985	35	33
	52	
2011	27	12
Average 1985	43.5	33
Average 2011	27	12

Table B-2.6: Chipmunk Field FFR utilization

Year	AGSP	FEID	POSE
2006	13	30	13
2011	11		

Table B-2.7: Chimney Pot FFR utilization

Year	AGSP	POBU
2009	8	
2011		33

Table B-2.8: Corral Creek FFR utilization

Year	POSE	TACA8	PUTR2	AGCR
2011	14	11	5	51
	37			
Average 2011	25.5	11	5	51

Table B-2.9: Cow Creek utilization

Year	Pasture 1							Pasture 2						
	AG SP	AG SI	AG CR	EL CA	PO SE	SI HY	ST OC	AG SP	BR TE	FE ID	OR HY	PO SE	SI HY	ST OC
1976	37					41		40		60			42	
1979	30					36								
	47					32								
	40					48								
1980	22					17								
1981	13					10		25		14			22	
	31			22		15	36							
	36					23								
1982								10		12			12	
1983														
1984														
1986	34							43						
1987		37												
	25					10								
	10													
1988			28											
			33											
1989			44										45	
													44	
1990			45											
1993			52					30					13	
			59					30						
								30			30			
								30					30	
1994			48					13						
								22		28				
								25						62
								35		56				
								13						
1995								27						
								34						
								36						
								20						
1997			63					36						
								18						

Year	Pasture 1							Pasture 2						
	AG SP	AG SI	AG CR	EL CA	PO SE	SI HY	ST OC	AG SP	BR TE	FE ID	OR HY	PO SE	SI HY	ST OC
1998			50											
1999			50											
2001	10		10		10	10								
2008								10						
								12						
								4						
								3						
2009			10					33						
								33						
								31						
2011	13				15				9				23	
			14		15				20				20	
												24	12	
									14				9	
Avg. 1976-1996	29.55	37.00	44.14	22.00	0.00	25.78	36.00	27.24	0.00	34.00	30.00	0.00	29.71	62.00
Avg. 1997-2011	11.50	0.00	32.83	0.00	13.33	10.00	0.00	20.00	14.33	0.00	0.00	24.00	16.00	0.00

Year	Pasture 3				Pasture 4						Pasture 5			
	AG SP	FE ID	PO SE	SI HY	AG SP	FE ID	PO BO	PO SE	SI HY	ST LE	AG SP	FE ID	PO SE	SI HY
1976	39	40		45	60				56	61	59	45		50
	59	45		50										
1979														
1980														
1981					21	13			13					
					27	19			18					
1982														
1983											10	10		10
1984											28			
1986														
1987											18			

Year	Pasture 3				Pasture 4						Pasture 5			
	AG SP	FE ID	PO SE	SI HY	AG SP	FE ID	PO BO	PO SE	SI HY	ST LE	AG SP	FE ID	PO SE	SI HY
1988														
1989			10	10	44						33			
											39			
1990														
1993														
1994						47					40	40		
						36						67		
											45			
1995	3					51					47	56		
						48					44	47		
						45								
1997														
1998														
1999														
2001					38	57								
2008	19		23		8		8							
					24		18							
2009	37				42						44		38	
	32				29						41			
	29				21									
2011	7		7		19		14				26		24	
	9		10		26		17				32		20	
	19		16		19		11							
Avg. 1976-1996	33.67	42.50	10.00	35.00	38.00	37.00	0.00	0.00	29.00	61.00	36.30	44.17	0.00	30.00
Avg.	21.7	0.0	14.0	0.0	25.1	57.0	13.0	14.0	0.0	0.0	35.7	0.0	27.3	0.0

	Pasture 3				Pasture 4						Pasture 5			
Year	AG SP	FE ID	PO SE	SI HY	AG SP	FE ID	PO BO	PO SE	SI HY	ST LE	AG SP	FE ID	PO SE	SI HY
1997-2011	1	0	0	0	1	00	0	0	0	0	5	0	3	0

Table B-2.10: Elephant Butte utilization

	Pasture 1						Pasture 2						Pasture 3					
Year	A G S P	B R T E	O R H Y	P O S E	S H Y	S P R	A G S P	A G C R	B R T E	O R H Y	P O S E	S H Y	S P R	A G S P	O R H Y	P O S E	S H Y	S T O C
1975				50	50		33				11	30		10	14	16	12	
				47	43						34	20		30	10	57	15	
				52	36					30	37	24						
				51	40					10	28	28						
				53	44													
				65	66													
				48	59													
1976				65			90					71	70		90			
				90						60		68						
				90														
				90														
	90			71	70													
			60	68														
1980	13																	
				40														
1981				54														
				18														
				15														
1982				48														
				13														
			10	10														
1983				10														
1986				38						48								
												59						
1989							26					62						
1991							33											
1992															50			50
													3		70			
1993			64		52													
1995					48												36	62
					64													

Year	Pasture 1						Pasture 2						Pasture 3					
	A G S P	B R T E	O R H Y	P O S E	S I H Y	S P C R	A G S P	A G C R	B R T E	O R H Y	P O S E	S I H Y	S P C R	A G S P	O R H Y	P O S E	S I H Y	S T O C
					70													
1996										56	50	41						
1997												10						10
1999																		
2000																		
2006																		
2007																	35	36
2009					13					20	20	20					11	11
					13		25					21						
				13	26		24											
				33	33		31											
	38						31											
2011		13						28	7							0		
		9							13									
		13		19														
Average	51			52	49	70	45				32	44	70	14		47	21	56
1975-1996	.50	0.00	44.67	.29	.69	.00	.50	0.00	0.00	40.80	.00	.78	.00	.33	41.00	.67	.00	.00
Average	44			29	26	70	31				26	23	70	14		23	22	28
1997-2011	.75	8.75	44.67	.32	.94	.00	.33	14.00	6.67	30.40	.00	.94	.00	.33	41.00	.83	.33	.25

	Pasture 4	Pasture 5			
Year	SIHY	AGSP	ORHY	POSE	SIHY
1975					
1976					
1980					
1981					
1982					
1983					
1986					
1989					
1991					
1992					70
1993					
1995					52
1996	5				
1997	10				
1999	61				30
	66				

2000			63		55
2006		25		21	
2007		46			
		41			
2009	13	7		7	7
2011		0			
Average 1975-1996	5.00	0.00	0.00	0.00	61.00
Average 1997-2011	31.00	19.83	31.50	9.33	38.25

Table B-2.11: Ferris utilization

Year	Pasture 1				Pasture 2		Pasture 3
	AGSP	ELCI	STIPA	POA	AGSP	FEID	AGSP
1979	10		10				
1987	30						
2009		3			3	3	3
2011	19			10			26
	21			10			
					14		
Average 1979-2011	20	3	10	10	8.5	3	14.5

Table B-2.12: Franconi utilization

Year	Pasture 3	
	AGSP	POSE
2011	24	10

Table B-2.13: Jackson Creek utilization

Year	Pasture 1				Pasture 2				Pasture 3				
	SIH Y	AG SP	FEI D	POS E	AG SP	FEI D	SIH Y	POS E	AG SP	POS E	FEI D	SIH Y	BR TE
1979													
1981	24	27											
1983	11	11										15	
												25	
1984													
1986		49											
1987		10			12								
1988		63			54				44				
1989		53			49	45						10	
		36											
1992			36		70				70				
1993		41			45				37				
1994		19			30								
1995									50				
1997		20											
1999	3	31	39										
		12											
2005					0		0	0	14			24	
2007		48			36		31		7		25		
		46											
2008				18									
2010	62	47			18							10	
	18	18											
	25												
	36												
2011	3	3						23	10				7
	3			3					15				14
	3			3					30	29			
	3			3									
	3			3									
	8	13											
Average 1975- 1995	17.5 0	34.3 3	36.0 0	0.00	43.3 3	45.0 0	0.00	0.00	50.2 5	0.00	0.00	16.6 7	0.00

	Pasture 1				Pasture 2				Pasture 3				
Year	SIH Y	AG SP	FEI D	POS E	AG SP	FEI D	SIH Y	POS E	AG SP	POS E	FEI D	SIH Y	BR TE
Average 1997- 2011	15.1 8	26.4 4	39.0 0	6.00	18.0 0	0.00	15.5 0	11.5 0	15.2 0	29.0 0	25.0 0	17.0 0	10.5 0

	Pasture 4							Pasture 5		
Year	AGSP	POB U	POSE	FEID	STIP A	AGC R	BRC A	AGSP	SIHY	FEID
1979	42							21	10	23
1981										
1983										
1984	26									
	36									
1986	35									
1987										
1988										
1989										
1992	36									
1993	48			69				48		
1994										
1995								0		
1997										
1999										
2005										
2007										
2008			4	9						
2010										
2011	28	17		18						
		19		19	8					
						3	9			

Year	Pasture 4							Pasture 5		
	AGSP	POB U	POSE	FEID	STIP A	AGC R	BRC A	AGSP	SIHY	FEID
Average 1975-1995	37.17	0.00	0.00	69.00	0.00	0.00	0.00	23.00	10.00	23.00
Average 1997-2011	28.00	18.00	4.00	15.33	8.00	3.00	9.00	0.00	0.00	0.00

Table B-2.14: Joint utilization

Year	Pasture 2						Pasture 3					Pasture 4				Pasture 5	
	AG SP	FE ID	PO SE	SI HY	Sti pa	PU TR	A GS P	A GI N	PO SE	SI HY	A GS P	SI HY	A GI N	PO SE	A GS P	SI HY	
1976											64	56					
1980	23	10									32						
	17	16		14													
1981								39	10								
1982	54	56															
1983	42					45											
1984								90							15		
1985	65										50						
1986	No Dat a																
1987								62				38					
1988	70							56			16	17			15		
								50									
1989	35	44					60	70			60	70			68	59	
	35										60						
	36																
1990	39	46															
	46																
1991		34	3			30		48			52				38	28	
1992	66	57		62							58	56					
	52	48									63						
	45	50															
	58			45													
1993	72							70			63						
1994		85			65			70	70	70	65	60	70				
		69															

	Pasture 2						Pasture 3				Pasture 4				Pasture 5	
Year	AG SP	FE ID	PO SE	SI HY	Sti pa	PU TR	A GS P	A GI N	PO SE	SI HY	A GS P	SI HY	A GI N	PO SE	A GS P	SI HY
1995	51										70	70				
1999	8															
	12	13														
2006	3			3				36					68	45		
								60								
2008											3					
2011	21		10				10	10	10							
			17													
Average 1976-1995	47.41	46.82	3.00	40.33	65.00	37.50	60.00	61.67	70.00	40.00	54.42	52.43	70.00	0.00	34.00	43.50
Average 1999-2011	18.28	29.91	10.00	21.67	65.00	37.50	35.00	41.92	40.00	40.00	28.71	52.43	69.00	22.50	34.00	43.50

Table B-2.15: Lowry FFR utilization

	Pasture 1			
Year	POSE	AGCR	BRTE	POBU
2011	3	3	3	33

Table B-2.16: Madriaga utilization

	Pasture 1						Pasture 2			
Year	AGS P	POS E	FEI D	PUT R	SIH Y	AGS P	SIH Y	POS E	FEI D	PUT R
1976	90		81		57					
1979	61		60	78	48	70	24			14
	24		41	19	18					
1980	29		30		16		36			
1981	30		16		10	30	21		30	
1982	28		32							
	40									
1985	35									
1986	36		27				42			
1987	45		34			54				
			42							
1988	31		42		45					
1989										
1990	28		37							
1991										
1992	65		67						67	
1993	30		30							
1994	24		24							
	34									
	26		31							
1995	40	60				40				
1996										
1997						25			30	
1998	20	50								
2006							31		14	
									44	
									18	
2009					22		30			
2011	3						12	19		
	32	15					18	10		
Average 1976-1996	38.67	60.00	39.60	48.50	32.33	48.50	30.75	0.00	48.50	14.00
Average 1997-2011	18.33	32.50	0.00	0.00	22.00	25.00	22.75	14.50	26.50	0.00

Table B-2.17: Poison Creek utilization

Year	AGSP	AGCR	POSE	SIHY
1975	34		31	30
	18		10	14
1976	71			90
	85			90
1981	10		10	10
	10			14
	18			11
	15			
1983	11			12
1984	11			13
				24
1986	57			
1987	39			
1992	3			
	3			
	3			
	3			
	4			
	3			
	3			
	3			
	3			
	11			
	3			
	3			
	3			
	3			
	5			
	13			
	27			
	50			
	22			
	3			
	60			
	60			
	44			
	70			
	70			
	58			
	64			
	64			

Year	AGSP	AGCR	POSE	SIHY
	26			
	5			
	30			
	3			
	3			
	3			
	3			
	3			
	3			
	3			
1993	40			
	52			
1994	4			12
	21			
	33			57
	10			
	9			
	14			
	13			
	13			
1995	10			
1996	41			
	44			
	21			
1997	0		0	0
1998	10			
2006	32			
	35			
	56			
2007		23		
		25		
		28		
2008	8	10		
	15			
	20			
	11			
	12		5	
2010	34		32	
		32		
2011	3		9	3
	11	21		
	3			3

Year	AGSP	AGCR	POSE	SIHY
Average 1975-1996	23.24	0	17	31.42
Average 1997-2011	17.86	23.17	11.5	2

Table B-2.18: Rats Nest utilization

Year	AGSP	BRTE	ELEC	ORHY	POSE	SIHY	STCO	STOC	STTH
1975	54				58	50			
	44			38	39	33			
	16				21	15			
	31				27	30			
1976	86								
			90			67		57	
						68		80	
1979		33			50	30			
		13			28	27			
	26								
	47								
	17								
	55								
	68								
1980	46					44			
	49					41			32
	43					42			
1981	27					22			
	40					19	28		
1982	25					20			17
	10					10			10
1983	10								
	26								30
1984	27								28
	28								
1985	53								
1986	52								
1989	59								
1990	50					50			50
1992	56					21			
	81					67			
	60								73
	35								70
	54								70
1994	45								
	38								48

Year	AGSP	BRTE	ELEC	ORHY	POSE	SIHY	STCO	STOC	STTH
	47								
	34								
	45								
	70								70
	51					54			56
1995	16					22			24
	53								
	49								
	50								54
	28								
1996-REST	3					3			
Wild Horse Use Only	20								
	17								
	38								
	33								
	11								
1997	70								
Too many horses									
1998	10								
1999-REST									
2007	39								
	37								
2008	11					3			
2011	7				6	6			
	13				3	8			
	17				5	18			
						3			4
Average 1975-1996	40.06	23.00	90.00	38.00	37.17	35.00	28.00	68.50	45.14
Average 1997-2011	27.12	23.00	90.00	38.00	12.79	12.17	28.00	68.50	24.57

Table B-2.19: R Collins utilization

Year	AGSP
2011	10
	4
	11
Average 2011	8.33

Table B-2.20: Sands Basin utilization

Year	Pasture 1					Pasture 2						
	AGS P	POS E	AGC R	SIH Y	FEI D	AGS P	POS E	AGC R	SIH Y	FEI D	STT H	ELCI
1975						10	10				12	
1976	28		46	20		21		46	34			
						53		67	43			
1979	10		10		10	18		30		10	25	25
						12						
						10						
1980	10				10				52			
1981						25		18	15			
						27						
1982	24											
	26		25	22	13							
1983	39		37									
	41											
1984	38					42						
1987								35				
								65				
1988												
use patter n	38					20						
	36	40										
1996						40		65			50	
1997								80				
2000			35									
			40									
2004						17					13	
2006						29		22				
						42						
2007	23				34					38		
										45		
2008						36	43	3		40		
						28		33				
						6		63				
						9		59		30		
						3						
						9						
2011	3	3	6			27		22				
	8		10					25				
Avera ge 1975-	29.00	40.0 0	29.50	21.0 0	11.0 0	25.27	10.0 0	46.57	36.0 0	10.0 0	29.00	25.00

Year	Pasture 1					Pasture 2						
	AGS P	POS E	AGC R	SIH Y	FEI D	AGS P	POS E	AGC R	SIH Y	FEI D	STT H	ELCI
1996												
Average 1997-2011	11.33	3.00	22.75	0.00	34.00	20.60	43.00	38.38	0.00	38.25	13.00	0

Year	Pasture 3							Pasture 4				
	AGS P	POS E	AGC R	SIH Y	FEI D	ELC I	AGS P	POS E	AGC R	SIH Y	FEI D	
1975	10	10		10			50	11		17		
	41	31						24		50		
1976	86			36	90	89						
	94											
1980	31			35								
1981	41											
1982	14			16	15			15				
1984	42							46				
1988												
use pattern	64							50				
								22				
1996			65									
1997			80						50	40		
									50			
2000												
									50			
2004	9			5				39			59	
	7			4								
2006	21						23					
	19						39		55			
2007				48	42			40				
								36				
2008	22				3		19	26	17			
	5						0	0	3	0		
	3						3	10	3			
	3						3	3	14	3		
	12						8		14	8		
	16						8					
2011	23	25	20				20	25				
	0	14	21				6	20				
		17										
Average 1975-	47.00	20.50	65.00	24.2	52.5	89.0	50.00	28.00	0.00	33.5	0.00	

	Pasture 3						Pasture 4				
Year	AGS P	POS E	AGC R	SIH Y	FEI D	ELC I	AGS P	POS E	AGC R	SIH Y	FEI D
1996				5	0	0				0	
Average 1997- 2011	11.67	18.67	40.33	19.0 0	22.5 0	0.00	12.90	22.11	28.44	12.7 5	59.0 0

Table B-2.21: Soda Creek utilization

Year	Pasture 1		Pasture 1a			Pasture 2	Pasture 3			
	AGS P	POS E	AGS P	SIH Y	FEI D	AGSP	AGSP	POB U	STIP A	FEI D
1995	70		67		64					
1999						21	16			
2006			21	12						
2009	3		28				10			
	14						42			
2011	12	5	17				24	15	14	
	18						14	19	12	
							19	16		12
Average 1995- 2011	23.4	5	33.25	12	64		20.83	16.67	13	12

Table B-2.22: Stanford FFR utilization

Year	AGSP
2011	13

Table B-2.23: Texas Basin FFR utilization

Year	Pasture 1	Pasture 2
2011	Poa	Poa
	19	21
	9	
Average 2011	14	21

Table B-2.24: Trout Creek utilization

Year	Pasture 1							Pasture 2				Pasture 3			
	AG SP	BR TE	FEI D	PO SE	PU TR	SI HY	STI PA	AG SP	EL CI	FE ID	SI HY	AG SP	FE ID	PU TR	SIH Y
1976						78									
1979	45					35		45			35	40		36	40
						42									
	40				36	40									
1980						31					49			12	31
1981					10			39			30			10	44
								33			26				
1982	12					11								28	10
	16					15									
	33					26									
1983					18			41			51	41		18	40
														12	
1984											44				
1985														30	
1986	40							40				18			
								21							
1987								56			66				
1989								41							
								51							
								38							
1992	64														
1993	13		13			13		13			13	39			
								39			37	44			
1994	35		45					35		45		60	34		69
	59					13		59			13				
1995			69				72								
2000												38			46
															62
2006									22			3			3
												3			
2009	18			13											
	28			19											
2011	14	13						0		0	0				
	19			7											
Average 1976 - 1995	35. 7	0	42.3 3	0	21.3 3	30. 4	72	39.3 6	0	45	36. 4	40.3 3	34	20.8 6	40.5 7

	Pasture 1							Pasture 2				Pasture 3			
Year	AG SP	BR TE	FEI D	PO SE	PU TR	SI HY	STI PA	AG SP	EL CI	FE ID	SI HY	AG SP	FE ID	PU TR	SIH Y
Average 2000 - 2011	19. 75	13	0	13	0	0	0	0	22	0	0	14.6 7	0	0	37

Table 2-2.25: Trout Creek/Lequerica

Year	Pasture 1						
	AGSP	POSA	SIHY	STLE	FEID	PUTR	PONE
1976	40		40	56	78	65	
1979	50		55				
1980	39				55		
	32						
2008	5	8					47
2011	12	17					
	10						
Average 1976-1996	40.25	0	47.5	56	66.5	65	0
Average 1997-2011	9	12.5	0	0	0	0	47

Appendix C: Actual Use

Alkali-Wildcat

Year	Chipmunk		Blackstock		Total
	Use Period	AUMs	Use Period	AUMs	
2011	4/3-6/8	178	4/3-6/8	154	332
2010	4/4-6/8	161	4/4-6/8	167	328
2009	4/4-5/22	116	4/4-5/22	105	221
2008	4/2-5/22	126	4/2-5/22	129	255
2007	4/1-5/17	116	4/2-5/17	116	232
2006	4/7-5/27	456	4/1-5/27	146	602
2005	4/1-5/26	153	4/1-5/26	120	273
2003	4/1-5/25	126	4/1-5/25	146	272
2001	4/10-5/31	132	4/10-5/31	60	192
2000	4/1-5/18	196	4/1-5/18	164	360
1999	4/1-5/25	352	4/1-5/25	141	493
1998	4/1-5/31	72	4/5-5/31	107	179
1998-2011 Average		182		130	312

1998-2011 Range Actual Use 179-602

1997, 2002 & 2004 No actual use reports submitted

Baxter Basin

Year	Pasture 1		Pasture 2		Pasture 3		Total
	Dates	AUMs	Dates	AUMs	Dates	AUMs	
2011	REST	REST	5/10-6/5	107	4/10-5/9	118	225
2010	5/15-6/5	88	ND	ND	4/15-5/14	119	207
2009	REST	REST	5/13-6/1	95	4/2-5/12	195	290
2008	6/7-6/30	114	REST	REST	5/6-6/6	153	267
2007	REST	REST	6/4-6/18	72	5/10-6/3	119	191
2006	5/11-6/1	105	REST	REST	4/1-5/10	191	296
2005	REST	REST	5/10-6/1	110	4/1-5/9	191	301
2004	5/11-6/1	112	REST	REST	4/1-5/10	195	307
2002	5/13-6/6	163	ND	ND	4/1-5/12	264	427
2001	REST	REST	5/13-6/7	214	4/1-5/12	214	428
2000	4/1-5/12	209	REST	REST	5/13-6/7	134	343
1999	REST	REST	5/13-6/7	163	4/1-5/12	263	426
1998	4/1-5/1	194	REST	REST	5/2-6/7	231	425
1997	5/13-6/7	162	REST	REST	4/1-5/12	262	424
1997-2011 Average		143		127		189	326

ND = No Data

Blackstock Springs

Pasture 1

Year	Alan Johnstone				Ted Blackstock				Chipmunk Grazing Assoc.				Total
	Date	AUM	Fall	AUM	Date	AU M	Fall	AU M	Date	AUM	Fall	AU M	
2011	6/9-7/10	168	10/15-11/14	171	5/2-7/11	278	10/15-11/14	191	6/2-7/11	43	10/15-11/14	33	884
2010	6/9-7/14	198	10/20-11/20	184	5/1-7/13	319	10/19-11/19	182	5/1-7/13	55	10/19-11/19	31	969
2009	6/5-6/9	31	10/8-11/15	217	5/13-6/9	160	10/1-11/14	258	5/13-6/9	33	10/1-11/14	83	782
2008	6/12-7/7	81	10/9-11/15	241	5/12-7/1	288	10/4-11/15	243	5/23-7/1	41	10/4-11/15	44	938
2007	5/7-7/6	289	ND	ND	5/7-7/6	271	11/10-11/16	42	5/7-7/6	66	11/10-11/16	8	676
2006	6/6-7/14	208	10/20-11/3	78	5/1-7/9	335	9/29-11/14	240	5/1-7/9	51	9/59-11/14	45	957
2005	6/6-7/18	222	11/2-11/12	56	5/1-5/26	386	ND	ND	5/1-5/26	75	ND	ND	739
2004	3/26-5/23	278	ND	ND	5/1-5/18	92	9/12-11/13	380	5/8-8/18	9	9/12-11/7	41	800
2003	3/30-5/15	230	9/14-11/4	176	5/11-5/16	38	9/12-11/5	260	ND	ND	9/12-11/5	68	772
2002	5/17-6/1	80	9/14-11/16	286	5/12-6/5	129	9/11-11/15	343	5/12-6/5	15	9/12-11/15	67	920
2001	5/30-7/14	240	11/1-11/15	77	5/13-7/13	413	10/29-11/17	86	5/31-7/14	54	10/29-11/17	24	894
2000	5/4-6/17	212	9/27-11/11	238	5/16-6/18	360	9/29-11/15	199	5/18-6/18	61	9/28-11/15	49	1119
1999	6/4-6/19	69	10/4-11/13	206	5/23-6/19	179	10/4-11/13	198	5/26-6/19	29	10/5-11/13	41	722
1998	6/3-7/16	211	10/11-11/10	152	5/20-7/15	325	10/12-11/10	169	5/20-7/15	64	10/12-10-31	23	944
1997	6/12-6/29	86	10/12-11/15	147	5/18-5/31	91	11/1-11/15	238	6/1-6/8	9	10/12-11/1	24	595

	Alan Johnstone			Ted Blackstock			Chipmunk Grazing Assoc.			Total			
Year	Date	AUM	Fall	AUM	Date	AU M	Fall	AU M	Date	AUM	Fall	AU M	
1997- 2011 Average													847

ND = No Data

Pasture 2

	Alan Johnstone		Ted Blackstock		Chipmunk Grazing Assoc.		Total
Year	Date	AUM	Date	AUM	Date	AUM	
2011	7/11-8/23	264	7/11-8/23	266	7/11-8/23	49	579
2010	9/15-10/19	210	9/14-10/18	200	9/14-10/18	34	444
2009	6/10-8/3	341	6/10-8/3	315	6/10-8/3	101	757
2008	6/26-8/21	356	7/2-8/20	282	7/2-8/20	51	689
2007	9/26-11/17	279	9/15-11/9	340	9/15-11/9	61	680
2006	7/15-8/14	175	7/10-8/14	214	7/10-8/14	38	427
2005	7/19-9/17	327	9/16-11/12	207	9/16-11/12	40	574
2004	5/24-7/19	274	5/19-7/14	455	5/19-7/14	49	778
2003	5/16-7/17	327	5/17-7/20	346	5/25-7/20	66	739
2002	6/2-7/31	322	6/6-7/20	272	6/6-7/20	46	318
2001	9/16-11/15	314	9/14-10/28	218	9/15-10/28	52	584
2000	6/19-8/3	245	6/19-8/4	282	6/19-8/4	47	574
1999	6/20-8/4	231	6/20-8/4	333	6/20-8/4	44	608
1998	7/17-8/27	207	7/16-8/28	272	7/16-8/28	50	529
1997	8/21-10/11	269	8/21-10/31	362	8/12-10/11	60	691
1997-2011 Average							598

Pasture 3

	Alan Johnstone		Ted Blackstock		Chipmunk Grazing Assoc.		Total
Year	Date	AUM	Date	AUM	Date	AUM	
2011	8/24-10-14	171	8/24-10/14	321	8/24-10/14	55	547
2010	7/15-9/14	372	7/14-9/13	353	7/14-9/13	59	784
2009	8/4-10/7	403	8/4-9/30	332	8/4-9/30	107	842
2008	8/21-10/9	317	8/21-10/3	248	8/21-10/3	45	610
2007	7/7-9/25	462	7/7-9/4	411	7/7-9/4	76	949
2006	8/15-10/19	372	8/15-9/28	268	8/15-9/28	47	687
2005	9/18-11/1	231	7/19-9/15	326	7/19-9/15	63	620
2004	7/20-9/11	145	7/15-9/11	485	7/15-9/11	24	654
2003	7/18-9/13	177	7/21-9/11	285	7/21-9/11	61	523
2002	8/1-9/13	236	7/21-9/10	314	7/21-9/10	53	603
2001	7/15-9/15	337	7/14-9/13	300	7/15-9/14	75	712
2000	8/4-9/26	282	8/5-9/27	219	8/5-9/27	54	555

	Alan Johnstone		Ted Blackstock		Chipmunk Grazing Assoc.		Total
Year	Date	AUM	Date	AUM	Date	AUM	
1999	10/4-11/13	206	8/5-10/3	332	8/5-10/4	24	562
1998	8/28-10/10	216	8/29-10/11	272	8/29-10/11	50	538
1997	6/30-10/11	263	6/1-8/20	322	6/9-8/20	85	670
1997-2011 Average							657

Total

Year	Johnstone	Blackstock	Chipmunk Grazing Assoc.	Allotment Total
2011	774	1056	180	2010
2010	964	1054	179	2197
2009	992	1065	324	2381
2008	995	1061	181	2237
2007	1030	1064	211	2305
2006	833	1057	181	2071
2005	836	1228	234	1933
2004	697	1412	123	2232
2003	910	929	195	2078
2002	602	1058	181	1841
2001	968	1017	205	2190
2000	977	1060	211	2248
1999	712	1042	138	1892
1998	786	1038	187	2011
1997	765	1013	178	1956
1997-2011 Average	856	1077	194	2105

Burgess

Year	Pasture 1		Pasture 3		Total
	Dates	AUMs	Dates	AUMs	
2011	4/16-5/22	73	5/23-8/16	170	243
2010	4/16-5/20	69	5/21-8/16	174	243
2009	4/16-5/18	72	5/19-8/16	195	267
2008	4/16-5/20	76	5/21-8/16	191	267
2007	4/16-5/16	67	5/17-7/15	91	158
2006	4/15-5/16	69	5/17-8/15	197	266
2005	4/16-5/15	61	5/16-8/16	184	245
2003	4/16-5/15	59	5/16-8/5	162	221
2001	4/16-5/15	59	5/16-8/16	182	241
2000	4/16-5/15	59	5/16-8/15	182	241
1999	7/1-8/16	93	4/16-6/30	150	243

Year	Pasture 1		Pasture 3		Total
	Dates	AUMs	Dates	AUMs	
1998	4/16-6/7	79	6/8-8/16	138	217
1997	7/27-8/15	34	4/16-7/26	119	153
1997-2011 Average		67		164	231

Burgess FFR

Year	Dates	AUMs
1997-2011	12/1-12/31	11

Chimney Pot

Year	Dates	AUMs
1997-2011	12/1-12/31	4

Chipmunk FFR

Year	Dates	AUMs
2010	6/1-10-31	71
2008	12/1-12/31	72
1999-2007	ND	

ND = No Data

Corral Creek FFR

Year	Dates	AUMs
2007-2011	12/1-12/31	9

Cow Creek

Year	Pasture 1		Pasture 2		Pasture 3		Pasture 4		Pasture 5		Total
	Dates	AU Ms	Dates	AU Ms	Dates	AUMs	Dates	AUMs	Dates	AU Ms	
1986	4/3-4/25	151	4/26-6/27	328	5/1-5/11	31	5/12-7/15	181	6/28-9/20	200	891
1988	4/1-4/30	176	5/1-6/28	313	4/25-5/9	31	5/10-6/27	110	6/29-10/21	289	919
1989	4/1-5/1	201	5/2-6/26	294	4/25-7/14	137	5/10-8/30	316	6/27-10/19	172	1120
1990	4/1-5/1	219	5/2-6/24	305	4/25-7/16	149	5/9-8/31	340	6/25-9/30	184	1197
1991	4/1-4/30	212	5/1-6/24	329	4/25-7/16	149	5/9-8/31	321	6/1-6/30	182	1193
1992	4/1-4/30	214	5/1-6/15	270	4/25-7/12	104	5/9-8/31	322	6/16-9/19	180	1090
1993	5/15-6/24	208	4/1-5/14	314	4/25-7/16	148	5/9-8/31	322	6/25-10/27	175	1167
1994	4/1-4/30	ND	5/1-6/15	ND	6/16-9/30	ND	6/16-9/30	ND	6/16-9/30	ND	ND
1995	4/1-4/23	ND	4/24-6/24	ND	4/25-5/8 and 7/1-9/30	ND	5/9-9/30	ND	6/25-9/30	ND	ND
1996	4/1-4/30	ND	5/1-6/24	ND	4/25-5/8 and 7/1-9/30	ND	5/9-9/30	ND	6/25-9/30	ND	ND
1997	4/1-4/27	ND	4/28-6/15	ND	6/16-9/30	ND	6/16-9/30	ND	6/16-9/30	ND	ND
1998	4/1-4/29	ND	4/30-6/15	ND	6/16-9/30	ND	6/16-9/30	ND	6/16-9/30	ND	ND
1999	4/1-4/30		5/1-6/15		6/16-9/31		6/16-9/31		6/16-9/31	ND	ND
2000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2001	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2002	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2003	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2004	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2005	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2006	4/1-4/30	195	5/1-6/24	389	4/25-7/16	123	5/9-8/31	321	6/26-9/30	210	1238
2007	4/2-See Schematic 196 Cattle										ND
2008	4/4-9/25										ND

	Pasture 1		Pasture 2		Pasture 3		Pasture 4		Pasture 5		
Year	Dates	AU Ms	Dates	AU Ms	Dates	AUMs	Dates	AUMs	Dates	AU Ms	Total
2009	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2010	4/4-9/20										ND
2011	4/7-5/1	155	5/2-6/18	298	7/2-7/15	68	6/10-9/15	203	7/2-9/22	147	871

Elephant Butte

Pasture 1

Year	Ted Blackstock		Chipmunk Grazing Assoc.		Total
	Spring Dates	AUMs	Spring Dates	AUMs	
2011	ND	ND	4/1-4/22	30	30
2010	5/1-5/18	63	5/1-5/18	17	80
2009	ND	ND	ND	ND	ND
2008	4/1-5/11	95	ND	ND	95
2007	ND	ND	ND	ND	ND
2006	4/1-5/13	84	4/1-5/13	79	163
2005	ND	ND	ND	ND	ND
2004	ND	ND	ND	ND	ND
2003	4/2-5/9	118	4/2-5/9	55	173
2002	4/8-5/10	53	4/8-4/25	47	100
2001	ND	ND	ND	ND	ND
2000	4/1-5/16	70	ND	ND	70
1999	4/30-5/21	49	4/29-5/22	38	87
1998	ND	ND	ND	ND	ND
1997	4/1-5/17	207	4/1-5/17	59	266
1997-2011 Average					118

ND = No Data

Pasture 2

Year	Ted Blackstock		Chipmunk Grazing Assoc.		Total
	Spring Dates	AUMs	Spring Dates	AUMs	
2011	ND	ND	ND	ND	ND
2010	4/3-4/30	98	4/3-4/30	26	124
2009	ND	ND	ND	ND	ND
2008	ND	ND	ND	ND	ND
2007	4/3-5/7	132	4/1-5/7	83	215
2006	ND	ND	ND	ND	ND
2005	ND	ND	ND	ND	ND
2004	4/1-5/8	162	4/1-5/8	44	206
2003	ND	ND	ND	ND	ND
2002	4/11-4/25	45	ND	ND	45
2001	4/3-5/18	52	4/3-5/18	73	125
2000	4/1-5/16	70	ND	ND	70
1999	4/1-4/29	118	ND	ND	118
1998	ND	ND	ND	ND	ND
1997	ND	ND	ND	ND	ND

	Ted Blackstock		Chipmunk Grazing Assoc.		Total
Year	Spring Dates	AUMs	Spring Dates	AUMs	
1997-2011 Average					129

ND = No Data

Pasture 3

	Ted Blackstock		Chipmunk Grazing Assoc.		Total
Year	Spring Dates	AUMs	Spring Dates	AUMs	
2011	ND	ND	4/23-5/31	54	54
2010	ND	ND	ND	ND	ND
2009	ND	ND	ND	ND	ND
2008	4/2-5/11	98	ND	ND	98
2007	ND	ND	ND	ND	ND
2006	ND	ND	ND	ND	ND
2005	ND	ND	ND	ND	ND
2004	ND	ND	ND	ND	ND
2003	ND	ND	ND	ND	ND
2002	ND	ND	ND	ND	ND
2001	ND	ND	ND	ND	ND
2000	4/1-5/21	73	4/1-5/21	79	152
1999	ND	ND	ND	ND	ND
1998	4/1-5/19	27	4/1-5/19	81	108
1997	4/7-5/19	122	4/7-4/20	23	145
1997-2011 Average					111

ND = No Data

Pasture 4

	Ted Blackstock		Chipmunk Grazing Assoc.		Total
Year	Spring Dates	AUMs	Spring Dates	AUMs	
2011	ND	ND	ND	ND	ND
2010	ND	ND	ND	ND	ND
2009	ND	ND	ND	ND	ND
2008	ND	ND	ND	ND	ND
2007	ND	ND	ND	ND	ND
2006	4/1-4/30	26	ND	ND	26
2005	ND	ND	ND	ND	ND
2004	4/1-4/30	23	4/1-4/30	26	49

2003	ND	ND	ND	ND	ND
2002	ND	ND	ND	ND	ND
2001	3/26-3/31	9	ND	ND	9
2000	3/15-3/31	24	ND	ND	24
1999	ND	ND	ND	ND	ND
1998	3/23-3/31	12	ND	ND	12
1997	3/15-4/1	44	ND	ND	44
1997-2011 Average					27

ND = No Data

Pasture 5

Year	Ted Blackstock		Chipmunk Grazing Assoc.		Total
	Spring Dates	AUMs	Spring Dates	AUMs	
2011	ND	ND	ND	ND	ND
2010	3/15-4/2	21	3/15-4/2	7	28
2009	ND	ND	ND	ND	ND
2008	ND	ND	ND	ND	ND
2007	3/15-4/2	36	ND	ND	36
2006	3/15-3/31	24	ND	ND	24
2005	ND	ND	ND	ND	ND
2004	3/18-3/31	33	3/18-3/31	16	49
2003	3/15-4/1	20	3/15-4/1	26	46
2002	3/15-3/28	34	ND	ND	34
2001	4/1-5/11	109	ND	ND	109
2000	ND	ND	ND	ND	ND
1999	4/30-5/21	49	4/4-4/29	41	90
1998	4/5-5/19	164	ND	ND	164
1997	ND	ND	ND	ND	ND
1997-2011 Average					64

ND = No Data

Total

Year	Total Spring AUMs	Total Use AUMs
2011	84	388
2010	232	389
2009	ND	354
2008	193	193
2007	251	251
2006	213	213
2005	ND	388
2004	304	304

Year	Total Spring AUMs	Total Use AUMs
2003	219	219
2002	179	179
2001	243	243
2000	316	371
1999	295	364
1998	284	417
1997	455	531
1997-2011 Average	251	320

ND = No Data

Ferris FFR

Year	Seeding		Mountain		Pasture 1		Total AUMs
	Date	AUM	Date	AUM	Date	AUM	
2011	4/26-4/26	9	6/1-6/1	9	ND	ND	18
2010	12/1-12/31 148 AUMS						148
2009	12/1-12/31 150 AUMS						150
2006-2008	No Actual Use submitted						ND
2005	10/15-11/15 105 AUMS						105
1997-2004	No Actual Use submitted						ND
1997-2011 Average		9		9			105

ND = No Data

Franconi

Year	Pasture 1		Pasture 2		Pasture 3		Total AUMs
	Dates	AUMs	Dates	AUMs	Dates	AUMs	
2011	10/8-12/10 358 AUMS						111
2009	5/9-6/20	61	6/20-8/22	91	8/22-9/12	13	169
2008	Rest	Rest	Rest	Rest	Rest	Rest	Rest
2007	ND	ND	9/1-10/7 61 AUMS				61
2005	9/15-10/15 46 AUMS						46
2004	Inadequate actual use reported						ND
2003	ND	ND	8/12-10/15	35	8/25-9/30	47	82
2000-2002, 2006, 2010	No Actual Use reported						
2000-2011 Average		61		63		30	90

ND = No Data

Jackson Creek

Pasture 1

Year	Tim McBride		LS Cattle Co		Chipmunk Grazing Assoc.		Total
	Date	AUMs	Date	AUMs	Date	AUMs	
2011	ND	ND	4/26-5/5	22	4/26-5/5	12	34
2010	ND	ND	4/18-6/1	76	4/18-6/1	43	119
2009	ND	ND	4/13-4/23	19	4/13-4/23	11	30
2008	ND	ND	4/8-5/18	86	4/8-5/18	48	134
2007	ND	ND	5/15-6/15	15	5/15-6/15	9	24
2006	ND	ND	4/20-6/20	506	ND	ND	506
2005	ND	ND	6/1-6/22	44	ND	ND	44
2003	10/15-10/20	11	5/23-6/18	8	5/23-6/18	20	39
2002	ND	ND	4/16-6/13	174	4/16-6/13	124	298
2001	ND	ND	ND	ND	ND	ND	0
2000	ND	ND	4/19-6/18	46	4/19-6/18	27	73
1999	ND	ND	5/1-6/19	58	5/1-6/19	33	91
1999-2011 Average							116

ND = No Data

Pasture 2

Year	Tim McBride		LS Cattle Co		Chipmunk Grazing Assoc.		Total
	Date	AUMs	Date	AUMs	Date	AUMs	
2011	6/1-6/21	47	6/5-6/21	47	6/5-6/21	26	120
2010	ND	ND	6/2-6/15	27	6/2-6/15	15	42
2009	ND	ND	6/14-6/23	26	6/14-6/23	15	41
2008	ND	ND	5/19-6/19	70	5/19-6/19	40	110
2007	ND	ND	4/14-6/15	162	4/14-6/15	91	253
2006	ND	ND	ND	ND	ND	ND	ND
2005	ND	ND	ND	ND	ND	ND	ND
2003	ND	ND	ND	ND	ND	ND	ND
2002	ND	ND	ND	ND	ND	ND	ND
2001	ND	ND	ND	ND	ND	ND	ND
2000	ND	ND	ND	ND	ND	ND	ND
1999	ND	ND	ND	ND	ND	ND	ND
1999-2011 Average							113

ND = No Data

Pasture 3

Year	Tim McBride		LS Cattle Co		Chipmunk Grazing Assoc.		Total
	Date	AUMs	Date	AUMs	Date	AUMs	
2011	ND	ND	5/6-6/4	83	5/6-6/4	47	130
2010	ND	ND	ND	ND	ND	ND	ND
2009	ND	ND	4/24-6/13	102	4/24-6/13	57	159
2008	ND	ND	REST	Rest	Rest	Rest	ND
2007	ND	ND	6/16-6/18	8	6/16-6/18	4	12
2006	ND	ND	ND	ND	ND	ND	ND
2005	ND	ND	4/23-6/23	471	ND	ND	471
2003	ND	ND	ND	ND	ND	ND	ND
2002	ND	ND	ND	ND	ND	ND	ND
2001	ND	ND	ND	ND	ND	ND	ND
2000	ND	ND	ND	ND	ND	ND	ND
1999	ND	ND	5/24-6/9	97	5/24-6/9	55	152
1999-2011 Average							185

ND = No Data

Pastures 4 and 5

Year	Tim McBride		LS Cattle Co		Chipmunk Grazing Assoc.		Total
	Date	AUMs	Date	AUMs	Date	AUMs	
2011	6/22-10/24	266	6/22-10/31	361	6/22-10/31	204	831
2010	6/21-11/01	310	6/18-11/1	383	6/18-11/1	215	908
2009	ND	ND	6/24-11/01	366	6/24-11/01	206	572
2008	6/2-10/29	335	6/20-11/5	361	6/20-11/5	205	901
2007	5/30-10/21	329	6/20-11/05	384	6/20-11/05	217	930
2006	6/14-10/18	305	ND	ND	4/22-10/24	422	727
2005	6/11-10/23	306	ND	ND	6/25-10/12	251	557
2003	6/15-10/15	279	6/19-9/15	233	6/19-9/15	567	1079
2002	ND	ND	6/14-10/23	362	6/14-10/23	177	539
2001	ND	ND	ND	ND	6/1-10/31	347	347
2000	6/1-10/31	347	6/19-11/4	408	6/19-11/4	230	985
1999	6/1-10/31	347	6/20-11/2	193	6/20-11/2	108	648
1999-2011 Average							752

ND = No Data

Joint

Year	Pasture 2		Pasture 3		Pasture 4		Total
	Date	AUMs	Date	AUM	Date	AUMs	
2011	6/1-7/12	311	4/26-5/31	267	7/13-8/15	27	605
2010	6/12-6/24	97	4/17-6/11	419	ND	ND	516
2009	6/6-7/18	304	4/25-6/5	297	Rest	Rest	601
2008	4/26-6/7	ND	4/26-6/7	283	ND	ND	283
2007	4/17-5/29	ND	4/17-5/29	293	Rest	Rest	293
2006	7/20-8/30	275	4/16-6/7	304	6/8-7/19	241	820
2005	07/10-11/08	638	4/19-6/2	230	6/3-7/9	193	1061
2000	10/1-11/24	189	4/16-6/3	267	10/1-10/14	2*	456
1999	6/3-7/15	229	4/16-6/2	263	10/1-11/8	91	583
1998	11/04-12/22	236	4/16-6/02	232	6/3-7/15	208	676
1997	6/3-7/15	360	4/16-6/02	402	10/15-12/13	104	866
1997-2011 Average		293		296		144	615

*trail through

ND = No Data

2001-2004 No data

Lowry FFR

Year	Dates	AUMs
1997-2011	12/1-12/31	6

Madriaga

Year	Pasture 1		Pasture 2		Pasture 3		Total
	Dates	AUMs	Dates	AUMs	Dates	AUMs	
2011	4/17-6/17	312	6/18-8/20	322	8/21-8/27	42	676
2010	4/16-7/3	376	6/16-8/28	274	8/7-9/30	225	875
2009	5/9-6/19	197	6/20-8/22	293	8/22-9/13	102	592
2008	4/23-7/15	268	6/14-8/23	380	ND	ND	648
2007	4/16-5/29	210	5/30-6/1	352	ND	ND	562
2006	4/16-5/28	205	5/29-7/21	273	7/22-9/15	273	751
2005	Rest	0	4/18-8/5	183	Rest	Rest	183
2004	3/16-8/12	256	3/17-8/25	652	Rest	Rest	908
2002	6/1-7/15	246	4/20-5/1	60	ND	ND	306
2001	5/29-6/23	120	6/24-7/1	36	6/1-7/1	35	191
1998	6/15-8/7	306	4/18-4/27	312	ND	ND	618
1997-2011 Average		227		285		135	574

Madriaga has 2 pastures, but pasture 3 is actually part of pasture 1 and is grazed at times separately by use of hotwire fence (see schematic maps)

ND = No Data

Poison Creek

Year	Horses		Sheep				Cattle		Total
	Dates	AUMs	Dates	AUMs	Date	AUMs	Dates	AUMs	
2011	4/1-5/31	10	3/27-5/26	341	ND	ND	4/1-5/31	271	622
2010	4/5-4/20	2	4/4-4/20	121	ND	ND	4/1-5/30	162	285
2009	ND	ND	4/6-4/20	95	ND	ND	4/2-6/16	174	269
2008	ND	ND	4/1-4/30	240	ND	ND	4/3-6/3	275	515
2007	ND	ND	3/20-4/20	388	ND	ND	4/1-6/6	185	573
2006	ND	ND	3/20-5/11	469	ND	ND	4/6-6/1	217	686
2005	ND	ND	3/22-5/4	454	10/15-10/24	105	4/5-6/10	183	742
2004	Rest Fire	Rest Fire	Rest Fire	Rest Fire	Rest Fire	Rest Fire	Rest Fire	Rest Fire	Rest Fire
2003	Rest Fire	Rest Fire	Rest Fire	Rest Fire	Rest Fire	Rest Fire	Rest Fire	Rest Fire	Rest Fire
2000	3/28-4/17	2	3/28-4/17	222	ND	ND	4/1-5/31	174	398
1999	4/1-4/12	1	3/28-4/10	135	ND	ND	4/1-6/1	177	313
1998	ND	ND	3/28-4/18	289	ND	ND	ND	ND	289
1997	ND	ND	3/29-4/15	321	ND	ND	4/1-6/10	203	524
2005-2011 Average		6		301		105		210	527
1997-2011 Average		4		280		105		202	474

ND = No Data

R Collins FFR

Year	Dates	AUMs
2011	4/1-9/12	24
1997-2010	ND	24

Rats Nest

Year	Dates	AUMs
2011	4/1-6/6	513
2010	4/2-5/28	251
2009	4/3-5/25	492
2008	4/1-6/5	284
2007	4/5-5/22	468
2006	4/11-6/7	307
2005	4/1-5/25	589
2003	4/1-5/27	605
2002	4/2-5/26	557
2001	4/3-5/26	501

Year	Dates	AUMs
2000	4/2-5/27	536
1999	Rest	Rest
1998	4/3-5/23	287
1997	4/1-5/28	566
1997-2011 Average		458

Sands Basin

Spring Use

Year	Pasture 1		Pasture 2		Pasture 3		Pasture 4		Total Spring AUMs	Spring/Fall AUMs
	Spring Dates	AUMs	Spring Dates	AUMs	Spring Dates	AUMs	Spring Dates	AUMs		
2011	4/3-4/24	120	5/1-6/7	262	4/2-4/30	200	4/25-6/4	276	858	864
2010	4/1-6/3	303	5/16-6/6	129	4/30-5/15	213	5/1-6/3	241	886	895
2009	4/1-4/10	67	4/11-4/25	101	4/1-4/30	202	5/1-5/30	213	583	779
2008	4/1-5/1	208	5/2-6/6	242	4/2-5/4	234	5/5-6/2	206	890	899
2007	3/31-4/30	208	ND	ND	4/1-4/30	213	5/1-5/24	331	752	799
2006	4/1-5/1	206	5/1-5/25	337	4/1-4/30	213	5/26-5/31	82	838	885
2005	4/1-4/30	206	ND	ND	4/1-4/30	207	5/1-6/4	483	896	952
2004	ND	ND	ND	ND	Rest Fire	Rest Fire	ND	ND	750	750
2003	4/1-5/2	298	4/4-5/2	92	Rest Fire	Rest Fire	4/1-6/2	444	834	834
2002	4/1-4/17	114	4/18-5/13	359	4/1-4/17	120	5/14-5/30	235	828	828
2001	4/1-5/4	128	4/1-4/16	109	4/1-5/4	175	5/5-6/5	442	854	994
2000	4/1-5/5	410	ND	ND	ND	ND	5/6-6/5	428	838	993
1999	ND	ND	4/1-4/30	333	5/1-5/6	102	5/9-6/5	376	811	923
1998	4/5-4/9	44	4/1-5/28	425	ND	ND	5/1-5/31	396	865	902
1997	ND	ND	ND	ND	ND	ND	ND	ND	947	947
1997-2011 Avg.		193		239		188		319	829	883

ND = No Data

2003 & 2004 reductions due to wildfire

*trail through only

Fall Use

Pasture 1			Pasture 2			Pasture 4		
Year	Fall Dates	AUMs	Year	Fall Dates	AUMs	Year	Fall Dates	AUMs
2009	10/8-10/12	32	2011	11/6-11/7	6	2008	11/8-11/10	9
2000	10/14-11/14	155	2010	10/29-10/31	9	2006	10/18-10/26	56
1999	10/10-11/6	112	2009	10/1-10/31	164	1997	10/12-10/31	122
			2007	10/28-11/6	47			
			2005	10/22-11/5	97			
			2004	11/29-11/30	13			
			2001	10-25-11/7	140			
			1998	10/17-11/1	37			

Soda Creek

	Pasture 1		Pasture 2		Pasture 3		Pasture 5		Pasture 4 All Private		
Year	Dates	AU Ms	Dates	AUMs	Total						
2011	6/6-7/6	66	6/5-7/1	38	7/7-9/23	166	9/23-10/2	36	ND	ND	306
2010	6/1-7/13	63	6/5-7/13	55	7/14-9/17	128	ND	ND	9/18-10/6	62	308
2009	7/15-10/13	335	6/1-7/15	56	6/2-7/15	78	ND	ND	ND	ND	469
2008	ND	ND	6/1-7/13	81	7/14-9/18	184	6/2-7/14	37	ND	ND	302
2007	ND	ND	6/1-7/14	73	7/15-9/15	104	ND	ND	ND	ND	177
2006	ND	ND	6/1-7/15	180	7/14-9/15	259	ND	ND	ND	ND	439
2005	6/1-7/14	109	6/1-9/15	106	7/15-9/15	227	ND	ND	ND	ND	442
2004	6/1-7/15	105	6/1-7/15	77	7/16-9/15	261	ND	ND	ND	ND	443
2003	6/1-7/15	107	6/1-7/15	76	7/16-9/15	261	ND	ND	ND	ND	444
2001	6/1-7/5	130	6/1-7/15	130	7/16-9/26	438	ND	ND	ND	ND	698
2000	6/7-7/15	135	6/7-7/15	91	7/16-10/3	485	ND	ND	ND	ND	711
2000-2011 Average		131		88		236		37		62	431

ND = No Data

Stanford FFR

Year	Dates	AUMs
2011	4/1-6/7	107
2010	12/1-12/31	76
2009	ND	ND
2008	12/1-12/31	17*
2007	1/1-12/31	12*
1997-2006	ND	114
1997-2011 Average		99

*Data incorrect
 ND = No Data

Texas Basin

Year	Dates	AUMs
2011	6/5-11/4	5
2009	6/1-6/15 and 10/15-10/31	5
1988	6/1-10/27	5
1985	6/5-6/21	5
1985-2011 Average		5

Texas Basin has two pastures, but the permittee did not break down actual use by pasture and used the allotment in conjunction with private land

Trout Creek

Year	Pasture 1		Pasture 2		Pasture 3		Total
	Dates	AUMs	Dates	AUMs	Dates	AUMs	
2011	5/16-8/14	176	4/1-5/15	87	8/15-9/12	56	319
2010	5/17-8/14	ND	4/1-5/16	ND	8/17-10/5	ND	725
2009	5/15-8/15	ND	4/1-5/14	ND	8/16-10/1	ND	401
2008	ND	ND	4/2-7/30	289	8/15-9/2	74	363
2007	5/1-7/20	175	3/15-4/30	106	trail only	ND	281
2006	4/16-1/16	210	3/15-4/14	64	REST	ND	274

Year	Pasture 1		Pasture 2		Pasture 3		Total
	Dates	AUMs	Dates	AUMs	Dates	AUMs	
2005	4/15-7/15	183	3/15-4/15	63	7/16-8/18	72	318
2001	4/22-7/1	134	3/15-4/21	100	4/28-5/30	68	302
2000	7/20-8/3	15	3/15-5/5	111	5/6-7/19	148	274
1999	6/15-9/9	143	3/25-4/25	68	4/26-6/14	105	316
1998	4/27-9/15	233	3/25-4/26	57	ND	ND	290
1997	4/30-10/6	148	4/8-4/29	26	7/17-10/20	66	240
1997-2011 Average		157		97		84	342

ND = No Data

Trout Creek/Lequerica

Year	Pasture 1		Pasture 2		Total
	Dates	AUMs	Dates	AUMs	
2010	6/20-8/18	71	8/19-9/27	11	82
2009	6/20-9/13	109	9/14-10/04	1	110
2008	7/19-10/1	108	7/3-7/18	23	131
2007	7/20-10/5	122	ND	ND	122
2006	10/8-10/31	68	ND	ND	68
2003	10/5-11/8	122	ND	ND	122
2000	9/20-11/5	82	ND	ND	82
1999	8/23-10/20	107	8/16-8/22	13	120
1998	8/17-10/1	80	8/10-8/16	12	92
1997	8/15-10/10	99	ND	ND	99
1997-2011 Average		97		12	103

ND = No Data

No data for 2001, 2002, 2004-2005, 2011

Appendix D: Rangeland Health Assessment Summary Tables

ESD in GIS: Data other than “ok” reflects a discrepancy of ESDs between original field data sheet and what is displayed in the 2003 Owyhee Soil Survey. The soil map unit for the site was therefore checked and generally showed that the original call made is one of several ESDs possible for the specific soil map unit. Monitoring sites where the field data sheet displayed an ESD that could not be associated with the specific soil map unit are marked as “inclusion”.

Jump Creek Subroup

Table D-1: 2012 Indicator Ratings² for Rangeland Health Assessments for the Elephant Butte Allotment

ESD in GIS		ok	ok	ok	ok	ok	ok	ok
Indicator	Indicator Type ¹	051007-RH1A (1) 02N04W33 Sandy loam/ Calc Loam 7-10	051007-RH1B (1) 02N04W30 Calc 7-10	051007-RH2A (2) 01N04W05 Loamy 10-13	051707-RH3A (3) 01N04W10 Calc 7-10	051707-RH3B (3) 01N04W14 Calc 7-10 Loamy 10-13	051307-RH4A (4) 01N04W03 Calc 7-10	051707-RH5A (5) 02N04W22 Sandy Loam 8-12
1. Rills	S,H	n-s	n-s	n-s	n-s	n-s	n-s	n-s
2. Water Flow Patterns	S,H	n-s	n-s	m	n-s	s-m	n-s	n-s
3. Pedestals/Terracettes	S,H	n-s	n-s	m-e	n-s	n-s	n-s	n-s
4. Bare Ground	S,H	n-s	n-s	m	n-s	n-s	n-s	n-s
5. Gullies	S,H	n-s	n-s	n-s	n-s	n-s	n-s	n-s
6. Wind Scoured, Blowouts and/or Depositions	S	n-s	n-s	n-s	n-s	n-s	n-s	n-s
7. Litter Movement	S	n-s	n-s	n-s	n-s	n-s	n-s	n-s
8. Soil Surface Resistance to Erosion	S,H,B	s-m	n-s	m	s-m	n-s	n-s	n-s
9. Soil Surface Loss or Degradation	S,H,B	s-m	n-s	m-e	n-s	s-m	n-s	n-s
10. Plant Community Comp. & Distribution Relative to Infiltration & Runoff	H	m-e	m-e	m-e	m	m	m-e	m
11. Compaction Layer	S,H,B	n-s	n-s	s-m	n-s	n-s	n-s	s-m
12. Functional/Structural Groups	B	m-e	m-e	m	m-e	m	m-e	m-e
13. Plant Mortality/Decadence	B	n-s	n-s	m	n-s	n-s	s-m	n-s
14. Litter Amount	H,B	n-s	n-s	s-m	n-s	n-s	n-s	s-m
15. Annual Production	B	n-s	n-s	s-m	s-m	s-m	n-s	n-s
16. Invasive Plants	B	m-e	m-e	m	m-e	m-e	m-e	m-e
17. Reproductive Capability of Perennial Plants	B	n-s	n-s	n-s	m	n-s	n-s	n-s

¹S = Soil/Site Stability Indicator, H = Hydrologic Function Indicator, B = Biotic Integrity Indicator

²Departures from reference conditions; n-s = none to slight, s-m = slight to moderate, m = moderate, m-e = moderate to extreme, e = extreme

Table D-2: 2012 Attribute Ratings for Rangeland Health Assessments for the Elephant Butte Allotment

Attribute	Attribute Rating						
	02N04W3 3	02N04W3 0	01N04W0 5	01N04W 10	01N04W 14	01N04W0 3	02N04W2 2
Soil/Site Stability (S)	n-s	n-s	m	n-s	n-s	n-s	n-s
Hydrologic Function (H)	n-s	n-s	m	n-s	s-m	n-s	n-s
Biotic Integrity (B)	m-e	m-e	m	m-e	m	m-e	m

Table D-3: 2012 Indicator Ratings² for Rangeland Health Assessments for the Poison Creek, Rats Nest, and Alkali-Wildcat Allotments

ESD in GIS		ok	ok	SCP 11-13	ok	ok	Loamy 10-13	ok
Indicator	Indicator Type ¹	Poison Ck. Seeding 061008-1B 01N05W05 Loamy 10-13	Poison Ck. Natural 061008-1A 01N05W05 Loamy 10-13	Rats Nest 052107-RH1A 01N04W33 Loamy 10-13	Rats Nest 052107-RH1B 01N04W22 Loamy 10-13	Alkali Wildcat 082107-RH1A 01N05W12 Loamy 10-13	Alkali Wildcat 082107-RH1B 01N05W15 Loamy 10-13 SCP 11-13	Alkali Wildcat 082107-RH1C 02N05W34 Loamy 10-13
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	n-s	n-s	n-s	s-m	n-s	n-s
3. Pedestals/Terracettes	S,H	s-m	m	m	n-s	m	m	m
4. Bare Ground	S,H	n-s	n-s	n-s	n-s	n-s	s-m	n-s
5. Gullies	S,H	n-s	n-s	n-s	n-s	n-s	n-s	n-s
6. Wind Scoured, Blowouts and/or Depositions	S	s-m	m	n-s	n-s	s-m	n-s	n-s
7. Litter Movement	S	n-s	n-s	n-s	n-s	m	s-m	n-s
8. Soil Surface Resistance to Erosion	S,H,B	s-m	s-m	n-s	n-s	m	n-s	s-m
9. Soil Surface Loss or Degradation	S,H,B	n-s	s-m	n-s	n-s	m	m	s-m

ESD in GIS		ok	ok	SCP 11-13	ok	ok	Loamy 10-13	ok
Indicator	Indicator Type¹	Poison Ck. Seeding 061008-1B 01N05W05 Loamy 10-13	Poison Ck. Natural 061008-1A 01N05W05 Loamy 10-13	Rats Nest 052107-RH1A 01N04W33 Loamy 10-13	Rats Nest 052107-RH1B 01N04W22 Loamy 10-13	Alkali Wildcat 082107-RH1A 01N05W12 Loamy 10-13	Alkali Wildcat 082107-RH1B 01N05W15 Loamy 10-13 SCP 11-13	Alkali Wildcat 082107-RH1C 02N05W34 Loamy 10-13
10. Plant Community Comp. & Distribution Relative to Infiltration & Runoff	H	n-s	n-s	s-m	n-s	n-s	s-m	n-s
11. Compaction Layer	S,H,B	n-s	n-s	n-s	n-s	n-s	n-s	n-s
12. Functional/Structural Groups	B	n-s	m	s-m	s-m	m	m	s-m
13. Plant Mortality/Decadence	B	n-s	s-m	n-s	n-s	n-s	m	n-s
14. Litter Amount	H,B	n-s	n-s	s-m	n-s	m	s-m	n-s
15. Annual Production	B	n-s	s-m	s-m	n-s	s-m	s-m	n-s
16. Invasive Plants	B	m	n-s	n-s	n-s	m	s-m	n-s
17. Reproductive Capability of Perennial Plants	B	n-s	n-s	n-s	n-s	s-m	s-m	n-s

¹S = Soil/Site Stability Indicator, H = Hydrologic Function Indicator, B = Biotic Integrity Indicator

²Departures from reference conditions; n-s = none to slight, s-m = slight to moderate, m = moderate, m-e = moderate to extreme, e = extreme

Table D-4: 2012 Attribute Ratings for Rangeland Health Assessments for the Poison Creek, Rats Nest, and Alkali-Wildcats Allotments

Attribute	Attribute Rating						
	01N05W05	01N05W05	01N04W33	01N04W22	01N05W12	01N05W15	02N05W34
Soil/Site Stability (S)	n-s	s-m	n-s	n-s	m	s-m	s-m
Hydrologic Function (H)	n-s	s-m	n-s	n-s	m	s-m	n-s
Biotic Integrity (B)	n-s	s-m	n-s	n-s	m	s-m	n-s

Table D-5: 2012 Indicator Ratings² for Rangeland Health Assessments for the Sands Basin Allotment

ESD in GIS		ok	ok	ok	ok	ok	SCP 12-16
Indicator	Indicator Type ¹	091307- RH1A (1) 01N05W21 Loamy 11- 13	082207- RH2A (2) 01N05W18 Loamy 10- 13	082307- RH2B (2) 01N05W20 Loamy 11- 13 SCP 12-16	082307- RH3A (3) 01N06W24 Loamy 10- 13	082307- RH3B (3) 01N06W24 Loamy 10- 13	090507- RH3C (3) 01N06W12 Loamy 11- 13
1. Rills	S,H	n-s	n-s	n-s	n-s	n-s	n-s
2. Water Flow Patterns	S,H	s-m	n-s	n-s	s-m	n-s	n-s
3. Pedestals/Terracettes	S,H	m	s-m	s-m	s-m	s-m	n-s
4. Bare Ground	S,H	n-s	n-s	n-s	n-s	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	n-s	n-s	n-s	n-s	n-s	n-s
7. Litter Movement	S	s-m	n-s	n-s	s-m	n-s	n-s
8. Soil Surface Resistance to Erosion	S,H,B	s-m	n-s	n-s	s-m	s-m	n-s
9. Soil Surface Loss or Degradation	S,H,B	m	n-s	n-s	s-m	s-m	n-s
10. Plant Community Comp. & Distribution Relative to Infiltration & Runoff	H	n-s	n-s	n-s	m	m-e	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	s-m	n-s	n-s	m-e	e	s-m
13. Plant Mortality/Decadence	B	s-m	s-m	n-s	n-s	s-m	n-s
14. Litter Amount	H,B	n-s	n-s	n-s	m	e	s-m
15. Annual Production	B	n-s	s-m	n-s	m	n-s	n-s
16. Invasive Plants	B	m	s-m	n-s	m-e	e	s-m
17. Reproductive Capability of Perennial Plants	B	s-m	n-s	n-s	s-m	m	n-s

¹S = Soil/Site Stability Indicator, H = Hydrologic Function Indicator, B = Biotic Integrity Indicator

²Departures from reference conditions; n-s = none to slight, s-m = slight to moderate, m = moderate, m-e = moderate to extreme, e = extreme

Table D-6: 2012 Attribute Ratings for Rangeland Health Assessments for the Sands Basin Allotment

Attribute	Attribute Rating					
	01N05W21	01N05W18	01N05W20	01N06W24	01N06W24	01N06W12
Soil/Site Stability (S)	s-m	n-s	n-s	s-m	s-m	n-s
Hydrologic Function (H)	s-m	n-s	n-s	s-m	m	n-s
Biotic Integrity (B)	s-m	n-s	n-s	m	m-e	n-s

Table D-7: 2012 Indicator Ratings² for Rangeland Health Assessments for the Sands Basin Allotment (cont)

ESD in GIS		ok	Loamy 11-13 MU89	SCP 12-16
Indicator	Indicator Type¹	082207-RH4A (4) 01N05W31 Loamy 11-13 (w/ SCP 11-13 inclusions)	091307-RH4C (4) 01N05W28 SCP 11-13 (inclusion)	090507-RH4B (4) 01N06W26 Loamy 11-13 SCP 12-16
1. Rills	S,H	n-s	n-s	n-s
2. Water Flow Patterns	S,H	n-s	m	m-e
3. Pedestals/Terracettes	S,H	m-e	m	m
4. Bare Ground	S,H	n-s	n-s	s-m
5. Gullies	S,H	n-s	n-s	n-s
6. Wind Scoured, Blowouts and/or Depositions	S	n-s	n-s	n-s
7. Litter Movement	S	s-m	s-m	s-m
8. Soil Surface Resistance to Erosion	S,H,B	n-s	m	s-m
9. Soil Surface Loss or Degradation	S,H,B	s-m	m	m
10. Plant Community Comp. & Distribution Relative to Infiltration & Runoff	H	s-m	s-m	m-e
11. Compaction Layer	S,H,B	n-s	n-s	n-s
12. Functional/Structural Groups	B	m	s-m	m-e
13. Plant Mortality/Decadence	B	m-e	m-e	n-s
14. Litter Amount	H,B	n-s	m	s-m
15. Annual Production	B	n-s	s-m	s-m
16. Invasive Plants	B	m-e	m-e	m-e

ESD in GIS		ok	Loamy 11-13 MU89	SCP 12-16
Indicator	Indicator Type¹	082207-RH4A (4) 01N05W31 Loamy 11-13 (w/ SCP 11-13 inclusions)	091307-RH4C (4) 01N05W28 SCP 11-13 (inclusion)	090507-RH4B (4) 01N06W26 Loamy 11-13 SCP 12-16
17. Reproductive Capability of Perennial Plants	B	s-m	s-m	n-s

¹S = Soil/Site Stability Indicator, H = Hydrologic Function Indicator, B = Biotic Integrity Indicator

²Departures from reference conditions; n-s = none to slight, s-m = slight to moderate, m = moderate, m-e = moderate to extreme, e = extreme

Table D-8: 2012 Attribute Ratings for Rangeland Health Assessments for the Sands Basin Allotment (cont.)

Attribute	Attribute Rating		
	01N05W31	01N05W28	01N06W26
Soil/Site Stability (S)	s-m	m	m
Hydrologic Function (H)	s-m	m	m
Biotic Integrity (B)	m	m	m

Succor Creek Subgroup

Table D-9: 2012 Indicator Ratings² for Rangeland Health Assessments for the Blackstock Springs Allotment

ESD in GIS		ok	ok	SCP 12-16 MU151	ok	SCP 11-13	ok
Indicator	Indicator Type¹	(1) 061703-1A 01S05W29 Loamy 10-13	(1) 061703-3A 01S05W21 Loamy 10-13	(1) 061703-4A 01S05W27 Loamy 13-16 (inclusion)	(1) 061703-5A 01S05W9 Loamy 10-13	(1) 061803-1A 01S05W30 Loamy 10-13	(2) 060503-1A 02S05W04 SCP 11-13
1. Rills	S,H	n-s	n-s	n-s	n-s	n-s	n-s
2. Water Flow Patterns	S,H	m	m	s-m	m	m	s-m
3. Pedestals/Terracettes	S,H	m	s-m	s-m	s-m	s-m	m
4. Bare Ground	S,H	s-m	s-m	n-s	s-m	s-m	s-m
5. Gullies	S,H	n-s	n-s	n-s	n-s	n-s	n-s

ESD in GIS		ok	ok	SCP 12-16 MU151	ok	SCP 11-13	ok
Indicator	Indicator Type¹	(1) 061703-1A 01S05W29 Loamy 10- 13	(1) 061703-3A 01S05W21 Loamy 10- 13	(1) 061703-4A 01S05W27 Loamy 13- 16 (inclusion)	(1) 061703-5A 01S05W9 Loamy 10- 13	(1) 061803-1A 01S05W30 Loamy 10- 13	(2) 060503-1A 02S05W04 SCP 11-13
6. Wind Scoured, Blowouts and/or Depositions	S	n-s	n-s	n-s	n-s	n-s	n-s
7. Litter Movement	S	n-s	n-s	n-s	s-m	s-m	s-m
8. Soil Surface Resistance to Erosion	S,H,B	s-m	s-m	n-s	s-m	s-m	s-m
9. Soil Surface Loss or Degradation	S,H,B	s-m	n-s	n-s	s-m	s-m	s-m
10. Plant Community Comp. & Distribution Relative to Infiltration & Runoff	H	s-m	s-m	m	m	n-s	s-m
11. Compaction Layer	S,H,B	n-s	n-s	n-s	n-s	n-s	s-m
12. Functional/Structural Groups	B	s-m	s-m	s-m	s-m	s-m	s-m
13. Plant Mortality/Decadence	B	m	n-s	n-s	s-m	m	s-m
14. Litter Amount	H,B	s-m	s-m	n-s	m	s-m	s-m
15. Annual Production	B	n-s	n-s	n-s	m	n-s	n-s
16. Invasive Plants	B	m-e	m-e	m-e	m-e	m-e	s-m
17. Reproductive Capability of Perennial Plants	B	n-s	n-s	n-s	s-m	n-s	n-s

¹S = Soil/Site Stability Indicator, H = Hydrologic Function Indicator, B = Biotic Integrity Indicator

²Departures from reference conditions; n-s = none to slight, s-m = slight to moderate, m = moderate, m-e = moderate to extreme, e = extreme

Table D-10: 2012 Attribute Ratings for Rangeland Health Assessments for the Blackstock Springs Allotment

Attribute	Attribute Rating					
	01S05W29	01S05W21	01S05W27	01S05W9	01S05W30	02S05W04
Soil/Site Stability (S)	s-m	s-m	s-m	s-m	s-m	s-m
Hydrologic Function (H)	s-m	s-m	s-m	s-m	s-m	s-m
Biotic Integrity (B)	s-m	s-m	s-m	s-m	s-m	s-m

Table D-11: 2012 Indicator Ratings² for Rangeland Health Assessments for the Blackstock Springs Allotment cont.

ESDs in GIS		ok	SCP 12-16 MU166	SCP 12-16 MU151	SCP 12-16 MU151	SCP 12-16 MU151	SCP 12-16 MU192	SCP 12-16 MU192
Indicator	Indicator Type ¹	(2) 061803-2A 02S05W11 SCP 12-16	(2) 060503-2A 02S05W09 Loamy 11-13 (inclusion)	(2) 061703-3A 01S05W34 SCP 12-16 Loamy 13-16 (inclusion)	(3) 061803-3A 02S05W14 Loamy 13-16 (inclusion)	(3) 061803-4A 02S05W22 Loamy 16+ (inclusion)	(3) 070903-1A 02S05W21 Loamy 16+ (inclusion)	(3) 061903-1A 02S05W21 Loamy 16+ (inclusion)
1. Rills	S,H	n-s	n-s	n-s	n-s	n-s	n-s	n-s
2. Water Flow Patterns	S,H	m-e	s-m	m-e	m-e	s-m	s-m	n-s
3. Pedestals/Terracettes	S,H	m-e	n-s	m	m-e	n-s	s-m	n-s
4. Bare Ground	S,H	s-m	m	s-m	s-m	n-s	n-s	n-s
5. Gullies	S,H	n-s	n-s	n-s	n-s	n-s	n-s	n-s
6. Wind Scoured, Blowouts and/or Depositions	S	n-s	n-s	n-s	n-s	n-s	n-s	n-s
7. Litter Movement	S	s-m	s-m	s-m	s-m	n-s	n-s	n-s
8. Soil Surface Resistance to Erosion	S,H,B	s-m	s-m	s-m	s-m	n-s	n-s	n-s
9. Soil Surface Loss or Degradation	S,H,B	s-m	s-m	s-m	s-m	n-s	n-s	n-s
10. Plant Community Comp. & Distribution Relative to Infiltration & Runoff	H	s-m	s-m	s-m	n-s	s-m	n-s	n-s
11. Compaction Layer	S,H,B	n-s	n-s	n-s	n-s	n-s	n-s	n-s
12. Functional/Structural Groups	B	s-m	s-m	s-m	s-m	s-m	n-s	n-s
13. Plant Mortality/Decadence	B	m	s-m	s-m	s-m	n-s	n-s	n-s
14. Litter Amount	H,B	s-m	s-m	s-m	s-m	n-s	n-s	n-s
15. Annual Production	B	n-s	n-s	n-s	n-s	n-s	n-s	n-s
16. Invasive Plants	B	m	m-e	m-e	m-e	m-e	s-m	n-s
17. Reproductive Capability of Perennial Plants	B	s-m	s-m	n-s	n-s	n-s	n-s	n-s

¹S = Soil/Site Stability Indicator, H = Hydrologic Function Indicator, B = Biotic Integrity Indicator

²Departures from reference conditions; n-s = none to slight, s-m = slight to moderate, m = moderate, m-e = moderate to extreme, e = extreme

Table D-12: 2012 Attribute Ratings for Rangeland Health Assessments for the Blackstock Springs Allotment cont.

Attribute	Attribute Rating						
	02S05W1 1	02S05W0 9	01S05W3 4	02S05W1 4	02S05W2 2	02S05W2 1	02S05W2 1
Soil/Site Stability (S)	m	n-s (<i>s-m</i>)	s-m	s-m	n-s	n-s	n-s
Hydrologic Function (H)	m	s-m	s-m	s-m (<i>m</i>)	n-s	n-s	n-s
Biotic Integrity (B)	s-m	s-m	s-m	s-m	n-s	n-s	n-s

Letters in italics display final ratings determined during the interdisciplinary team revision in 2012 where the original call from 2003 was changed based on all available information.

Table D-13: 2012 Indicator Ratings² for Rangeland Health Assessments for the Jackson Creek Allotment

ESDs in GIS*		SCP 12-16	SCP 12-16	Loamy 16+ MU92	ok	ok	SCP 11-13 MU16
Indicator	Indicat or Type ¹	070803-2A (1) RH1A 03S06W25 SCP 11-13	070803-3A (1) RH1B 03S05W30 SCP 11-13	072903-4A (4) 03S05W27 SCP 12-16 (inclusion)	072903-3A (4) 03S05W35 Loamy 16+	071503-1A (2) RH2A 03S05W21 SCP 11-13	071803-1A (3) RH3A 02S05W32 SCP 12-16 (inclusion)
1. Rills	S,H	n-s	n-s	n-s	n-s	n-s	n-s
2. Water Flow Patterns	S,H	m-e	m	s-m	m-e	n-s	m
3. Pedestals/Terracettes	S,H	m-e	s-m	s-m	m	n-s	m-e
4. Bare Ground	S,H	s-m	n-s	n-s	s-m	n-s	m
5. Gullies	S,H	n-s	n-s	n-s	s-m	n-s	n-s
6. Wind Scoured, Blowouts and/or Depositions	S	n-s	n-s	n-s	n-s	n-s	n-s
7. Litter Movement	S	n-s	n-s	n-s	s-m	n-s	s-m
8. Soil Surface to Erosion	S,H,B	s-m	n-s	n-s	s-m	n-s	m
9. Soil Surface Loss or Degradation	S,H,B	m	s-m	n-s	s-m	n-s	s-m
10. Plant Community Comp. & Distribution Relative to Infiltration & Runoff	H	s-m	m	n-s	m	n-s	s-m
11. Compaction Layer	S,H,B	n-s	m	n-s	n-s	n-s	n-s
12. Functional/Structural Groups	B	s-m	m	s-m	m	n-s	s-m
13. Plant Mortality/Decadence	B	s-m	n-s	s-m	s-m	n-s	s-m
14. Litter Amount	H,B	n-s	n-s	n-s	s-m	n-s	s-m

ESDs in GIS*		SCP 12-16	SCP 12-16	Loamy 16+ MU92	ok	ok	SCP 11-13 MU16
Indicator	Indicat or Type¹	070803-2A (1) RH1A 03S06W25 SCP 11-13	070803-3A (1) RH1B 03S05W30 SCP 11-13	072903-4A (4) 03S05W27 SCP 12-16 (inclusion)	072903-3A (4) 03S05W35 Loamy 16+	071503-1A (2) RH2A 03S05W21 SCP 11-13	071803-1A (3) RH3A 02S05W32 SCP 12-16 (inclusion)
15. Annual Production	B	n-s	s-m	n-s	n-s	n-s	n-s
16. Invasive Plants	B	m-e	m-e	m	m-e	m	s-m
17. Reproductive Capability of Perennial Plants	B	n-s	m	s-m	s-m	n-s	s-m

¹S = Soil/Site Stability Indicator, H = Hydrologic Function Indicator, B = Biotic Integrity Indicator

²Departures from reference conditions; n-s = none to slight, s-m = slight to moderate, m = moderate, m-e = moderate to extreme, e = extreme

Table D-14: 2012 Attribute Ratings for Rangeland Health Assessments for the Jackson Creek Allotment

Attribute	Attribute Rating					
	03S06W25	03S05W30	03S05W27	03S05W35	03S05W21	02S05W32
Soil/Site Stability (S)	m	s-m	n-s	m	n-s	m
Hydrologic Function (H)	m	s-m	n-s	m	n-s	m
Biotic Integrity (B)	m	s-m	s-m	m	n-s	s-m

Table D-15: 2012 Indicator Ratings² for Rangeland Health Assessments for the Jackson Creek Allotment cont.

ESDs in GIS		ok	Loamy 16+ MU92	ok	ok	ok
Indicator	Indicator Type¹	061903-2A (3) RH3B 02S05W29 SCP 12-16	072903-2A (4) RH4A 03S05W34 SCP 12-16 (inclusion)	081903-1A (4) RH4B 03S05W35 Loamy 16+	081903-2A (4) RH4C 03S05W27 SCP 12-16	080503-4A (5) RH5A 04S04W8 Loamy 16+
1. Rills	S,H	n-s	n-s	n-s	n-s	n-s
2. Water Flow Patterns	S,H	n-s	m	m	m	s-m
3. Pedestals/Terracettes	S,H	n-s	s-m	m	s-m	s-m
4. Bare Ground	S,H	s-m	s-m	s-m	n-s	n-s

ESDs in GIS		ok	Loamy 16+ MU92	ok	ok	ok
Indicator	Indicator Type¹	061903-2A (3) RH3B 02S05W29 SCP 12-16	072903-2A (4) RH4A 03S05W34 SCP 12-16 (inclusion)	081903-1A (4) RH4B 03S05W35 Loamy 16+	081903-2A (4) RH4C 03S05W27 SCP 12-16	080503-4A (5) RH5A 04S04W8 Loamy 16+
5. Gullies	S,H	n-s	n-s	n-s	n-s	n-s
6. Wind Scoured, Blowouts and/or Depositions	S	n-s	n-s	n-s	n-s	n-s
7. Litter Movement	S	n-s	s-m	n-s	s-m	n-s
8. Soil Surface to Erosion	S,H,B	n-s	s-m	s-m	n-s	n-s
9. Soil Surface Loss or Degradation	S,H,B	n-s	s-m	s-m	s-m	n-s
10. Plant Community Comp. & Distribution Relative to Infiltration & Runoff	H	n-s	m	s-m	n-s	s-m
11. Compaction Layer	S,H,B	n-s	n-s	n-s	n-s	n-s
12. Functional/Structural Groups	B	s-m	s-m	s-m	s-m	s-m
13. Plant Mortality/Decadence	B	n-s	n-s	s-m	s-m	n-s
14. Litter Amount	H,B	n-s	n-s	m	s-m	s-m
15. Annual Production	B	n-s	n-s	s-m	n-s	n-s
16. Invasive Plants	B	m-e	m-e	m	s-m	m
17. Reproductive Capability of Perennial Plants	B	s-m	s-m	m	s-m	n-s

¹S = Soil/Site Stability Indicator, H = Hydrologic Function Indicator, B = Biotic Integrity Indicator

²Departures from reference conditions; n-s = none to slight, s-m = slight to moderate, m = moderate, m-e = moderate to extreme, e = extreme

Table D-16: 2012 Attribute Ratings for Rangeland Health Assessments for the Jackson Creek Allotment cont.

Attribute	Attribute Rating				
	02S05W29	03S05W34	03S05W35	03S05W27	04S04W8
Soil/Site Stability (S)	n-s	s-m	s-m	n-s	n-s
Hydrologic Function (H)	n-s	s-m	m	n-s	n-s
Biotic Integrity (B)	s-m	s-m	s-m	s-m	s-m

Cow Creek Subgroup

Table D-17: 2012 Indicator Ratings² for Rangeland Health Assessments for the Burgess FFR and Burgess, Lowry FFR, and Texas Basin FFR Allotments

EDSs in GIS		SCP 12-16	SCP 12-16	SCP 11-13 MU166	SCP 11-13 MU166	ok	SCP 11-13 MU16
Indicator	Indicator Type ¹	Burgess FFR 081903-3A (2) 03S06W25 SCP 11-13	Burgess FFR 071603-2A (2) 03S06W26 SCP 11-13	Burgess 071603-3A (1) 03S06W26 Loamy 13- 16 (inclusion)	Burgess 071603-1A (3) 04S06W02 Loamy 13- 16 (inclusion)	Lowry FFR³ 102901-1A (1) 05S06W24 SCP 12-16	Texas Basin FFR 061603-3A (2) 02S05W29 SCP 12-16 (inclusion)
1. Rills	S,H	n-s	n-s	n-s	n-s	n-s	n-s
2. Water Flow Patterns	S,H	s-m	m	s-m	m	s-m	m
3. Pedestals/Terracettes	S,H	m-e	m-e	s-m	m	m	m
4. Bare Ground	S,H	n-s	m-e	n-s	n-s	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	n-s	n-s	n-s	n-s	n-s	n-s
7. Litter Movement	S	n-s	s-m	n-s	n-s	n-s	s-m
8. Soil Surface Resistance to Erosion	S,H,B	n-s	m	s-m	s-m	m	n-s
9. Soil Surface Loss or Degradation	S,H,B	m	m	s-m	s-m	m	s-m
10. Plant Community Comp. & Distribution Relative to Infiltration & Runoff	H	s-m	m	n-s	s-m	s-m	m
11. Compaction Layer	S,H,B	n-s	n-s	n-s	n-s	s-m	n-s
12. Functional/Structural Groups	B	m-e	m-e	s-m	s-m	m	m
13. Plant Mortality/Decadence	B	s-m	m	n-s	s-m	s-m	m-e
14. Litter Amount	H,B	m	s-m	n-s	n-s	s-m	m
15. Annual Production	B	n-s	s-m	n-s	n-s	n-s	s-m
16. Invasive Plants	B	e	m	m	m	s-m	m-e
17. Reproductive Capability of Perennial Plants	B	m	s-m	n-s	m	n-s	m

¹S = Soil/Site Stability Indicator, H = Hydrologic Function Indicator, B = Biotic Integrity Indicator

²Departures from reference conditions; n-s = none to slight, s-m = slight to moderate, m = moderate, m-e = moderate to extreme, e = extreme

³This RHA now falls within pasture 2 of the Cow Creek allotment since fence lines were corrected (in GIS) in August 2012

Table D-18: 2012 Attribute Ratings for Rangeland Health Assessments for Burgess FFR and Burgess, Lowry FFR, and Texas Basin FFR Allotments

Attribute	Attribute Rating					
	03S06W25	05S06W26	03S06W26	04S06W02	05S06W24	02S05W29
Soil/Site Stability (S)	s-m	m	n-s	s-m	s-m	s-m
Hydrologic Function (H)	s-m	m	n-s	s-m	s-m	s-m
Biotic Integrity (B)	m (<i>m-e</i>)	m	s-m	s-m	s-m	m

Letters in italics display final ratings determined during the interdisciplinary team revision in 2012 where the original call from 2003 was changed based on all available information.

Table D-19: 2012 Indicator Ratings² for Rangeland Health Assessments for the Cow Creek Allotment

ESDs in GIS		SCP 12-16	Loamy 11-13 MU197	ok	ok	ok	ok	Loamy 13-16	ok
Indicator	Indicator Type ¹	051601-3A (1) 05S06W26 Loamy 11-13	051401-3A (2) 05S06W11 Loamy 13-16 (<i>inclusion</i>)	051401-2A (2) 05S06W11 SCP 11-13	052401-3A (2) 05S06W24 SCP 12-16	051701-4A (3) 04S05W31 Loamy 13-16	051701-3A (4) 05S05W6 Loamy 13-16	051701-1A (5) 05S05W3 SCP 12-16	051701-2A (5) 05S05W3 Loamy 13-16
1. Rills	S,H	n-s	n-s	n-s	n-s	n-s	n-s	n-s	n-s
2. Water Flow Patterns	S,H	s-m	s-m	s-m	n-s	s-m	s-m	m-e	n-s
3. Pedestals/Terracettes	S,H	s-m	s-m	s-m	n-s	n-s	n-s	m	s-m
4. Bare Ground	S,H	n-s	s-m	n-s	n-s	n-s	s-m	s-m	n-s
5. Gullies	S,H	n-s	n-s	n-s	n-s	n-s	n-s	n-s	n-s
6. Wind Scoured, Blowouts and/or Depositions	S	n-s	n-s	n-s	n-s	n-s	n-s	n-s	n-s
7. Litter Movement	S	n-s	n-s	n-s	n-s	n-s	n-s	n-s	n-s
8. Soil Surface Resistance to Erosion	S,H,B	n-s	s-m	n-s	s-m	n-s	n-s	m	n-s
9. Soil Surface Loss or Degradation	S,H,B	s-m	s-m	s-m	n-s	n-s	n-s	s-m	n-s

ESDs in GIS		SCP 12-16	Loamy 11-13 MU197	ok	ok	ok	ok	Loamy 13-16	ok
Indicator	Indicator Type¹	051601-3A (1) 05S06W26 Loamy 11-13	051401-3A (2) 05S06W11 Loamy 13-16 (inclusion)	051401-2A (2) 05S06W11 SCP 11-13	052401-3A (2) 05S06W24 SCP 12-16	051701-4A (3) 04S05W31 Loamy 13-16	051701-3A (4) 05S05W6 Loamy 13-16	051701-1A (5) 05S05W3 SCP 12-16	051701-2A (5) 05S05W3 Loamy 13-16
10. Plant Community Comp. & Distribution Relative to Infiltration & Runoff	H	s-m	s-m	n-s	n-s	n-s	s-m	n-s	s-m
11. Compaction Layer	S,H,B	n-s	n-s	n-s	n-s	n-s	n-s	n-s	n-s
12. Functional/Structural Groups	B	s-m	m	s-m	m	s-m	m	s-m	m
13. Plant Mortality/Decadence	B	n-s	s-m	n-s	n-s	n-s	n-s	n-s	s-m
14. Litter Amount	H,B	n-s	n-s	n-s	s-m	n-s	n-s	n-s	n-s
15. Annual Production	B	n-s	n-s	n-s	n-s	n-s	n-s	n-s	n-s
16. Invasive Plants	B	m	s-m	s-m	m-e	n-s	s-m	m	m
17. Reproductive Capability of Perennial Plants	B	n-s	n-s	n-s	n-s	n-s	n-s	n-s	n-s

¹S = Soil/Site Stability Indicator, H = Hydrologic Function Indicator, B = Biotic Integrity Indicator

²Departures from reference conditions; n-s = none to slight, s-m = slight to moderate, m = moderate, m-e = moderate to extreme, e = extreme

Table D-20: 2012 Attribute Ratings for Rangeland Health Assessments for the Cow Creek allotment

Attribute	Attribute Rating							
	05S06W26	05S06W11	05S06W11	05S06W24	04S05W31	05S05W6	05S05W3	05S05W3
Soil/Site Stability (S)	n-s	s-m	n-s	n-s	n-s	n-s	m	n-s
Hydrologic Function (H)	s-m	s-m	n-s	n-s	n-s	s-m	s-m	n-s
Biotic Integrity (B)	n-s	s-m	n-s	s-m	n-s	s-m	n-s	s-m

Table D-21: 2012 Indicator Ratings² for Rangeland Health Assessments for the Madriaga Allotment

ESDs in GIS		SCP 11-13 MU16	ok	ok	Loamy 16+ MU92	ok	ok	SCP 12-16
Indicator	Indicator Type ¹	071703-3A (1) RH-1A 03S05W32 Loamy 12-16 (inclusion)	071703-2A (1) RH-1B 04S05W04 SCP 11-13	071703-1A (1) RH-1C 03S05W33 SCP 11-13	072903-1A (1) RH-1D 04S05W03 SCP 12-16 (inclusion)	072103-2A (2) RH-2A 04S06W11 SCP 11-13	072103-1A (2) RH-2B 04S06W11 SCP 12-16	072103-3A (2) RH-2C 04S06W11 Loamy 12-16
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	m	n-s	m-e	s-m	s-m
3. Pedestals/Terracettes	S,H	s-m	m	s-m	s-m	m-e	s-m	s-m
4. Bare Ground	S,H	s-m	n-s	s-m	n-s	s-m	n-s	n-s
5. Gullies	S,H	n-s	n-s	n-s	n-s	n-s	n-s	n-s
6. Wind Scoured, Blowouts and/or Depositions	S	n-s	n-s	n-s	n-s	n-s	n-s	n-s
7. Litter Movement	S	n-s	n-s	n-s	n-s	s-m	n-s	n-s
8. Soil Surface Resistance to Erosion	S,H,B	s-m	s-m	n-s	n-s	s-m	s-m	n-s
9. Soil Surface Loss or Degradation	S,H,B	s-m	s-m	s-m	s-m	s-m	s-m	s-m
10. Plant Community Comp. & Distribution Relative to Infiltration & Runoff	H	s-m	s-m	s-m	n-s	s-m	s-m	n-s
11. Compaction Layer	S,H,B	n-s	n-s	n-s	n-s	n-s	n-s	n-s
12. Functional/Structural Groups	B	s-m	m	m	n-s	s-m	s-m	s-m
13. Plant Mortality/Decadence	B	n-s	n-s	s-m	n-s	s-m	s-m	s-m
14. Litter Amount	H,B	s-m	s-m	s-m	n-s	s-m	n-s	n-s
15. Annual Production	B	n-s	s-m	n-s	n-s	n-s	n-s	n-s
16. Invasive Plants	B	m-e	m	m	s-m	s-m	m	s-m
17. Reproductive Capability of Perennial Plants	B	m-e	s-m	s-m	s-m	s-m	s-m	n-s

¹S = Soil/Site Stability Indicator, H = Hydrologic Function Indicator, B = Biotic Integrity Indicator

²Departures from reference conditions; n-s = none to slight, s-m = slight to moderate, m = moderate, m-e = moderate to extreme, e = extreme

Table D-22: 2012 Attribute Ratings for Rangeland Health Assessments for the Madriaga allotment

Attribute	Attribute Rating						
	03S05W3 2	04S05W0 4	03S05W3 3	04S05W0 3	04S06W1 1	04S06W1 1	04S06W1 1
Soil/Site Stability (S)	s-m	s-m	s-m	n-s	s-m	s-m	n-s
Hydrologic Function (H)	s-m	s-m	s-m	n-s	m	s-m	n-s
Biotic Integrity (B)	s-m	m	s-m	n-s	s-m	s-m	n-s

Table D-23: 2012 Indicator Ratings² for Rangeland Health Assessments for the Trout Creek/Lequerica, Chimney Pot, and Ferris FFR Allotments

ESDs in GIS		ok	Dry Meadow MU183	ok	SCP 11-13 MU16	SCP 12-16 MU166	ok
Indicator	Indicator Type ¹	Trout Ck./Lequerica 052401-1A (1) 05S05W05 Loamy 13-16	Trout Ck./Lequerica 052401-2A (2) 05S05W18 Loamy Bottom 12-16	Chimney Pot FFR 101801-1A 04S05W32 Loamy 13- 16	Ferris FFR 081803-2A (1) 04S05W09 SCP 12-16 (inclusion)	Ferris FFR 081803-1A (2) 04S06W12 Loamy 11-13 (inclusion)	Ferris FFR 081303-1A (3) 04S05W19 Loamy 13- 16
1. Rills	S,H	n-s	n-s	n-s	n-s	n-s	n-s
2. Water Flow Patterns	S,H	n-s	n-s	n-s	m	s-m	m
3. Pedestals/Terracettes	S,H	n-s	n-s	n-s	s-m	s-m	s-m
4. Bare Ground	S,H	n-s	s-m	n-s	n-s	n-s	s-m
5. Gullies	S,H	n-s	n-s	n-s	n-s	n-s	n-s
6. Wind Scoured, Blowouts and/or Depositions	S	n-s	n-s	n-s	n-s	n-s	n-s
7. Litter Movement	S	n-s	n-s	n-s	n-s	n-s	n-s
8. Soil Surface Resistance to Erosion	S,H,B	n-s	s-m	n-s	n-s	n-s	n-s
9. Soil Surface Loss or Degradation	S,H,B	n-s	s-m	n-s	s-m	s-m	s-m
10. Plant Community Comp. & Distribution Relative to Infiltration & Runoff	H	n-s	s-m	n-s	s-m	n-s	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	s-m	m	n-s	s-m	s-m	m-e
13. Plant Mortality/Decadence	B	n-s	m	n-s	s-m	n-s	n-s

ESDs in GIS		ok	Dry Meadow MU183	ok	SCP 11-13 MU16	SCP 12-16 MU166	ok
Indicator	Indicator Type¹	Trout Ck./Lequerica 052401-1A (1) 05S05W05 Loamy 13-16	Trout Ck./Lequerica 052401-2A (2) 05S05W18 Loamy Bottom 12-16	Chimney Pot FFR 101801-1A 04S05W32 Loamy 13- 16	Ferris FFR 081803-2A (1) 04S05W09 SCP 12-16 (inclusion)	Ferris FFR 081803-1A (2) 04S06W12 Loamy 11-13 (inclusion)	Ferris FFR 081303-1A (3) 04S05W19 Loamy 13- 16
14. Litter Amount	H,B	n-s	s-m	n-s	s-m	n-s	s-m
15. Annual Production	B	n-s	n-s	n-s	n-s	n-s	n-s
16. Invasive Plants	B	m-e	m	s-m	m-e	m	m-e
17. Reproductive Capability of Perennial Plants	B	n-s	n-s	n-s	s-m	n-s	m

¹S = Soil/Site Stability Indicator, H = Hydrologic Function Indicator, B = Biotic Integrity Indicator

²Departures from reference conditions; n-s = none to slight, s-m = slight to moderate, m = moderate, m-e = moderate to extreme, e = extreme

Table D-24: 2012 Attribute Ratings for Rangeland Health Assessments for the Trout Creek/Lequerica, Chimney Pot FFR, and Ferris FFR Allotments

Attribute	Attribute Rating					
	05S05W0 5	05S05W18	04S05W32	04S05W09	04S06W12	04S05W19
Soil/Site Stability (S)	n-s	s-m	n-s	s-m	n-s	s-m
Hydrologic Function (H)	n-s	s-m	n-s	s-m	n-s	s-m
Biotic Integrity (B)	s-m	s-m	n-s	m	n-s	m

Table D-25: 2012 Indicator Ratings² for Rangeland Health Assessments for the Joint Allotment

ESDs in GIS		SCP 11-13	SCP 11-13	SCP 11-13	ok	SCP 11-13	SCP 12-16 MU166	ok
Indicator	Indicator Type¹	081803-4A (5) 04S05W06 Loamy 12-16	071503-3A (2) 04S06W14 Loamy 13-16	081103-1A (2) 04S05W18 Loamy 13-16	081103-2A (3) 04S06W12 SCP 12-16	081803-3A (3) 04S05W07 Loamy 13-16	073003-2A (3) 04S05W09 Loamy 13-16 (inclusion)	081203-2A (4) 04S05W22 Loamy 13- 16*

ESDs in GIS		SCP 11-13	SCP 11-13	SCP 11-13	ok	SCP 11-13	SCP 12-16 MU166	ok
Indicator	Indicator Type¹	081803-4A (5) 04S05W06 Loamy 12-16	071503-3A (2) 04S06W14 Loamy 13-16	081103-1A (2) 04S05W18 Loamy 13-16	081103-2A (3) 04S06W12 SCP 12-16	081803-3A (3) 04S05W07 Loamy 13-16	073003-2A (3) 04S05W09 Loamy 13-16 (inclusion)	081203-2A (4) 04S05W22 Loamy 13- 16*
1. Rills	S,H	n-s	n-s	n-s	n-s	n-s	n-s	n-s
2. Water Flow Patterns	S,H	m	m	m-e	m-e	m-e	s-m	m
3. Pedestals/Terracettes	S,H	n-s	m-e	m	m	m	s-m	m
4. Bare Ground	S,H	n-s	s-m	m	n-s	m	m	s-m
5. Gullies	S,H	n-s	n-s	n-s	n-s	n-s	n-s	n-s
6. Wind Scoured, Blowouts and/or Depositions	S	n-s	n-s	n-s	n-s	n-s	n-s	n-s
7. Litter Movement	S	n-s	s-m	s-m	n-s	s-m	s-m	n-s
8. Soil Surface Resistance to Erosion	S,H,B	s-m	s-m	s-m	s-m	m	m	s-m
9. Soil Surface Loss or Degradation	S,H,B	s-m	m	s-m	m	m	m	s-m
10. Plant Community Comp. & Distribution Relative to Infiltration & Runoff	H	m	m	s-m	m	m	s-m	s-m
11. Compaction Layer	S,H,B	n-s	n-s	n-s	n-s	n-s	s-m	n-s
12. Functional/Structural Groups	B	m-e	s-m	s-m	m	s-m	s-m	s-m
13. Plant Mortality/Decadence	B	s-m	m	n-s	s-m	m	s-m	s-m
14. Litter Amount	H,B	n-s	s-m	s-m	n-s	m-e	m	m
15. Annual Production	B	n-s	n-s	n-s	n-s	s-m	n-s	n-s
16. Invasive Plants	B	e	s-m	m-e	m-e	s-m	n-s	m
17. Reproductive Capability of Perennial Plants	B	s-m	n-s	n-s	m	s-m	n-s	m

¹S = Soil/Site Stability Indicator, H = Hydrologic Function Indicator, B = Biotic Integrity Indicator

²Departures from reference conditions; n-s = none to slight, s-m = slight to moderate, m = moderate, m-e = moderate to extreme, e = extreme

*site is excluded from evaluation since it was burned in 2006 Chubby Spain fire.

Table D-26: 2012 Attribute Ratings for Rangeland Health Assessments for the Joint Allotment

Attribute	Attribute Rating						
	04S05W 06	04S05W0 6	04S05W 18	04S06W1 2	04S05W0 7	04S05W0 9	04S05W22
Soil/Site Stability (S)	s-m	m	s-m	m	m	m	s-m
Hydrologic Function (H)	s-m	m	m	m	m	m	s-m
Biotic Integrity (B)	m	s-m	s-m	m	m	m	m

Table D-27: 2012 Indicator Ratings² for Rangeland Health Assessments for the Soda Creek Allotment

ESDs in GIS		Loamy 13-16	Loamy 13-16	ok	ok	Loamy 16+	ok	ok	Loamy 16+ MU122
Indicator	Indicator Type	080503-1A (3) 04S05W27 SCP 11-13* (inclusion)	080703-1A (1) 04S05W35 Loamy 16+	081203-1A (3) 04S05W22 Loamy 13-16*	080603-1A (2) 04S05W12 Loamy 16+	080603-2A (3) 04S05W14 Loamy 13-16	080603-3A (3) 04S05W13 Loamy 13-16	080503-2A (3) 04S05W24 Loamy 13-16*	080503-3A (3) 04S04W18 Mountain brush 18-22 (inclusion)
1. Rills	S,H	n-s	n-s	n-s	n-s	n-s	n-s	n-s	n-s
2. Water Flow Patterns	S,H	m	n-s	m-e	m	m	s-m	s-m	s-m
3. Pedestals/Terracettes	S,H	s-m	n-s	m	m	m	n-s	n-s	n-s
4. Bare Ground	S,H	s-m	n-s	n-s	s-m	s-m	s-m	n-s	s-m
5. Gullies	S,H	n-s	n-s	n-s	n-s	n-s	n-s	n-s	n-s
6. Wind Scoured, Blowouts and/or Depositions	S	n-s	n-s	n-s	n-s	n-s	n-s	n-s	n-s
7. Litter Movement	S	n-s	n-s	n-s	s-m	n-s	n-s	n-s	n-s
8. Soil Surface Resistance to Erosion	S,H,B	n-s	n-s	n-s	s-m	s-m	n-s	n-s	s-m
9. Soil Surface Loss or Degradation	S,H,B	s-m	n-s	s-m	s-m	s-m	n-s	n-s	s-m

ESDs in GIS		Loamy 13-16	Loamy 13-16	ok	ok	Loamy 16+	ok	ok	Loamy 16+ MU122
Indicator	Indicator Type	080503-1A (3) 04S05W27 SCP 11-13* (inclusion)	080703-1A (1) 04S05W35 Loamy 16+	081203-1A (3) 04S05W22 Loamy 13-16*	080603-1A (2) 04S05W12 Loamy 16+	080603-2A (3) 04S05W14 Loamy 13-16	080603-3A (3) 04S05W13 Loamy 13-16	080503-2A (3) 04S05W24 Loamy 13-16*	080503-3A (3) 04S04W18 Mountain brush 18-22 (inclusion)
10. Plant Community Comp. & Distribution Relative to Infiltration & Runoff	H	s-m	n-s	n-s	s-m	s-m	n-s	n-s	n-s
11. Compaction Layer	S,H,B	n-s	n-s	n-s	n-s	n-s	n-s	n-s	n-s
12. Functional/Structural Groups	B	s-m	s-m	s-m	s-m	s-m	m	s-m	s-m
13. Plant Mortality/Decadence	B	n-s	n-s	s-m	n-s	n-s	n-s	s-m	n-s
14. Litter Amount	H,B	n-s	n-s	n-s	s-m	s-m	m	s-m	s-m
15. Annual Production	B	n-s	n-s	n-s	n-s	n-s	n-s	n-s	n-s
16. Invasive Plants	B	m	m-e	m-e	m-e	m-e	e	s-m	s-m
17. Reproductive Capability of Perennial Plants	B	n-s	s-m	n-s	s-m	s-m	s-m	s-m	n-s

¹S = Soil/Site Stability Indicator, H = Hydrologic Function Indicator, B = Biotic Integrity Indicator

²Departures from reference conditions; n-s = none to slight, s-m = slight to moderate, m = moderate, m-e = moderate to extreme, e = extreme

*site is excluded from evaluation since it was burned in 2006 Chubby Spain fire.

Table D-28: 2012 Attribute Ratings for Rangeland Health Assessments for the Soda Creek Allotment

Attribute	Attribute Rating							
	04S05W27	04S05W35	04S05W22	04S05W12	04S05W14	04S05W13	04S05W24	04S04W18
Soil/Site Stability (S)	s-m	n-s	s-m	s-m	s-m	s-m	n-s	s-m
Hydrologic Function (H)	s-m	n-s	s-m	s-m	s-m	s-m	n-s	s-m
Biotic Integrity (B)	s-m	s-m	s-m	s-m	m	m-e	s-m	s-m

Appendix E: Census Data For Herd Management Areas Hardtrigger and Sands Basin.

Summary of Boise District Office wild horse aerial survey flight data between 1990-2012 for the Hardtrigger and Sands Basin HMAs

Year	Hardtrigger AML 98 Range (66-130)	Sands Basin AML 49 Range (33-64)
2012	130 ¹	65 ²
2011	ND	ND
2010	*113	ND
2009 (July)	91	*122
2008 (June)	ND	100
2007 (Mar.)	*287	ND
2006 (Sept.)	ND	64
2004	ND	ND
2003	*89	*52
2002	118	54
2001	75	37
2000	*85	*62
1999	56	48
1998	42	47
1997	*125 ³	*70 ³
1996	ND	ND
1995	62	52
1994	*135	41
1993	110 ³	36
1992	58	24
1991	*112	*34
1990	ND	ND

¹2012 wild horse numbers estimated using a 14% annual herd growth rate.

²2012 wild horse numbers estimated using a 20% annual herd growth rate.

³Survey numbers based on adult horses only (observations during aerial flights of horses generally greater than 11 months in age and not with a wet mare).

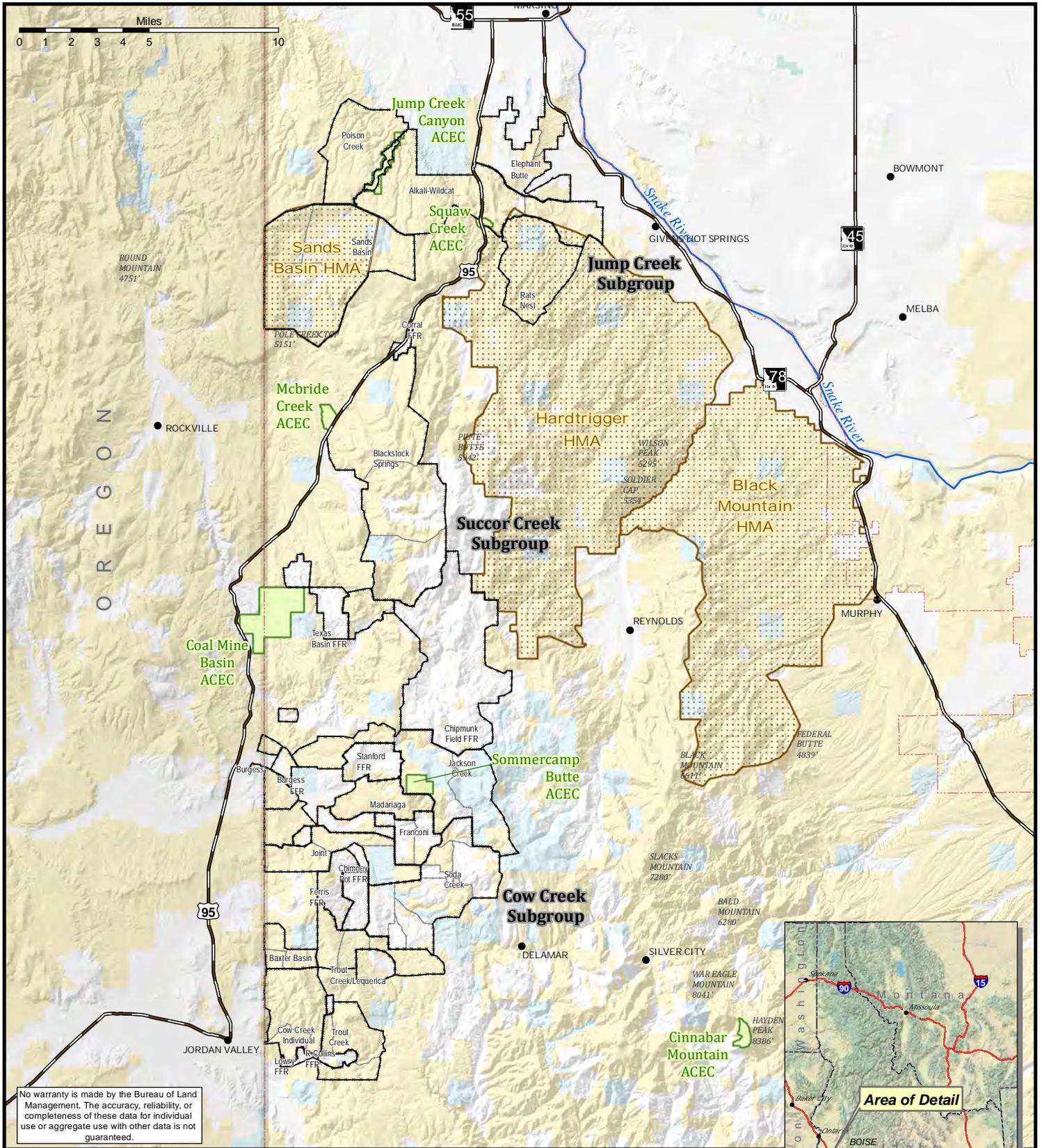
* Horses were gathered from this HMA during the calendar year.

ND = No Survey Data for these years.

Maps



Map ACEC-1, Areas of Critical Environmental Concern and Wild Horse Herd Management Areas, Chipmunk Group and Vicinity



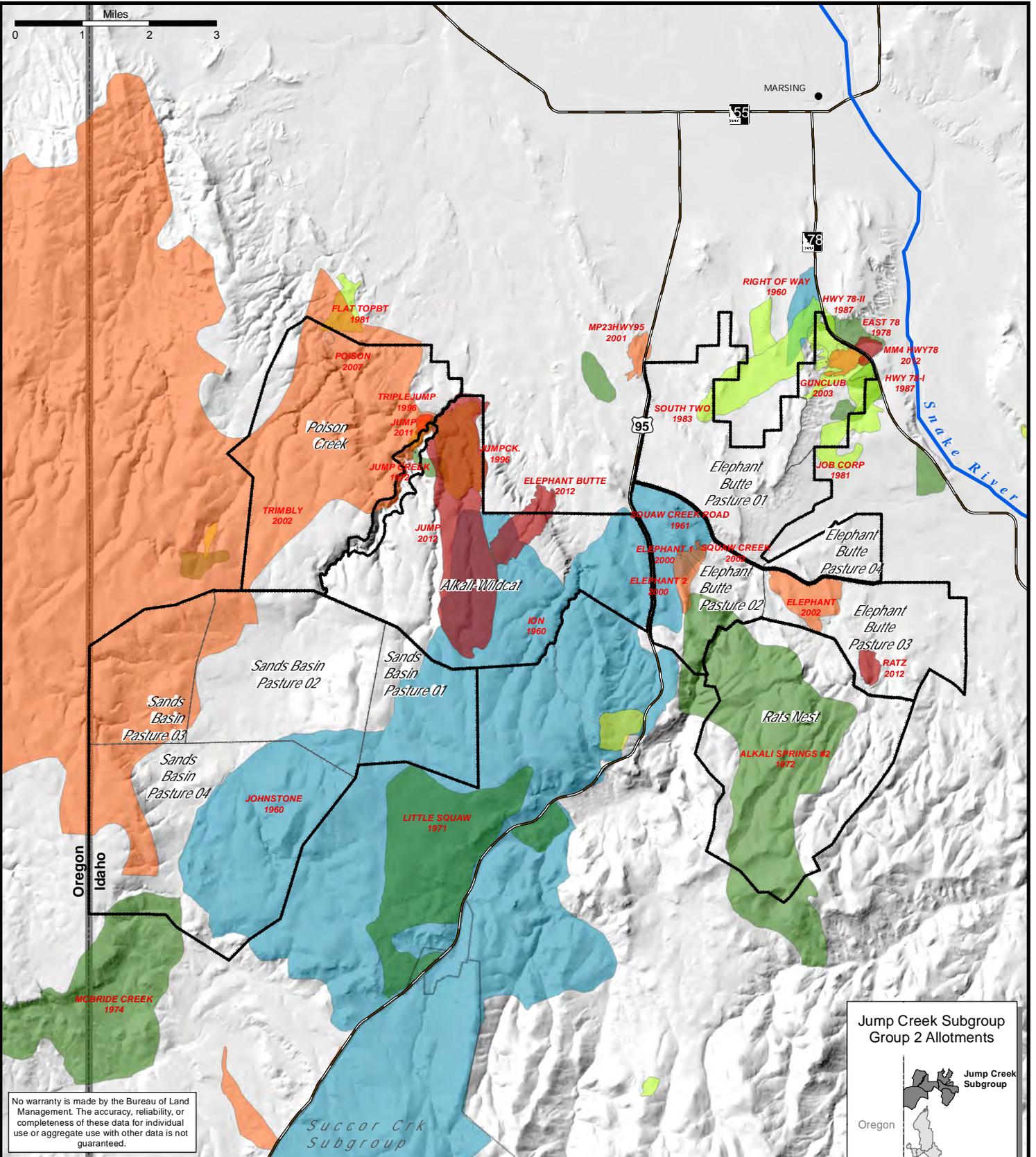
No warranty is made by the Bureau of Land Management. The accuracy, reliability, or completeness of these data for individual use or aggregate use with other data is not guaranteed.

- | | | |
|------------------------------|--------------------|----------------------------------|
| ACEC Boundary | Allotment Boundary | Surface Management Agency |
| Wild Horse HMA Boundary | Pasture Boundary | Bureau of Land Management |
| Owyhee Field Office Boundary | Highway | Private |
| | | State |

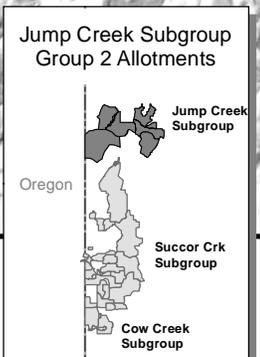




Map FIRE 1, Fire History, Jump Creek Subgroup

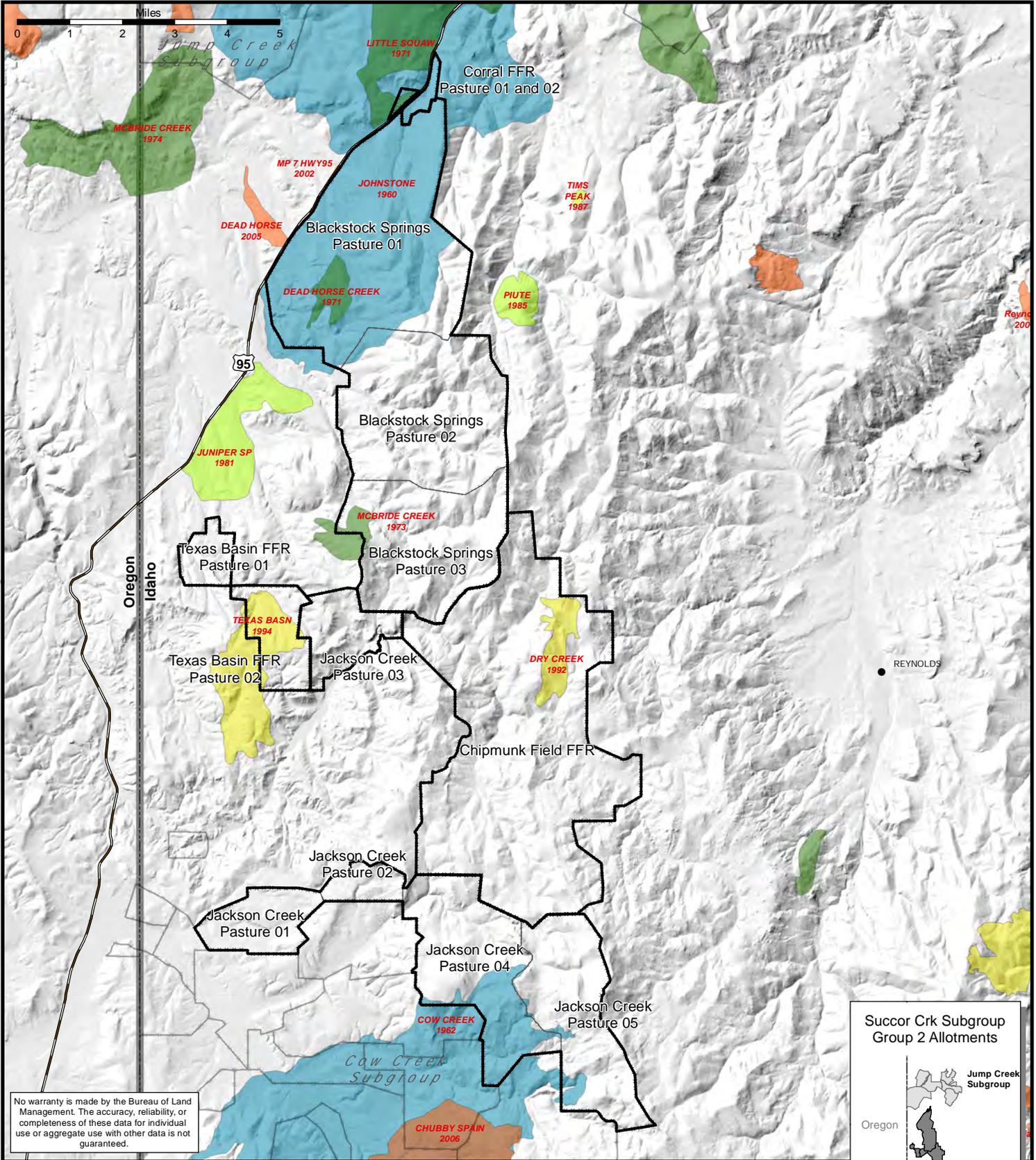


No warranty is made by the Bureau of Land Management. The accuracy, reliability, or completeness of these data for individual use or aggregate use with other data is not guaranteed.





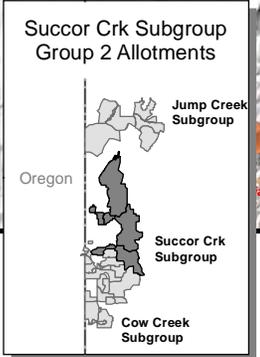
Map FIRE 2, Fire History, Succor Creek Subgroup



No warranty is made by the Bureau of Land Management. The accuracy, reliability, or completeness of these data for individual use or aggregate use with other data is not guaranteed.

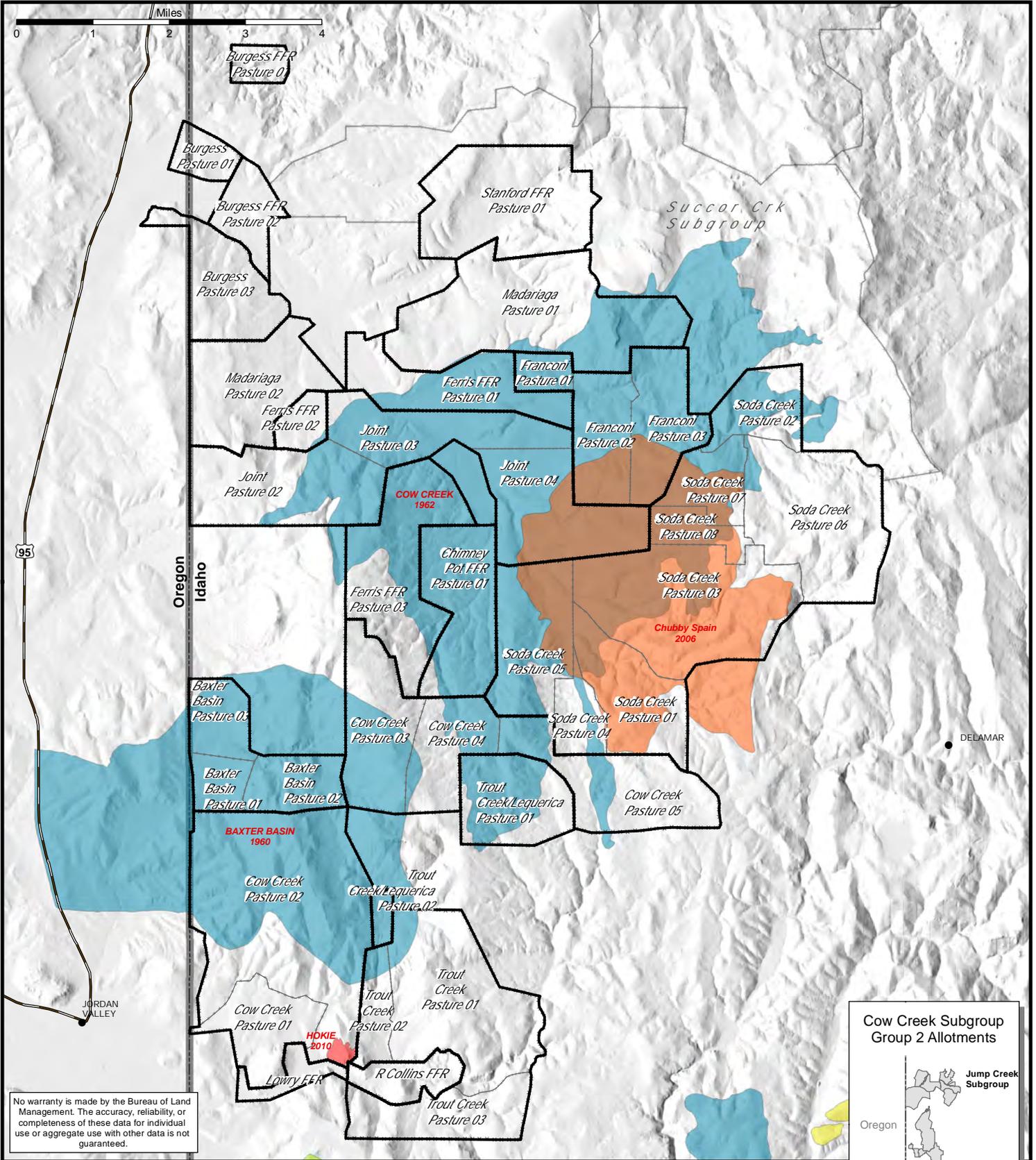
Fire Perimeters by Decade

- | | | |
|---|---|--|
| 2012 Activity | 1980-1989 | Allotment Boundary |
| 2010-2011 | 1970-1979 | Pasture Boundary |
| 2000-2009 | 1960-1969 | Highway |
| 1990-1999 | | Town/City |





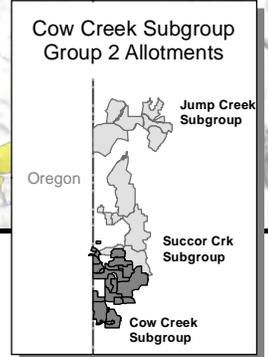
Map FIRE-3, Fire History, Cow Creek Subgroup



No warranty is made by the Bureau of Land Management. The accuracy, reliability, or completeness of these data for individual use or aggregate use with other data is not guaranteed.

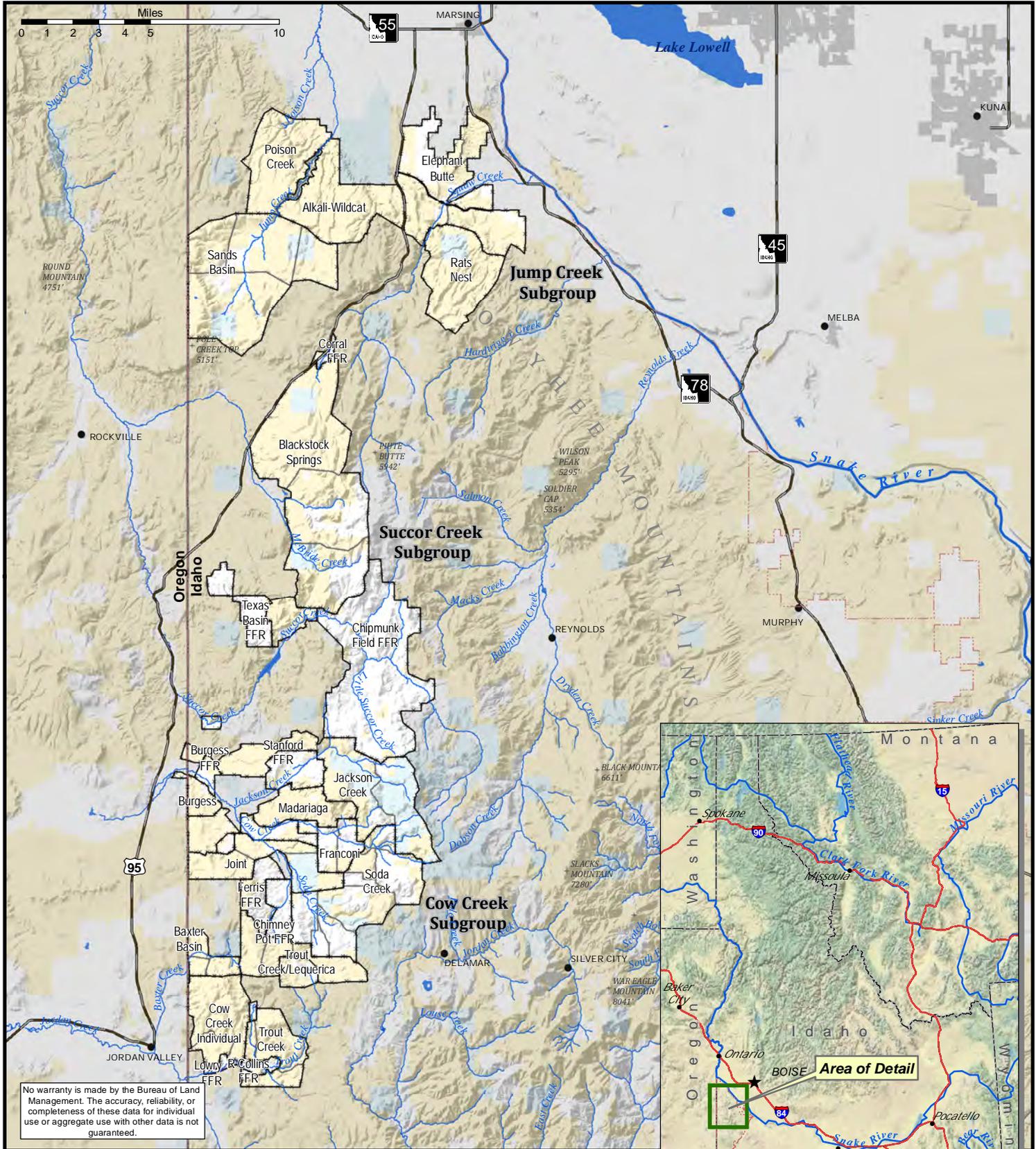
Fire Perimeters by Decade

- | | | |
|---------------|-----------|--------------------|
| 2012 Activity | 1980-1989 | Allotment Boundary |
| 2010-2011 | 1970-1979 | Pasture Boundary |
| 2000-2009 | 1960-1969 | Highway |
| 1990-1999 | | Town/City |





Map GEN-1, Chipmunk Group Allotments



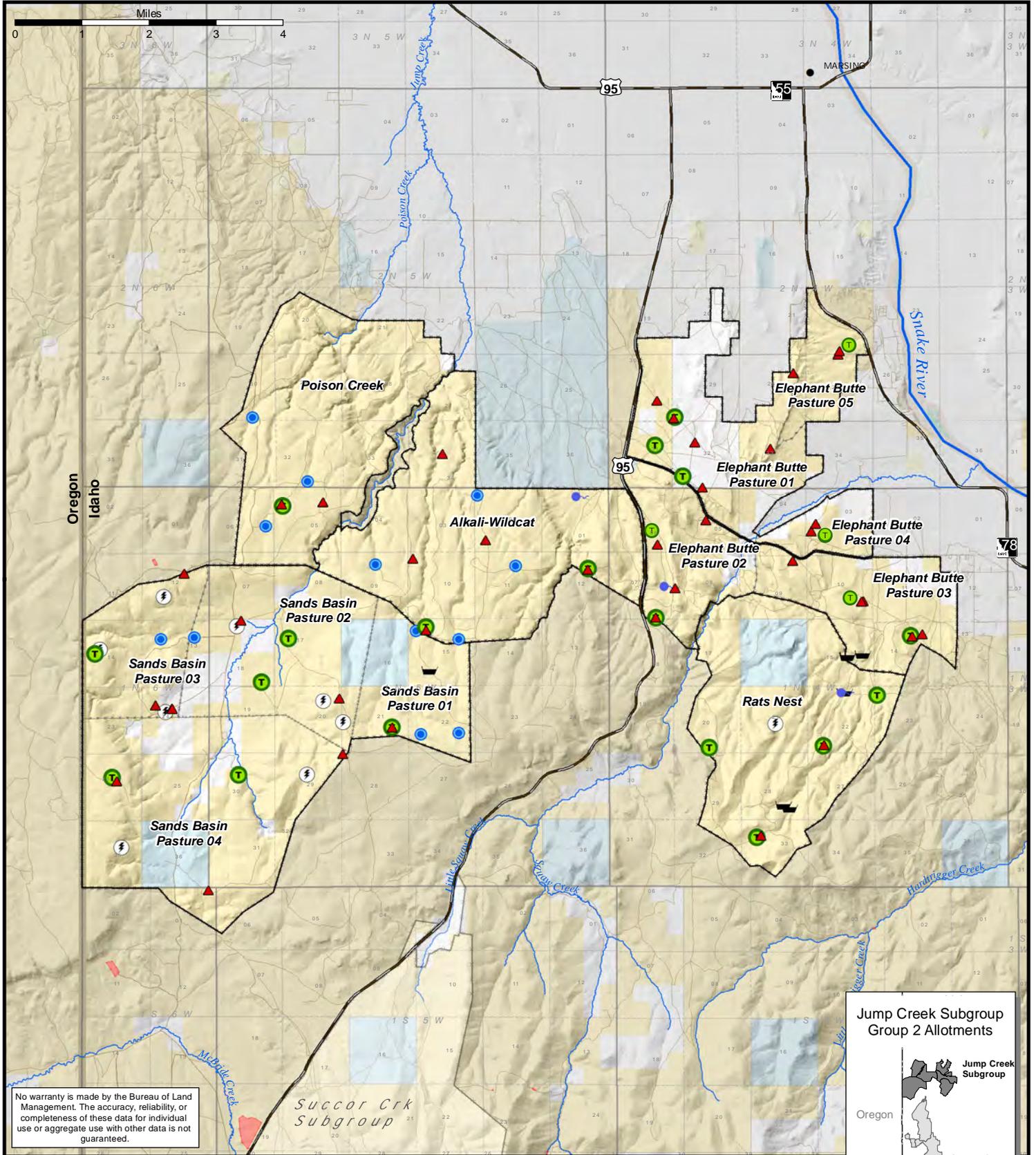
No warranty is made by the Bureau of Land Management. The accuracy, reliability, or completeness of these data for individual use or aggregate use with other data is not guaranteed.

Legend

- | | | |
|--------------------|------------------------------|----------------------------------|
| Allotment Boundary | Highway | Surface Management Agency |
| Pasture Boundary | Town/City | Bureau of Land Management |
| River | Urban Area | Private |
| Perennial Stream | Owyhee Field Office Boundary | State |



Map RNGE-1, Range Resources, Jump Creek Subgroup



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Monitoring

- Nested Plot Frequency Trend
- Photo Point
- RHA Point

Range Improvements

- Reservoir
- Spring
- Trough
- Enclosure

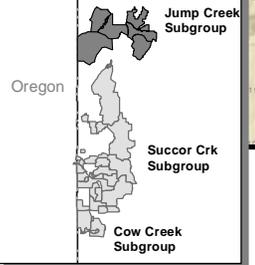
Allotment Boundary

- Allotment Boundary
- Pasture Boundary
- Highway
- Road
- Perennial Stream

Surface Management Agency

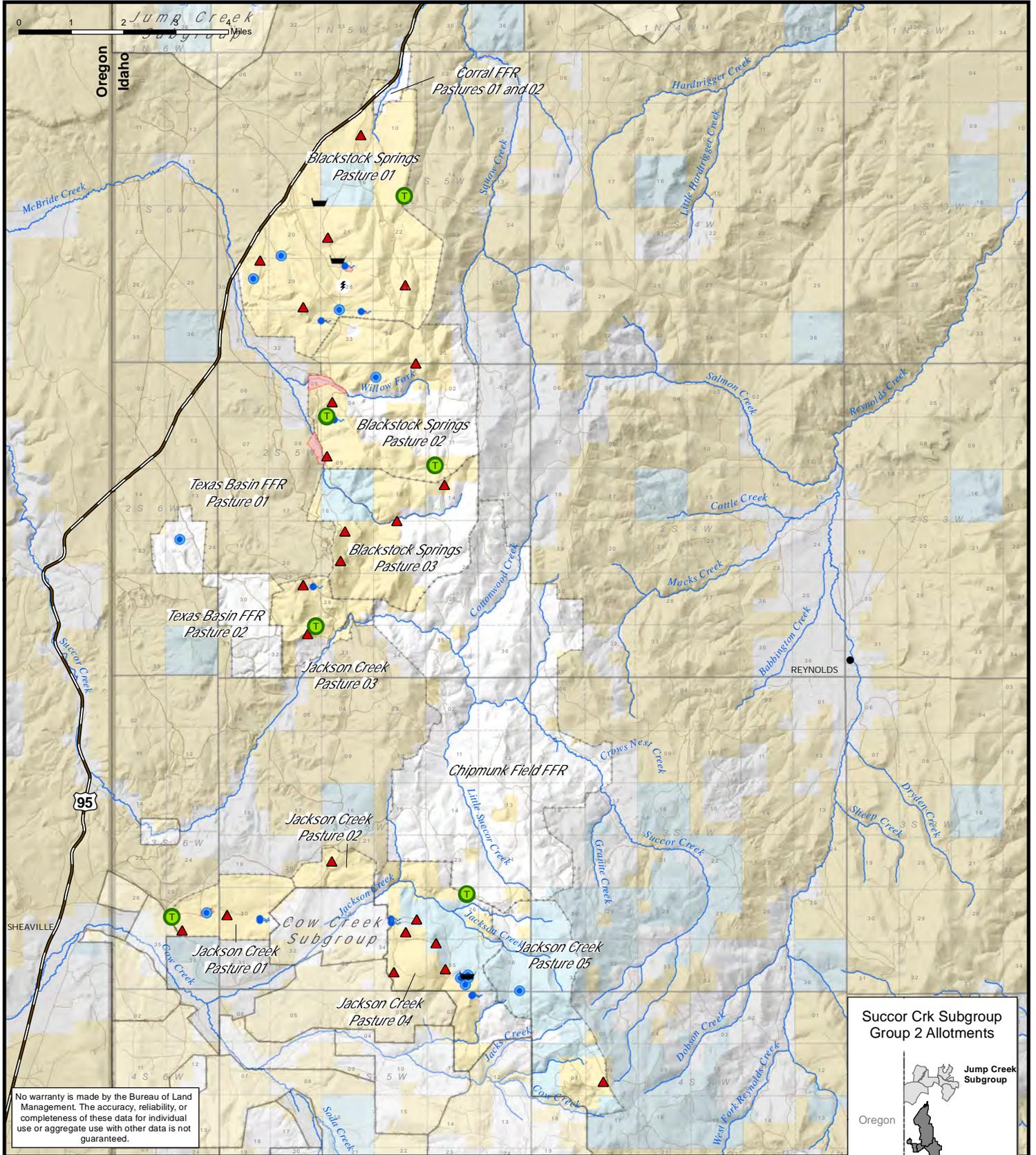
- BLM
- State
- Private

Jump Creek Subgroup Group 2 Allotments





Map RANGE 2, Range Resources, Succor Creek Subgroup



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Monitoring

- Nested Plot Frequency Trend
- Photo Point
- RHA Point

Range Improvements

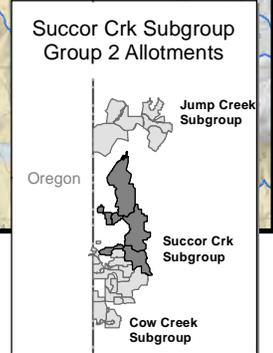
- Reservoir
- Spring
- Trough

Allotment Boundary

- Allotment Boundary
- Pasture Boundary
- Highway
- Road
- Perennial Stream

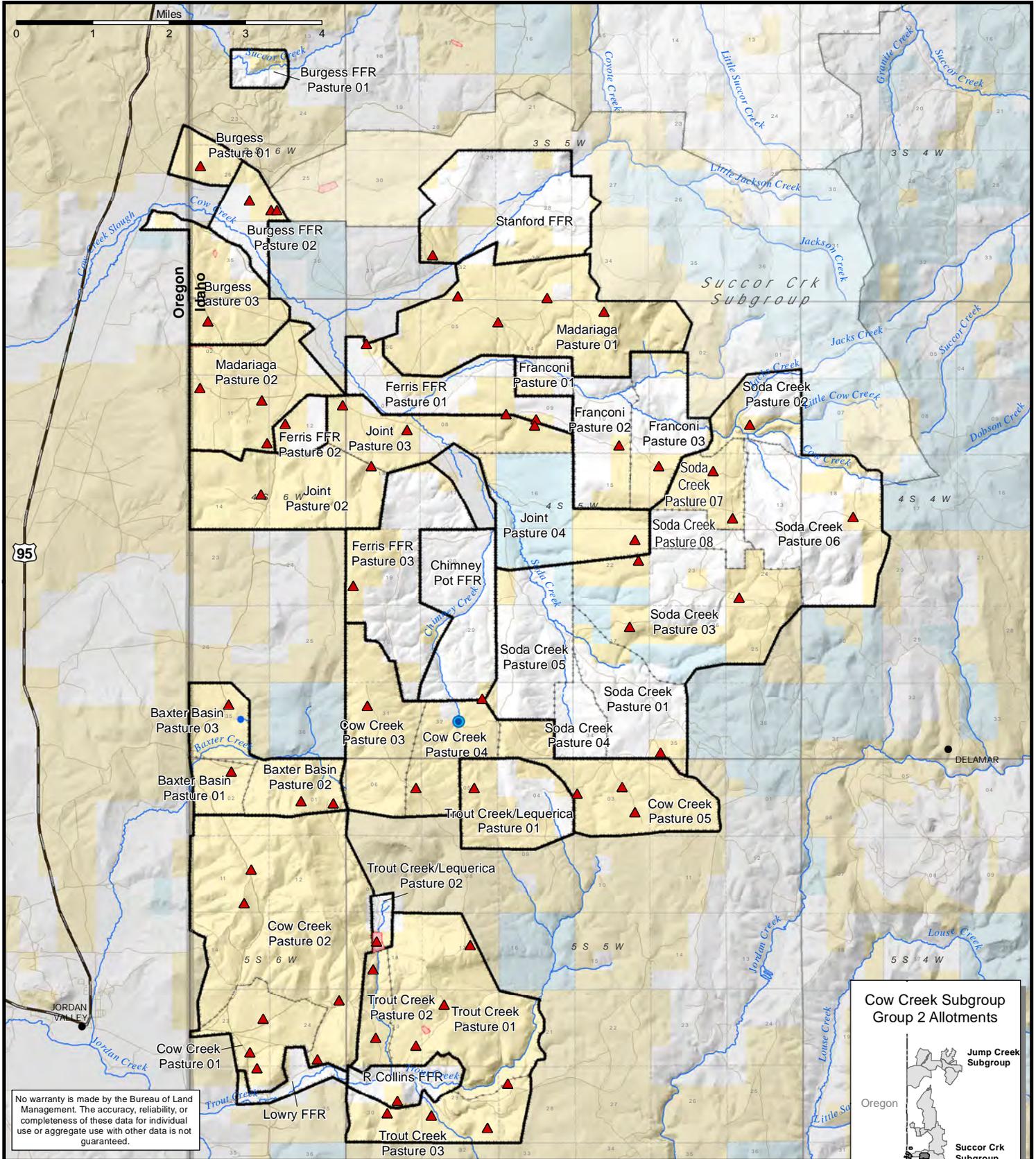
Surface Management Agency

- BLM
- State
- Private





Map RNGE-3, Range Resources, Cow Creek Subgroup



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Monitoring

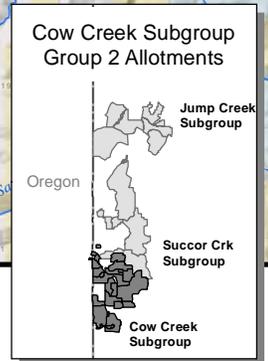
- Nested Plot Frequency Trend
- Photo Point
- RHA Point

Range Improvements

- Reservoir
- Spring
- Trough
- Enclosure/Corral
- Allotment Boundary
- Pasture Boundary
- Highway
- Road
- Perennial Stream

Surface Management Agency

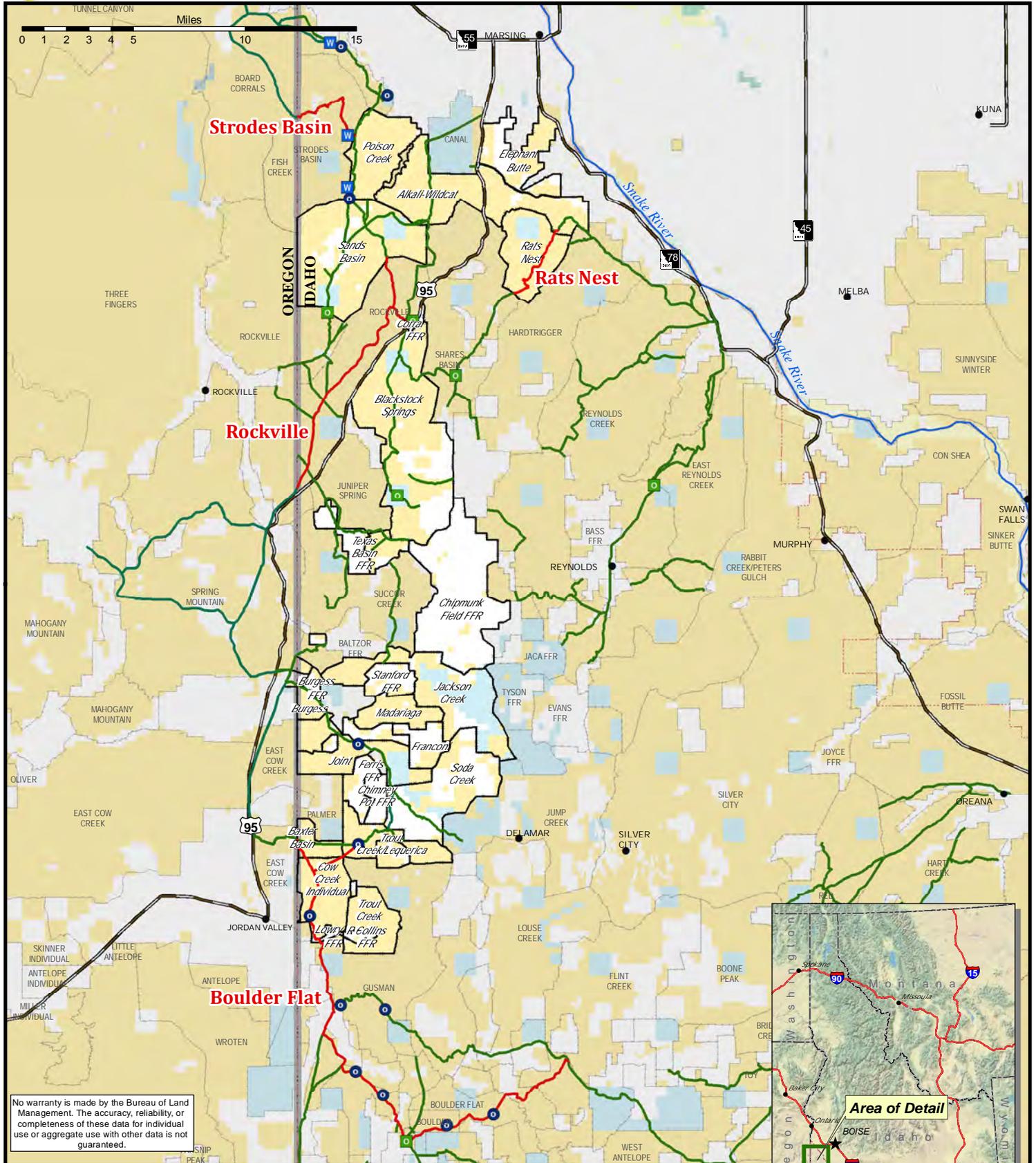
- BLM
- State
- Private



1:110,000



Map RNGE-4, Trailing, Chipmunk Group and Vicinity



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- | | | |
|-----------------------------|------------------------------|----------------------------------|
| Trailing EA Analyzed Routes | Owyhee Field Office Boundary | Surface Management Agency |
| New Routes Analyzed | Group 2 Allotment Boundary | Bureau of Land Management |
| Sheep Overnight Site | Other Allotment Boundary | Private |
| Water Haul Site | | State |
| Highway | | |

