

EVALUATION REPORT

Achieving the Idaho Standards for Rangeland Health

Field Office: **Bruneau (ID 120)**

Evaluation Date(s): **May 18, 2015**

Grazing Allotment Name/Number: **Big Springs 0803 – Sierra Del Rio Use Area**

Name of Permittee(s): **Sierra Del Rio**

Introduction

The Idaho Standards for Rangeland Health and Guidelines for Livestock Grazing Management (Standards and Guidelines) is a suite of management goals used to maintain or improve resources, protect cultural resources and sensitive habitat, and sustain productivity of rangelands. This document provides the evaluation of information presented in the rangeland health assessment (i.e., resource conditions and trends) and indicates whether or not Standards are being achieved. This document also provides a rationale for each evaluation outcome and preliminary finding of causal factors affecting conditions where Standards may not be met.

If one or more Standards are not being met, the BLM will prepare a Determination. Once signed, the Determination is the official document identifying the causal factors for not meeting Standards. The Determination also identifies where there is non-conformance with the Guidelines, if any. The Determination will be prepared concurrently with (or may precede) the grazing permit renewal environmental assessment; which is valuable in the development of grazing management strategies to meet or make progress toward meeting Standards and conform to Guidelines.

Alternative management will be analyzed wherever it is determined that:

- specific grazing allotments are not meeting the Standards
- allotments are meeting the Standards but have site specific concerns
- there are other documented resource concerns or opportunities for improvement/restoration

Applicable Standards

Standards 1 (Watersheds), 2 (Riparian Areas and Wetlands), 3 (Stream Channel and Floodplain), 4 (Native Plant Communities), 7 (Water Quality), and 8 (Threatened and Endangered Plants and Animals) are applicable to the Sierra Del Rio Use Area (SDR) of the Big Springs Allotment.

Standard 1: Watersheds

Desired Conditions

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.

The management objectives identified in the Bruneau MFP identify the need to maintain stability of 660,000 acres of moderate, high, and critical erosion hazard classes by reducing or minimizing wind and water erosion. The moderate erosion class includes all of the Big Springs Allotment. The MFP states that erosion will be minimized by maintaining good perennial vegetation cover where it exists and by establishing perennial vegetation cover where feasible and economical. If establishment is not feasible/economical, then manage to achieve stable watershed conditions. To achieve these decisions, livestock management would maintain or improve existing perennial forage plants by not allocating more than 50% of vegetation for consumptive use, adjusting season of use, implementing grazing systems and associated projects, and providing for proper timing with regard to soil moisture content.

Synopsis of Assessment Findings

Pasture 7: The 2004 data indicated an overall slight to moderate departure as a whole for the site stability and watershed function-related Indicators.

Pasture 7N: The 2004 data indicated none to a slight departure as a whole for the site stability and watershed function-related Indicators. Two re-evaluated stands (Claypan 10S03W24, Loamy 10S03W12A) showed little departure from reference condition in 2012. In Pasture 7N, trend data from 1983 through 2012 indicated a fluctuating but generally static trend in live vegetation basal cover at both study sites. Both reached their lowest values in 1995 and in 2000 after periods of below-normal crop year precipitation. The Stony Clayey stand (10S02W07) had high rock cover, low (<2%) basal cover of increaser grasses. A static trend in desirable components is acceptable in stands such as this that have reached their potential composition and cover, although temporal variability may still occur. At 10S02W29A, live vegetation reached its highest values in 1987 and 2012 after periods of above normal crop year precipitation. Bare ground was lowest and biological soil crusts were highest at both in 2012, reflecting in part favorable growth conditions during recent years.

Pasture 7NC: A Claypan stand in Pasture 7NC showed slight to moderate departure from reference condition in 2012.

Pasture 7S: The 2004 data indicated slight to moderate departure as a whole for site stability and watershed function-related Indicators. The Loamy and one of two low mound Claypan (12S02W05) stands exhibited greater departure from reference condition than others. The Loamy stand was

reevaluated in 2012 and showed less (slight to moderate) departure from reference condition. While not formally re-evaluated, the low mound inclusions between Blue Creek Reservoir and the Indian Crossing base property showed lower composition of decreaser grasses in 2012 than at the trend study. In Pasture 7S, trend data indicated a fluctuating but generally declining trend in bare ground and generally static trend in non-persistent litter from 1983 through 2012. Biological soil crusts increased markedly. Growth conditions in several previous years were good, but lack of snowpack and spring and summer precipitation in 2012 strongly reduced regrowth after grazing in that year.

Evaluation Finding – Pastures 7N, 7NC, 7, 7S are:

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

Rationale for Evaluation Finding

Standard 1 is Meeting the Standard for all pastures because conditions generally represent a watershed that is providing for the proper infiltration, retention, and release of water appropriate to desired conditions related to the watershed's inherent capacity. Indicators used to reach this conclusion included the amount and distribution of ground cover; the lack of erosional evidence and/or impacts to the soil characteristics usually illustrated by rills or gullies, pedestalling, physical soil crusts, and compaction layers.

Specifically, the data showed little departure from reference condition for indicators that contribute to watershed health such as basal cover of grasses and amount of bare ground. Active pedestalling did occur but was considered slight at most. In Pasture 7N, nearly all of the 2004 evaluations showed little departure from reference condition even if not stated to be in reference condition on the worksheets. The new evaluation area in Pasture 7NC also showed only slight active pedestalling in the portion of the Claypan stand dominated by increaser grasses.

In Pasture 7, the Loamy evaluation showed the effects of both utilization and of temporal variation in biomass of decreaser species. Both typically grazed and ungrazed areas showed the same pattern throughout the SDR Use Area and in other Use Areas. 2004 was at the end of an extended period of below-normal precipitation, while 2005 and 2006 and 2009 through 2011 had favorable precipitation during the spring and summer months. Consequently, bunchgrass vigor, mortality (crown die-out), available biomass, amount of bare ground, and other characteristics differed greatly from 2004, when the RHE and trend data were collected for the original Assessment. Evaluations are a one-point-in-time judgment, which influences some indicators at the time of evaluation more than others. While the Churning Clay re-evaluation was given a moderate departure rating in 2012, hummocking is part of the natural site processes and Nevada bluegrass was also still dominant. This ecological site occupies part of the Indian Lake playa and small inclusions elsewhere and does not exceed 2% of this pasture. In Pasture 7S, the area represented by the Loamy reevaluation showed acceptable departure from reference condition in 2012, and was a substantial part of the area that was the basis for the judgment in the 2011 Evaluation that Standard 1 was not met on 20% of the area. The area of low mound Claypan evaluations that formed the remaining basis for that judgment still appeared to have fewer and smaller decreaser

grasses than the low mound trend study in 2010 and 2012 based upon visual inspection only. However, this area, located between Blue Creek Reservoir and the Indian Crossing base property comprised less than 5% of this pasture.

This allotment lies within the Upper Owyhee Watershed which covers 1.37 million acres. The Big Springs Allotment comprises 15% of the watershed. Sierra Del Rio pastures account for 43,654 acres or 23% of the allotment and 3% of the watershed area. Rangeland Health Assessments have been performed on all dominant ecological sites in all the pastures within the Sierra Del Rio Use Area since 1999. The data collected within the allotment adequately represents the entire area managed by Sierra Del Rio. This information also represents at least 4 field tours with the permittee, at least 3 different field visits per stream for PFC assessments, professional observations, and other relevant documentation gathered between 1999 and present.

Information Sources

Bruneau Management Framework Plan, 1983

Bruneau Rangeland Program Summary, 1983

Ecological Site Description and Reference Sheet, Clayey 12-16 ARARL/FEID, 2014

Ecological Site Description and Reference Sheet, Churning Clay 12-16 ARCA13/POA, 2014

Ecological Site Description, Stony Clayey 12-16 ARARL/FEID, 1981

Ecological Site Description and Reference Sheet, Claypan 12-16 ARAR8/FEID, 2014

Ecological Site Description and Reference Sheet, Loamy 11-13 ARTRT/PSSPS, 2006

Standard 2. Riparian Vegetation and Wetlands

Desired Conditions

Proper Functioning Condition (PFC) assessments, field notes, aerial imagery, photographs, and other observations gather between 1995 and 2014 were used to evaluate the riparian areas, wetlands and stream channel/floodplain standards. Indicators used for evaluation of Standard 2 for riparian systems within the Big Springs Allotment are riparian vegetative structure and function, age class and structural diversity of riparian vegetation, and if noxious weeds are present they are not increasing. Riparian areas are in proper functioning condition appropriate to soil type, climate, geology, and landform to provide for proper nutrient cycling, and energy flow. The allotment size (187,825 acres) required that the interdisciplinary team utilize a representative sample of conditions to guide conclusions within this evaluation. PFC assessments were completed on at least 3 different occasions at most streams from 1995 to 2014 assessing a total of 39.7 miles

The Bruneau MFP established the following objectives for native plant communities:

- WL 6: Manage all meadows and riparian habitat ... to obtain a maximum diversity of vegetative species in order to provide for a maximum diversity and optimum abundance of wildlife species.
- WL 4.3: Manage springs, seeps, and meadows and adjacent upland areas as key wildlife habitats for upland game. Specifically: Control livestock grazing on these habitats by the implementation of grazing systems, season of use and other management practices.

- WL 6.1: ... riparian and meadow habitats will be managed to attain and/or maintain a good ecological condition class....or reasonable equivalent. Specifically: Employ livestock management systems/practices/improvements including exclusion of grazing where necessary

All Pastures (7N, 7NC, 7, 7S)

Synopsis of Assessment Findings

Deep Creek primarily forms to the eastern border for the SDR Use Area. The majority of Deep Creek (15.6 miles) was in PFC, comprising approximately 69 percent of the stream length (Table 1). The remaining portion (7.1 miles) was in FAR condition and equated to approximately 31 percent of the stream length. Camel Creek had fewer miles of stream in PFC (0.7 miles) equating to approximately 17 percent of the total 4.2 stream miles rated. In Camel Creek, 0.7 miles were in PFC, 3.4 miles were FAR, and 0.1 miles were in NF. All segments (0.9 miles) of Camel Falls Creek were in PFC. Pole Creek had 8.5 miles in PFC and 1.1 miles in FAR condition. All of Nickel Creek (2.3 miles) was in FAR condition.

Table 1. Miles of stream channels in SDR Use Area by PFC rating.

PFC Assessments	PFC (miles)	FAR (miles)	NF (miles)
Deep Creek	15.6	7.1	0
Camel Creek	0.7	3.4	0.1
Camel Falls Creek	0.9	0	0
Pole Creek	8.5	1.1	0
Nickel Creek	0	2.3	0
	25.7 (65%)	13.9 (35%)	0.10 (.002%)

Of 14 springs evaluated, six were in PFC, six were FAR, and one was NF. The last spring was not evaluated at the spring source and will therefore not be included as part of the rationale.

Evaluation Finding –All Pastures (7N 7NC, 7 and 7S) are:

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

Rationale for Evaluation Finding

The evaluation of indicators for Standard 2 suggest that slightly more than half of the streams and half of the evaluated springs are PFC. The remaining stream reaches (13.9 miles) and springs (6 springs) are functioning at risk primarily due to lack of riparian vegetation. These areas represent a significant proportion of riparian vegetation within the Sierra Del Rio Use Area as well as the entire Big Springs Allotment. On the streams accessible to livestock, 6.7 miles (32%) in the Sierra Del Rio use area were PFC condition, 13.9 miles (67%) are in FAR condition, and 0.1 miles (<1%) are in NF condition. The team assessed 13 springs out of a total of about 25 springs within the Sierra Del Rio Use Area and determined that 46% were in the PFC category, 46% were FAR and about 8% were NF. The IDT selected a representative number of springs, which provided a snapshot for management to develop objectives to ensure that springs are managed in a manner that will meet or make progress towards meeting Standard 2. The team evaluated streams both accessible and not accessible to livestock, and concluded that in riparian/wetland areas accessible to livestock, vegetation cover and vigor was not sufficient to

stabilize stream banks as described in the Sierra Del Rio Assessment and referenced in the 2012 surveys. These conditions occurred at livestock accessible FAR portions of Deep, Pole, Nickel, and Camel Creeks. Use of riparian vegetation was consistently high for reaches of Camel, Deep, Nickel, and Pole Creeks. The assessments also indicate that these stream reaches are grazed during the hot season, lack bank stabilizing species and the vegetation is low in vigor.

At over half of the springs, livestock concentration has resulted in soil disturbance, soil compaction, reduction in wetland area, and loss of wetland plant species. Hoof shearing, heavy woody browse and riparian vegetation use has resulted in pedestalling, shrinking of the wetland area, and a reduction in spring flow. Density and vigor of wetland vegetation was low. Additionally, mechanical disturbance to wetland soils contributed to increased erosion and sedimentation.

Preliminary Causal Factors

There are three main factors that contribute to degradation of riparian-wetland areas in these pastures: 1) annual hot season grazing use; 2) Low mean stubble heights and relatively high shrub utilization are indicators of livestock impacts to these reaches; and 3) sedimentation and channel alteration from upstream reaches. Channel forms (sinuosity, width to depth ration) are not in balance with the landscape and will likely not be for many years due to the lack of vegetation cover and unstable banks in some areas. These three factors reduce the ability of streams to successfully recruit and maintain willows and other stabilizing riparian vegetation. Springs in the allotment are being heavily impacted by hoof actions, resulting in pedestalling and shearing of vegetation. Additionally, excessive use of wetland vegetation by livestock has caused wetland areas to shrink in size and have reduced productivity.

Information Sources

Lentic Proper Functioning Condition Assessments; 1995-2012.

Lotic Proper Functioning Condition Assessments; 1995-2012.

Standard 3. Stream Channels and Floodplains

Desired Conditions

Proper Functioning Condition (PFC) assessments, field notes, aerial imagery, photographs, and other observations gather between 1995 and 2014 were used to evaluate the riparian areas, wetlands and stream channel/floodplain standards. Indicators used for the evaluation of Standard 3 include evidence that a stream's floodplain can be accessed during high flow events, has the ability to dissipate energy during high flow events, expresses stream bank stability, that channel characteristics are in line with the surrounding landscape, and that the floodplain exhibits little evidence of excessive compaction. Stream channels and floodplains are properly functioning relative to the geomorphology (e.g. gradient, size, shape, roughness, confinement, and sinuosity) and climate when they are able provide for proper nutrient cycling, hydrologic cycling, and energy flow. The allotment size (187,825 acres) required that the interdisciplinary team utilize a representative sample of conditions to guide conclusions within this evaluation. PFC assessments were completed on at least 3 different occasions at most streams totaling approximately 39.7 miles within this use area.

All Pastures (7N, 7NC, 7, 7S)

Synopsis of Assessment Findings

The 3.2 miles of Deep Creek which were accessible to livestock are FAR, due to both poor riparian plant composition and vigor and impacts from excessive sediment levels. The FAR and NF segments of Camel Creek exhibit suppressed willow and sedge/rush growth needed for bank stability.

Table 1 shows the miles of stream channels in each PFC rating category within the SDR Use Area. Portions of Deep Creek that are in PFC are generally confined to steep canyon areas, inaccessible to livestock. These areas are heavily armored and dominated by willow species that assist in stabilizing banks. The remainder of Deep Creek was rated at FAR due to excessive sediment deposition, historical incision of the channel, and channel characteristics not being in balance with the landscape (width to depth ratio, sinuosity, excessive lateral cutting). Livestock use of the herbaceous vegetation and woody browse in these FAR areas has reduced the establishment of late seral vegetation, reduced bank stability and limited the ability for the stream channel to stabilize. The majority of Camel Creek was rated as FAR condition due to in-channel erosion, the presence of a head cut, and the channel characteristics being out of balance with the landscape (sinuosity, width to depth ratio). Riparian vegetation was present along portions of the stream channel; however, heavy livestock utilization had reduced these plants ability to stabilize the channel. All segments (0.9 miles) of Camel Falls Creek were in PFC, however, it was noted that some portions of the channel are out of balance with the landscape (sinuosity reduced, width to depth ratio). Pole Creek was predominately rated as being in PFC. The channels were heavily rock armored with vigorous stabilizing vegetation. For portions of Pole Creek rated as FAR, stream banks lacked stabilizing vegetation and exhibited excessive sediment loads. It was noted that extensive livestock use had reduce vegetation on all banks as well as in-channel bars and were creating a significant disturbance to stream bank soils which was increasing erosion. All of Nickel Creek (2.3 miles) was in FAR condition as a result of lacking stabilizing vegetation which resulted in channel and floodplain degradation. The stream channel was out of balance with the landscape (width to depth ratio) and displayed low recruitment as a result of excessive livestock use.

Evaluation Finding – Pastures 7N and 7NC are:

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

Rationale for Evaluation Finding

The evaluation of indicators suggest that slightly more than half of the streams and half of the evaluated springs are PFC. The remaining stream reaches (13.9 miles) and springs (6 springs) are functioning at risk primarily due to lack of riparian vegetation. These areas represent a significant proportion of riparian vegetation within the Sierra Del Rio Use Area as well as the entire Big Springs Allotment. Livestock are able to access 20.7 miles of the total streams assessed. On the streams accessible to livestock, 6.7 miles (32%) in the Sierra Del Rio use area were PFC condition, 13.9 miles (67%) are in FAR condition, and 0.1 miles (<1%) are in NF condition.

The IDT evaluated streams both accessible and not accessible to livestock and concluded that in riparian/wetland areas accessible to livestock, the stream channel was typically out of balance with the surrounding landscape. This included unstable banks, some areas that displayed active head cuts and reduced stabilizing vegetation that resulted in excessive erosion. These conditions occurred at livestock accessible FAR portions of Deep, Pole, Nickel, and Camel Creeks. Livestock use of riparian vegetation was consistently high for FAR reaches of Camel, Deep, Nickel, and Pole Creeks. Cumulatively, the riparian areas rated as FAR have a reduced ability to dissipate energy during high flow events.

The IDT assessed 13 springs out of a total of about 25 springs within the Sierra Del Rio Use Area and determined that 46% were in the PFC category, 46% were FAR and about 8% were NF. The IDT selected a representative number of springs, which provides a snapshot for management to develop objectives to ensure that springs are managed in a manner that will meet or make progress towards meeting Standard 3. Livestock use of spring areas has resulted in alterations to the hydrology of these areas through excessive hoof action and reduction in riparian vegetation. Hoof action has resulted in soil compaction, reducing the wetland/spring areas ability to maintain water. The reduction in riparian vegetation has reduced the ability of the wetland/spring areas to dissipate energy and increased the potential for erosion to occur.

Preliminary Causal Factors

Primary contributing factors that have resulted in the degradation of riparian and wetland/spring areas within the SDR Use Area include stream channels being out of balance with the landscape (sinuosity, width to depth ratios), shearing and compaction along stream channels and within wetland/spring areas that have destabilized banks or reduced the size of wetland/spring areas, and the heavy use of vegetation that has resulted in the systems inability to dissipate energy during high flow events. These factors reduce the ability of streams and wetland/spring areas to overcome stochastic events and maintain or recruit stabilizing riparian vegetation.

Information Sources

Lentic Proper Functioning Condition Assessments; 1995-2012.

Lotic Proper Functioning Condition Assessments; 1995-2012.

Standard 4: Native Plant Communities

Desired Conditions

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 microbiotic soil 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.

The Bruneau MFP also established the following objectives for native plant communities:

- RM 1 - Develop range programs and management techniques to:
 - Increase 333,552 acres currently in poor range condition to fair condition in 20 years.
 - Increase 343,522 acres currently in fair condition to good condition in 20 years.
 - Maintain the condition class of 283,849 acres currently in good and excellent condition.
- RM 1.5 - Adjust Livestock season of use and/or implement grazing systems on spring and summer ranges to meet minimum growth needs of preferred plant species.
- RM-3: Allocate livestock forage in each allotment in the Bruneau Planning Unit so as to maintain or enhance the range and soil resources.

Pastures 7N and 7NC (Summer Use)

Synopsis of Assessment Findings

The biotic integrity of the plant community at 8 of the 16 (50%) rangeland health evaluation sites indicated only a slight departure from reference conditions. Biotic integrity of the remaining eight sites ranged from slight to moderate departure. The three most common indications contributing to departure of the native plant community conditions were reduced vigor, invasive plants, and under-representation of the large-statured bunchgrass group. These conditions were not always coincident.

Plant community trends have been mixed, depending on location. Inventories documented poor to fair range conditions throughout this pasture in 1982 (USDI BLM 2014). Since then, repeated samples document a static or slightly downward trend on Avery Table because, except for oatgrass, perennial grass frequencies have declined. Meanwhile, trend at the Spencer Butte area has been slightly upward because, except for squirreltail, perennial grass frequencies have increased and sagebrush frequency has declined substantially. The Clayey 12-16 ecological sites on Avery Table have greater potential production than the Shallow Claypan sites around Spencer Butte. In summary, clayey ecological sites on Avery Table appear to be in a static to downward trend, while Claypan sites near Spencer Butte appear to be on an upward trend. Utilization pattern mapping indicates no livestock use on Avery Table in 2005. Utilization around the Spencer Butte Area has ranged from slight in 2000 to none in 2005.

Western juniper, bulbous bluegrass, and cheatgrass are scattered in these pastures. In terms of invasive vegetation, western juniper encroachment poses the greatest threat to long-term functionality of the sagebrush steppe. The old growth western juniper in pasture 7N & 7NC appears to be thriving but encroachment by young trees into adjacent sagebrush stands has the potential to degrade ecosystem function (Miller et. al. 2005). Bulbous bluegrass and cheatgrass, while still a concern, have less potential to substantially degrade native plant community function in these pastures for three reasons. First, the plant communities are functioning well enough to resist invasive grasses; a trend that will likely continue

absent a major disturbance. Second, fire as a disturbance factor has not been a major driver of system change. Third, cheatgrass is less competitive with native vegetation at these elevations.

Natural disturbance factors have influenced vegetation conditions. Aroga moth larvae were documented in areas of the Owyhee Uplands during the 2012 grazing season. The ID Team noted larvae castings and webbing in these pastures and noted several areas where these insect larvae appear to have defoliated native vegetation, particularly sagebrush in 2012. Precipitation was 10 to 16 percent below average for this area in 2012 (USDI BLM 2014).

Evaluation Finding – Pastures 7N and 7NC

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

Rationale for Evaluation Finding

Native plant communities closely resembled reference conditions in half of the assessment locations and were only a slight-to-moderate departure in the other half. Plant community trend has been mixed. Trend has been upward in the more common, but less productive, Shallow Claypan sites, while trend has been static to slightly downward in the potentially more productive Clayey ecological sites. Invasive vegetation is a concern but, with the exception of slow juniper encroachment, the plant communities in this pasture appear to be resisting invasive grass reasonably well. Throughout the pastures all functional/structural groups are represented, despite the occasional under-representation of desirable forage plants. Upland vegetation in these pastures appears to meet the land use plan objectives. Overall, vegetation condition has either remained static or improved. Livestock grazing management is meeting the minimum growth needs of upland plants.

Pasture 7 (Late Spring/Early Summer Use)

Synopsis of Assessment Findings

An ID team sampled rangeland health attributes in pasture 7 at three locations in 2004 and revisited one of those locations in 2012. Native plant communities were well established but some indicators of native plant community showed moderate to extreme departure from reference conditions. Plant vigor was slightly, to moderately departed at all sample areas, with some variation between sites.

Structurally, bunchgrasses at loamy sites exhibited low vigor and were under-represented as a group. Production on these sites was only 60-80% of reference conditions due to the under-representation of bunchgrass plants. Sagebrush made up the majority of the primary production on these sites but it was frequently decadent, exhibiting broken limbs. Sagebrush at the churning clay site also displayed decadence and low vigor. Although sagebrush was in better condition at the Claypan site, bunchgrasses there demonstrated crown-die out, pedestaling, and root exposure; a condition also documented at the churning clay site in 2012. Reduced seed head production and decreased vigor on grasses were observed at all three RHEs.

The Loamy sites appear to receive substantially more use than the stonier Claypan sites. Utilization studies in showed many of the Claypan sites as having only slight use (2000, 2005, 2006) while the

Loamy RHE site exhibited light (2005) to heavy use (2000, 2004). Large woody debris and livestock manure made up a disproportionately high amount of litter in Loamy ecological sites near Indian Crossing. These conditions were characteristic of the Loamy inclusions in this pasture in 2004.

Evaluation Finding – Pasture 7 is: check one

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

Rationale for Evaluation Finding

Although they make up only five to ten percent of this pasture, the loamy ecological sites receive a disproportionately high amount of livestock use. Large bunchgrass plants in loamy areas exhibit low vigor and are generally under represented as a group in the loamy ecological sites. Root exposure and crown mortality on bluegrass and Idaho fescue plants at Shallow Claypan and Churning Clay sites has reduced plant health and inhibited those plant’s reproductive capabilities on another five to 10 percent of the pasture. Bunchgrass crown-die out, pedestaling, and root exposure were documented in sagebrush interspaces, indicating use by animals who favor grazing exposed plants, rather than those beneath shrub canopies. In all, the native plant land health standard and land use plan objectives are not being met on 10-20 percent of the pasture.

Preliminary Causal Factors

Early use on Little Point while soils are still saturated is a likely contributing factor. Livestock trampling is affecting the health of big sagebrush on Loamy inclusions while wood and manure are providing a disproportionate level of soil surface litter relative to the high potential (45-55%) production by grasses. Livestock grazing is also adversely affecting bunchgrasses. As desirable forage, these plants are conspicuously under represented. Remaining forage species exhibit low vigor and low reproductive capability likely due to repeated use by livestock during the critical growing season or over utilization, overall.

Pasture 7S (Mid-Spring Use)

Synopsis of Assessment Findings

An ID Team assessed rangeland health at seven locations in this pasture in 2004. Conditions were highly variable. The biotic integrity ratings at two of those sites closely matched reference conditions. The ratings at four other sites were slight to moderate departure. Biotic integrity at the Loamy departed moderately from reference conditions due to a general under-representation of large-statured bunchgrasses in the shrub understory and low vigor on the remaining individuals. Sagebrush canopies on the Loamy site usually harbored remaining bunchgrasses, but even those plants demonstrated relatively low reproductive capability. An ID Team revisited the loamy site on Big Point in 2012. Although utilization levels on large-statured bunchgrasses had decreased since the 2004 assessment, estimated production from large-statured bunchgrass plants was still depressed compared with reference conditions for the site.

The under-representation of bunchgrasses was also common on some the Claypan sites in the north and central portion of this pasture. Dead grass crowns, poor regrowth, reduced vigor, reduced reproductive capability and shrub decadence were all slightly, to moderately departed at these sites. Elsewhere in the pasture, further south on Big Point, Claypan sites supported good stands of Idaho fescue.

Plant community trend appears to be upward. Inventories documented poor to fair range conditions throughout this pasture in 1982 (USDI BLM 2014). Trend samples at the Claypan site on Big Point indicate a static to slightly upward trend because native bunchgrass frequency has remained relatively static, while sagebrush frequency has declined since the 1980s. Precipitation was approximately ten percent below average for this area in 2012 (USDI BLM 2014). Aroga moth appeared to be less of a factor in this pasture than areas further north.

Utilization pattern mapping indicates variation with the breaks of Deep Creek receiving heavy use in 2000 and moderate use in 2005. Areas of the pasture south of the Brace Ranch crossing on Deep Creek routinely receive little or no use. The 2004 ID Team estimated heavy utilization at three of the seven assessment locations in 2004, including the Loamy site on Deep Creek.

Evaluation Finding – Pasture 7S is:

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

Rationale for Evaluation Finding

Native plant communities dominate this pasture. Plant community conditions are variable but Loamy 10-13 sites above the Deep Creek crossing to Brace Ranch are not functioning well because large statured bunchgrasses are under-represented and the remaining bunchgrasses are in danger of further decline. At potential, large bunchgrasses dominate these sites and play a major role in plant community function. This condition represents a small minority of the pasture, perhaps five to 10 percent. Utilization at these sites appeared slight in 2012 and the remaining large bunchgrasses produced some seed. Large bunchgrass recruitment could still occur at these sites in the future, given the right conditions. In all, land health Standard 4 and land use plan objectives are not being met on five to 10 percent of the pasture. The remainder of the pasture (90-95 percent) appears to meet Standard 4 and land use plant objectives.

Information Sources

Miller R.M., J.D. Bates, T.J. Svejcar, F.B. Pierson, L.E. Eddleman 2005. Biology, Ecology, and Management of Western Juniper. Technical Bulletin 152, June. Oregon State University, Agricultural Experiment Station.

USDI BLM 2014. United States Department of the Interior, Bureau of Land Management. Big Springs Allotment Upland Vegetation Specialist Report. Bruneau Field Office. May.

Standard 7. Water Quality

Synopsis of Assessment Findings:

Deep, Pole, and Nickel creeks do not support the “Cold Water Aquatic life” water temperature standards (IDEQ Integrated Report 2010).

Evaluation Finding – Pasture 7N, 7NC, 7, and 7S is:

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

Rationale for Evaluation Finding

The Idaho Department of Environmental Quality (IDEQ) evaluated the beneficial use support status of streams within the SDR Use Area. Both Deep, Pole, and Nickel creeks do not support the “Cold Water Aquatic life” water temperature standards (IDEQ Integrated Report 2010). Standard 7 cannot be met until all beneficial uses are fully supported and are no longer part of the IDEQ Integrated Report.

Those indicators described in Standards 2 & 3 are integral to the support of beneficial uses, however, there are a few indicators that are directly affected by livestock management operations and should be the focus of improvements made within this use area. Specifically, improvements could be made within riparian areas that are accessible by livestock and may include increasing shade outside of confined canyons, reducing concentrations of livestock and associated fecal pollutants near water, and decreasing livestock-related bank erosion. It must be stated that the impacts to water quality are cumulative, both temporally and spatially and those impacts that are upstream from the use area are contributing, but outside of the control of livestock management within this allotment.

Preliminary Causal Factors

At this time, there is insufficient information to identify suspected causal factors. Both Deep and Pole creeks are mostly inaccessible to livestock. However, current grazing and heavy historic grazing in Nickel Creek may have suppressed or removed shade-producing willow growth needed to stabilize shores.

Information Sources

BLM reviewed the State of Idaho’s Beneficial Use Reconnaissance Protocol (BURP) database (IDEQ 2004b). Idaho Department of Environmental Qualities 2010 Integrated Report for HUC #17050104, Upper Owyhee, PFC field inspections, water temperature dataloggers, thermograph data, solar pathfinder data, and bacterial sampling results.

Standard 8. Threatened and Endangered Plants and Animals

Desired Conditions

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 microbiotic 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.

Additionally, the following Bruneau Management Framework Plan (1983) objectives and decisions apply to achieving the desired conditions for this use area:

- RM 5: Provide for protection and conservation of rare and endangered plants.
- WL 2: Manage sensitive species habitats...to maintain or increase existing and potential populations.
- RM 1.1 (1): Implement intensive management (AMPs) on 14 allotments [including Big Springs]. Specifically: Livestock rest or deferment systems would be established on critical sage grouse brood rearing areas.
- WL 2.1: Manage 93,500 acres of bighorn habitat to provide adequate food, cover, water, and space for 420 bighorns by 1990...including 220 for the Owyhee River area:
- WL 4.4: Manage 520,000 acres of sage grouse range...to improve nesting, brood rearing and winter habitats. Specifically: ...all poor and fair big sagebrush, meadow and riparian ecological sites should be improved and managed for good ecological condition.

The WL-AQ 2 Objectives and Decisions listed under Standard 2 are also relevant for Special Status Fish under Standard 8.

Wildlife

Pastures 7N and 7NC (Summer Use)

Synopsis of Assessment Findings

Upland and riparian habitat conditions were assessed for special status wildlife species. Upland conditions in Pasture 7 and 7NC (henceforth known as 7N) were characterized at 17 RHE sites (all in 2004 and two revisited in 2012) and with four sage-grouse nesting assessments. Riparian conditions were assessed with two sage-grouse late brood-rearing assessments and PFC ratings at streams and wetland sites. There were originally 11 late brood-rearing assessments conducted in this pasture but nine were excluded from consideration because they were deemed to be within areas characterized with juniper stands that were too dense for sage-grouse use during the late summer.

Upland vegetation condition is used to characterize habitat for nesting sage-grouse, pygmy rabbits, and big game. Even though Pasture 7N includes scattered areas of encroaching juniper, bulbous bluegrass, and cheatgrass, upland conditions in Pasture 7N are generally in good condition with high forb diversity and good native plant components. All of the sage-grouse nesting assessments rated marginal but were all in low (3) or silver (1) sagebrush sites where the short stature of the sagebrush lowers the rating of the site for nesting. There was a high abundance and diversity of forbs at all of the nesting assessment

sites. Overall, upland vegetation in Pasture 7N was in good condition and contributes toward healthy wildlife populations.

Riparian condition is used to characterize habitat for sage-grouse during late summer and spotted frogs. The two springs retained in this pasture for assessing sage-grouse late brood rearing habitat rated suitable. Ratings for the 11 springs assessed for proper functioning condition (see Standard 2), many of which overlapped with the original late brood-rearing assessment sites, included NF (1), FAR (4), and PFC (6). The developed springs rated NF and FAR and roughly half of the undeveloped springs rated FAR. Although roughly half of the assessed springs are partially degraded, the ones suitable for sage-grouse use are in good condition. The remaining sites are not suitable for spotted frog use but would be used by other non-special status species. However, relative to special status wildlife species, riparian conditions in this pasture are adequate to sustain good habitat for healthy populations.

Evaluation Finding – Pasture 7N

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

Rationale for Evaluation Finding

The upland vegetation was in good condition in this pasture. Also, riparian conditions were mostly good for areas used by special status wildlife species. Overall, upland and riparian conditions for this pasture contribute to healthy wildlife populations, especially for those that are special status species.

Pasture 7 (Late Spring/Early Summer Use)

Synopsis of Assessment Findings

There were three RHE sites that were used to ascertain upland conditions in Pasture 7, along with four sage-grouse nesting assessments. Riparian conditions were assessed with four sage-grouse late brood-rearing assessments and PFC ratings at streams and wetland sites.

Upland habitat in Pasture 7 is in generally good condition with good forb abundance and diversity. Plant vigor was less than expected at all of the sites and the most departure from reference conditions was observed at loamy sites where livestock spend a disproportionate amount of time. However, loamy sites represent a small portion of the pasture (5-10%). All of the sage-grouse nesting assessments rated marginal but were all in low (3) or low/big (1) sagebrush sites where the short stature of the sagebrush lowers the rating of the site for nesting. There was a high abundance and diversity of forbs at all of the nesting assessment sites. Overall, upland vegetation in Pasture 7 was in good condition and contributes toward healthy wildlife populations.

Four lentic sites rated marginal (3) and unsuitable (1) for sage-grouse late brood-rearing habitat. Sage-grouse use was present at most of the sites but all were degraded. Stream segments in this pasture were comprised of portions of Pole, Deep, and Nickel Creeks. Most of the segments of these creeks in this pasture rated as FAR and PFC and were in deep canyons so sage-grouse would not use the majority of them. However, other wildlife species (e.g. bighorn sheep, songbirds) would benefit from the existing conditions in the PFC segments and with the improvement in those segments that rated FAR.

Evaluation Finding – Pasture 7

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

Rationale for Evaluation Finding

The upland vegetation was in good condition in this pasture. However, conditions at springs were unsuitable and marginal with hummocking, erosion, and low forb diversity. Although sage-grouse sign was present at most of the sites, continued impacts at these sites could jeopardize long term maintenance of late brood rearing habitat for sage-grouse, as well as high quality lentic and lotic conditions for other wildlife species.

Preliminary Causal Factors

Livestock impacts have degraded conditions at many of the lentic and some of the lotic sites in this pasture. Livestock concentration at the springs and along some segments of stream has resulted in modifications of the plant composition that has decreased the ability of these sites to maintain water late into the summer and sustain an abundance and diversity of forbs desirable to sage-grouse and other wildlife species.

Pasture 7S (Mid-Spring Use)

Synopsis of Assessment Findings

There were seven sites assessed with RHEs and four sage-grouse nesting assessments used to ascertain upland conditions in Pasture 7S. Riparian conditions were assessed with one sage-grouse late brood-rearing assessment and PFC ratings at streams and wetland sites.

Rangeland Health Evaluations revealed that upland vegetation in Pasture 7S varied in condition. Native plant communities dominated the pasture but bunchgrasses were underrepresented at Big Point east of the Brace Ranch Crossing at Deep Creek (aka Wiseman Crossing). This area is some of the least rocky in the pasture and is characterized with big sagebrush communities. Sage-grouse nesting assessments were conducted in this same area at Big Point during 2004 and 2012 and rated marginal during both assessments. Other nesting assessments in Pasture 7S were conducted at sites that were either naturally unsuitable (dominated by rock and grass) or at low sagebrush sites where the short stature of the sagebrush lowers the rating of these site for nesting. There was a healthy forb component at most of these remaining nesting assessment sites. Overall, upland vegetation in Pasture 7S was in good condition with the exception of the area of Big Point east of the Brace Ranch Crossing at Deep Creek.

The one lentic site evaluated in this pasture (Albert Spring) rated suitable for sage-grouse late brood-rearing habitat during 2004 and marginal in 2012. The site is very small and does not exhibit signs of disturbance but slight xeric vegetation encroachment was identified during 2012. Stream segments bordering this pasture were comprised of portions of Deep and Dickshooter Creeks. Most of the segments of these creeks in this pasture rated as PFC with a segment of Deep Creek that rated FAR but with an upward trend.

Evaluation Finding – Pasture 7S are:

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

Rationale for Evaluation Finding

Most of the low sagebrush upland habitat in Pasture 7S is in good condition and contributes positively to nesting sage-grouse, big game, and other wildlife species. Likewise, the lentic and lotic habitat in this pasture is in good condition or on an upward trend. However, bunchgrasses were underrepresented in the big sagebrush upland habitat in the area of Big Point, which lessens the quality of this area for nesting sage-grouse and other wildlife species.

Preliminary Causal Factors

Livestock impacts have degraded conditions in the area of big sagebrush at Big Point east of the Brace Ranch Crossing. This area is one of the least rocky in this pasture and has suffered repeated concentrated livestock use during the critical growing season.

Information Sources

Stream and spring functioning condition assessments for Standard 2
Upland Health assessments and trend studies for Standard 4
Sage grouse lek (mating ground) surveys by helicopter during April-May 2004-2013
IDFG sage grouse historical lek database, 2003
IDFG and BLM telemetry studies of sage grouse, 2002-2013
Sage grouse habitat assessments in 2004, 2005, and 2012
Idaho Fish and Wildlife Information System database
General wildlife field observations in 2004, 2005, and 2012

Fish

Synopsis of Assessment Findings

Stream temperatures in Deep, Pole, and Nickel creeks do not support a viable redband trout fishery.

Evaluation Finding – Pasture 7N/7/7S is: check one

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

Rationale for Evaluation Finding

Water temperatures in Deep Creek, are too warm to maintain a viable population of redband trout. However, aquatic habitat was in good to excellent condition in most all segments of Deep Creek. Pole Creek is limited by intermittent stream flows. No fisheries data are available for Nickel Creek, although it is not likely that this stream hosts redband trout due to high water temperatures.

Preliminary Causal Factors

To the extent that water quality impairment (temperature) is the result of current and/or historical livestock grazing, historical private land use practices, natural back-ground heating, or a combination of factors is difficult to determine. Both Deep and Pole creeks are mostly inaccessible to livestock;

however, current grazing may be suppressing recovery of shade-producing willow growth that was removed by heavy historic grazing in Nickel Creek.

Information Sources

Idaho Department of Environmental Quality data (2010 Integrated Report), field inspections, water temperature dataloggers, thermograph data, solar pathfinder shade measurements and bacterial sampling. BLM electro-fishing data 2012), IDEQ Upper Owyhee Subbasin Assessment and TMDL (2003).

USDI BLM 2014. United States Department of the Interior, Bureau of Land Management Big Springs Allotment Fish Biologist report. USDI BLM 2014. United States Department of the Interior, Bureau of Land Management Big Springs Allotment Natural Resources Specialist report, June 2014.

Plants

Pastures 7N and 7NC (Summer Use)

No special status plants occur in Pastures 7N or 7NC.

Pasture 7 (Late Spring/Early Summer Use)

No special status plants occur in Pasture 7.

Pasture 7S (Mid-Spring Use)

Synopsis of Assessment Findings

There are two special status plant known to occur in Pasture 7S of the Sierra Del Rio Use Area. These include the Owyhee River forget-me-not (*Hackelia ophiobia*), Type 3 BLM Sensitive species, and Simpson's hedgehog cactus (*Pediocactus simpsonii*), a Type 4 species. One population each of Owyhee River forget-me-not and Simpson's hedgehog cactus is found in the 7S pasture.

Evaluation Finding – Pasture 4, A Paddocks is:

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

Rationale for Evaluation Finding

Both populations are well protected from disturbance by inaccessible habitat. The Owyhee River forget-me-not is located in talus slopes of the Owyhee River Canyon where cattle do not graze. The Simpson's hedgehog cactus grows on rocky soils distant from water and is therefore protected from most cattle use.

IS A DETERMINATION REQUIRED?

All Standards are met or making significant progress towards meeting and there is conformance with the guidelines. *No Determination is required, review is complete.*

One or more Standards is not being met or there is non-conformance with the guidelines. ***An Authorized Officer's Determination of causal factors is required.***