

Nickel Creek FFR Allotment Evaluation and Determination

6/24/2013 DRAFT

Background:

An assessment and a determination of Idaho Standards for Rangeland Health for the Nickel Creek FFR Allotment were originally completed in 2003, based on 2001 field evaluations of rangeland health indicators. Grazing management from approximately 1990 to 2001 was generally season-long, with high stocking rates, and no rotations or rest; there were 17 members in the grazing association and few improvements on private lands within the FFR. Although no changes were made to the terms and conditions of the Nickel Creek FFR permit, changes in management occurred between about 2001 and 2005 as a result of management changes in the Nickel Creek Allotment and a reduction in members in the grazing association (to three). In the Nickel Creek FFR, the changes include running about half as many cattle as in the past, incorporating periodic rest and deferment (use after seed ripe) and less season-long grazing, and increased private hay meadows and irrigation. The grazing association members have also developed a grazing system for the three general geographical areas (northern, central, and southern) that coordinates movement of livestock with the Nickel Creek FFR and Nickel Creek Allotments. In addition, within the northern, central and southern portions livestock are also rotated internally within the Nickel Creek FFR Allotment using different fields and pastures. The grazing association members have also separated their livestock into these three different geographical areas. By doing this the permittees have been able better manage the movement of livestock.

In July 2011, the Owyhee Field Office interdisciplinary team (IDT), accompanied by permittees' consultant Chad Gibson, conducted field evaluations of indicators (per Technical Reference 1734-6 version 4, 2005) at four different pastures, and made brief visits to two other sites. Of the four field evaluation sites, two were low sagebrush (Pastures 4 and 11) and two were basin big sagebrush (Pastures 24 and 25) sites. Additional field visits and monitoring were done individually by IDT members. Utilization monitoring was done in all pastures (and about half of the fields) at the end of the 2011 season and additional utilization monitoring occurred in 2012. Sage-grouse habitat assessments were conducted in 2012. No trend plots have been established in the FFR. Information from 2011/2012 is being used to update the assessment and determination. The updated Assessment is found in the Affected Environment section of the Nickel Creek FFR Grazing Permit Renewal EA (#DOI-BLM-ID-B030-2011-0006-EA) for the applicable resource for each Standard. This report uses that information to evaluate if the Idaho Standards for Rangeland Health (Standards) are being met, are not being met, or are making significant progress toward being met. For Standards not being met or making significant progress, the causal factor(s) are determined. Thus, this document constitutes a new evaluation and determination for the Nickel Creek FFR Allotment, and replaces the 2003 determination. This evaluation and determination evaluate conditions produced by grazing management since about 2005.

Interdisciplinary Team:

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Standard 1-Watershed

Overview

The allotment is within four watersheds (North Fork Owyhee River, Headwaters Deep Creek, Deep Creek and Red Canyon-Owyhee River) and is part of the Upper Owyhee sub-basin (HUC 170050104). Pastures 4, 6, 11, and approximately four acres of public land in Pasture 9 are within the Headwaters Deep Creek watershed. The remaining acres of Pasture 9 are in the North Fork Owyhee River watershed. Pastures 14, 19, 21, 23, and 24 are within the Deep Creek watershed, and Pasture 25 is within the Red Canyon-Owyhee River watershed. Soils vary greatly between pastures. Generally the northern pastures are shallow claypan sites and southern pastures are loamy sites. Soil series within the allotment are presented in Table 1. Susceptibility of soil to rill and sheet erosion, for the whole soil fraction is low to moderate and to wind erosion is low. The susceptibility of soils to frost action generally increases geographically from south (low to moderate) to north (moderate to high).

Table 1: Specific soil series on public land and percent the soil series represents on the entire Nickel Creek FFR Allotment.

Soil Series	Acres	Percent of Allotment
Babbington-Piline association, 0 to 3 percent slopes	>1	>1%
Deunah-Yatahoney-Lostvalley complex, 1 to 10 percent slopes	6	>1%
Hat-Avtable-Monasterio complex, 1 to 20 percent slopes	8	>1%
Hat-Nagitsy-Rock outcrop complex, 5 to 50 percent slopes	1	>1%
Hat-Rock outcrop-Nipintuck complex, 2 to 35 percent slopes	2	>1%
Nipintuck-Squawcreek-Rock outcrop complex, 2 to 30 percent slopes	6	>1%
Welch-Upcreek loams, 0 to 3 percent slopes	7	>1%
Goose Creek loam, 1 to 3 percent slopes	12	1%
Dougal-Bruncan stony sandy loams, 2 to 20 percent slopes	40	2%
Rubble land-Rock outcrop-Pachic Argixerolls complex, very steep	46	2%
Fairylawn-Schnipper silt loams, 1 to 8 percent slopes	85	4%
Squawcreek-Wickahoney stony loams, 1 to 20 percent slopes	69	4%
Rock outcrop-Xerollic Haplargids complex, very steep	109	6%
Hurryback-Wickahoney association, 3 to 45 percent slopes	145	7%
Perla-Ruclick complex, 2 to 12 percent slopes	129	7%
Squawcreek-Avtable-Wagonbox complex, 1 to 15 percent slopes	145	7%
Mulshoe-Squawcreek-Gaib association, 2 to 30 percent slopes	160	8%
Weash-Schnipper complex, 1 to 8 percent slopes	149	8%
Wickahoney-Budlewis complex, 1 to 10 percent slopes	171	9%
Mollic Haploxeralfs-Pachic Argixerolls complex, steep	190	10%
Pixley-Barkley complex, 2 to 10 percent slopes	194	10%
Paynecreek-Northcastle-Blackwell association, 0 to 8 percent slopes	266	14%

Evaluation:

The 2001 field evaluation of indicators, along with updated utilization, actual use, and 2011 field evaluations of indicators as discussed in the Nickel Creek FFR EA are used to evaluate the Watershed Standard.

Vegetation is the primary factor that influences the spatial and temporal variability of soil processes and as vegetation condition changes, so does runoff, erosion, and infiltration. The 2001 field evaluation of indicators identified that erosion indicators such as pedestalled bunchgrass and water flow patterns were observed throughout the allotment, but varied in intensity. Microbiotic soil crusts were lacking in areas that usually support the crusts. Field evaluations of indicators conducted in 2011 in Pastures 4, 11, 24, and 25 noted pedestalling, historical soil loss, a lack of biotic crust and invasive species at all stops. In most cases the current vegetation, litter and rock were adequate to prevent further soil erosion. Much of the accelerated erosion can be related to long-term erosional processes likely caused by historic grazing (greater than 50 years ago) and exacerbated by past grazing management (20 years ago).

Juniper encroachment is evident in Pastures 4, 9, 11, and 19.

Evaluation Finding – Allotment is (check one):

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

Evaluation Rationale

Standard 1 is not being met on the majority of the allotment as indicated by the evidence of accelerated soil erosion, an imbalance of increaser to decreaser plant species, and to a lesser extent, the increase in juniper. Signs of accelerated erosion such as water flow patterns and pedestaled bunchgrasses were observed in all pastures and are related to historic and past grazing practices. Native plant conditions appear to be similar to those described in 2003, although shallow-rooted bunchgrasses and annuals appear to have increased since the 2001 fieldwork.

Determination:

Standard 1 is not being met throughout the allotment. The primary causes for not meeting the Standard are accelerated soil erosion from past livestock management and the increase in invasive grasses and to a lesser extent, juniper encroachment.

Determination Finding: The Nickel Creek FFR Allotment is (check one or more):

- Meeting the Standard
- Not Meeting the Standard, but making significant progress toward
- Conforms with Guidelines for Livestock Grazing Management
- Not Meeting the Standard; Current Livestock Grazing Management Practices are Significant Factors
- Not Meeting the Standard; Current Livestock Grazing Management Practices are **not** Significant Factors
- Does not conform with Guidelines for Livestock Grazing Management Guidelines No(s).

Determination Rationale

Accelerated soil erosion such as water flow patterns and pedestalled bunchgrasses are identified throughout the allotment. This erosion is caused and exacerbated from reductions of deep-rooted perennial bunch grasses likely due to past livestock grazing and increases in shallow-rooted non-native grasses that have reduced soil cover and litter necessary for soil site stability. From the 2011 field evaluation of indicators and utilization data, plant vigor appears not to have been affected by current grazing management practices, and would be expected to be maintained under the same management. This should increase litter which would help the soils rebuild what was lost from past management practices.

Standard 2 Riparian areas and Wetlands & Standard 3 Stream Channel/Floodplain

Overview

Approximately 4 miles of streams are within the Nickel Creek FFR Allotment. Of those streams, about 1.5 miles are livestock accessible while the others are inaccessible either due to fencing or topography. Stream drainages include Castle, Deep, Nickel, and Smith creeks.

Table 2. Nickel Creek FFR stream reaches by pasture and livestock accessibility.

Pasture Number	Stream Name	Reach Miles	Livestock Accessible
4	Nickel Creek	0.05	No
6	Current Creek	0.16	Yes
6	Deep Creek	0.07	Yes
11	Smith Creek	1.10	No
11	Smith Creek	0.40	Yes
11	Nickel Creek	0.65	No
14	Castle Creek	0.32	Yes
14	Unnamed	0.47	Yes
19	Castle Creek	0.23	Yes
19	Deep Creek	0.78	No

Evaluation:

The 2003 Determination with updated lotic PFC assessments in the Nickel Creek FFR EA are used to evaluate the riparian areas and wetlands and stream channel/floodplain standards.

The 2003 Determination identified that Standards 2 and 3 were not being met on 0.75 mile of Smith Creek and were being met on 0.25 mile of Deep Creek. At that time, 0.25 mile of Castle Creek was not evaluated for functioning condition, but monitoring indicated riparian health may be impacted as livestock extensively used riparian plants along Castle Creek. Functioning at risk stream segments were dominated by early seral, shallow rooted species, such as Kentucky bluegrass and red top. There was inadequate riparian-wetland vegetation present to protect streambanks and dissipate energy during high flows. Grazing caused these vegetative shifts and was limiting the riparian areas' abilities to recover and rejuvenate. The heavy and severe utilization by livestock along Smith and Castle creeks did not provide sufficient residual vegetation to improve, restore, or maintain healthy riparian functions.

Two lotic Proper Functioning Condition (PFC) assessments were conducted in 2011 on 0.32 mile segment of Castle Creek in Pasture 14 and 0.40 mile segment of Smith Creek in Pasture 11. Both were rated as functional at-risk (FAR) with apparent upward trends.

Castle Creek segment (0.32 miles) is a low gradient, C channel that is deeply entrenched. Within the incised channel, the current channel meanders and has dense riparian vegetation comprising both woody and herbaceous species. Signs of historic excessive erosional events (channel entrenchment) occur almost the entire segment (from pasture boundary to private land). Erosion still occurs on cut banks; however dense riparian vegetation prevents much of the bedload transference into private lands or Deep Creek. No livestock impacts such as hoof shearing, woody browse, or heavy use were observed in the 2011 PFC assessment. Riparian vegetation appeared healthy with high vigor. Many young but no mature willows observed. There is a small reservoir approximately 0.7 miles upstream that controls flows in that segment from 4/01-10/3. Many years that segment is completely dry in July because of the irrigation diversion, and the only water this segment receives is from irrigation excess.

Smith Creek segment (0.4 miles) is a low gradient, C channel that is deeply entrenched in some areas that has a width to depth ratio that is out of balance with landscape form and geology. This was noted by evidence of heavy bedload (erosional deposition) in the channel and some exposed cutbanks. However riparian vegetation is re-establishing and beginning to stabilize gravel/sand bars. Also the stream channel is re-vegetating with willows, sedges and rushes whose root masses are sufficient to hold bank sediment during high flow events. Downstream a headcut was observed that was armored with cobble sized stone, and is unlikely to erode further upstream. From discussions with permittees, flow is likely intermittent and not as perennial as once thought, however several redband trout were observed and that reach could be considered a fishery.

Evaluation Finding – Allotment is (check one):

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

Evaluation Rationale

Carex, rushes, and young willows are establishing on sand bars and bedload deposits in Smith and Castle creeks and are likely holding bank sediments together during high flows. However, the channel forms (sinuosity, width to depth ratio) are not in balance with the landscape and will likely not be for many years due to the severity of channel entrenchment.

Determination:

Determination Finding: The Nickel Creek FFR Allotment is (check one or more):

- Meeting the Standards
- Not Meeting the Standards, but making significant progress toward meeting
- Conforms with Guidelines for Livestock Grazing Management
- Not Meeting the Standards; Current Livestock Grazing Management Practices are Significant Factors
- Not Meeting the Standards; Current Livestock Grazing Management Practices are **not** Significant Factors
- Does not conform with Guidelines for Livestock Grazing Management Guidelines No(s)

Determination Rationale

Standards 2 and 3 are not being met, as indicated by deeply entrenched channels, increased width-to-depth ratio, and excessive bedload (sediment). Significant progress toward meeting these Standards is indicated by the presence of herbaceous riparian vegetation which appears to be re-stabilizing streambanks, however only the young age class of willow was observed, inferring that there was no willow or the willow that was previously there was removed either by excessive grazing and/or mass erosion movement. Castle and Smith creeks are so deeply entrenched that it is unlikely either would be considered PFC in the near future due to their geomorphology. Both 2011 lotic PFC assessments identified an apparent upward trend. Riparian vegetation (both woody and herbaceous) increased and improved stabilization of sandbars from what was reported in 2003.

Standard 4 Native Plant Communities

Overview

Public lands within the Nickel Creek FFR Allotment are mapped within three main ecological sites:

- Shallow claypan, 12-16" precipitation, low sagebrush/Sandberg bluegrass and bluebunch wheatgrass
- Loamy, 13-16" precipitation, mountain big sagebrush/bluebunch wheatgrass and Idaho fescue
- Loamy, 11-13" precipitation, basin big sagebrush/bluebunch wheatgrass

For each of these ecological sites, the expected vegetation (defined by reference conditions) would be co-dominated by sagebrush and mostly large bunchgrasses.

Evaluation:

The 2003 assessment was based on nine field evaluations conducted in 2001. For low sagebrush communities, the assessment documented slight-moderate departure from reference conditions. The strongest indication of the departure was a reduction of large bunchgrasses (especially in the interspaces) and biological crusts; the presence of invasive plants (cheatgrass and juniper; Russian knapweed in one pasture) in some pastures was another indicator. Plant vigor showed none-slight or slight-moderate departure from reference conditions, with areas of low vigor, density, and recruitment, especially in interspaces. The assessment described similar conditions in big sagebrush communities, with slight-moderate departure from reference conditions indicated by an increase in Sandberg bluegrass and rabbitbrush (at the expense of large bunchgrasses) and a reduction in biological soil crusts. Species diversity in big sagebrush sites was similar to reference conditions, but species composition was altered, particularly a reduction in bluebunch wheatgrass. Cheatgrass and juniper were also identified as invasives in some pastures. Plant vigor and recruitment showed none-slight departure from reference conditions; noted were areas with evident pedestals, limited bunchgrass crown die-out, insect-related shrub mortality, and some recruitment.

The 2011 field visits found conditions similar to the 2001 field evaluations at the four sites evaluated. The most substantial change was an apparent increase in invasive annual plants. Three primary areas of departure from reference conditions were noted: 1. historic loss of soil (see Standard 1 - Watershed), 2. reductions in large bunchgrasses (particularly bluebunch wheatgrass) and biotic soil crusts, and 3. presence of invasive species. The reduction in large bunchgrasses appeared to be the result of past impacts because the vigor of the plants present was appropriate for the site, reflecting recent adequate to high precipitation, little current utilization at the time of

evaluation, and presumably recent years' grazing management. Invasive species included Phase 1-2 juniper encroachment in some areas, and the presence (and in some cases abundance) of non-native annual grasses; besides cheatgrass and some bulbous bluegrass (a perennial), these exotic grasses included several species not noted in the 2001 field evaluation, such as *Ventenata dubia*, *Bromus commutatus*, and *Apera interrupta*. The apparent increase in exotic annual grasses since 2001 constitutes a "red flag" suggesting a declining trend in native plant community integrity, although other factors appeared stable. Based on 2009 NAIP imagery, juniper encroachment is evident in portions of Pastures 4, 9, 11, and 19. Juniper encroachment is mostly patchy (Phase 1), but there are areas of Phase 2 juniper stands within these pastures, which is affecting the sagebrush and bunchgrass plant communities in those areas.

Utilization monitoring at the end of the 2011 and 2012 grazing seasons showed overall light utilization, with no individual site readings over 40%, and several sites with little or no utilization (<7%).

Evaluation Finding – Allotment is (check one):

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

Evaluation Rationale

It appears that conditions are similar to those in 2001/2003, with a slight improvement in biotic factors relating to soils (soil loss, compaction, and litter) but localized increases in non-native annual grasses. As in 2003, Standard 4 is not being met; this is indicated by less than expected large, perennial bunchgrasses and biological soil crusts. Another indication is the presence of invasive annual grasses in several pastures, and juniper in a few areas.

Determination:

Standard 4 is not being met throughout the allotment. The primary causes for not meeting are historic grazing and invasive plants.

Determination Finding: The Nickel Creek FFR Allotment is (check one or more):

- Meeting the Standard
- Not Meeting the Standard, but making significant progress toward
- Conforms with Guidelines for Livestock Grazing Management
- Not Meeting the Standard; Current Livestock Grazing Management Practices are Significant Factors
- Not Meeting the Standard; Current Livestock Grazing Management Practices are **not** Significant Factors
- Does not conform with Guidelines for Livestock Grazing Management Guidelines No(s)._____

Determination Rationale

Standard 4 is not being met, as indicated by a moderate reduction in large, perennial bunchgrasses and biological soil crusts, and an increase in non-native annual grasses and some encroachment of juniper. It appears that the shift in species composition (from more palatable decreaseers like bluebunch wheatgrass to less palatable increasers such as Sandberg bluegrass and rabbitbrush) has occurred due to past grazing (over ten years ago). Soil loss also appears to reflect historic rather than current management because there is little evidence of current soil movement. We have limited

information on the timing of use or utilization since (or before) 2001, but at the four pastures visited in mid-July of 2011, utilization by cattle appeared only slight, so if this pattern of use is typical, impacts during the critical growing season are not an issue. Utilization measured at the end of the 2011 and 2012 seasons was no more than 40% in all fields visited. It appears that recent grazing practices are adequate for maintaining the current, reduced density of large bunchgrasses, but the combination of increasing invasive plants and historic soil loss are not allowing the plant communities to make significant progress toward meeting Standard 4. The primary factors for not meeting Standard 4 are historical grazing and invasive plants. Current grazing management, with relatively light utilization, particularly during the critical growing season, does not appear to be significantly affecting the native plant community, so it appears that current management conforms to livestock grazing management guidelines. The current utilization level is expected to allow for the native plant communities to compete with invasive plants.

Standard 5 Seedings - Does not apply

Standard 6 Exotic Plant Communities - Does not apply

Standard 7 Water Quality

Overview

Stream drainages within the Nickel Creek FFR include Castle, Deep, Nickel, and Smith creeks. Streams with designated beneficial uses are addressed under the Idaho Administrative Procedures Act (IDAPA) 16.01.02.140. All streams within the Nickel Creek FFR Allotment have general use designations for secondary contact recreation, agricultural water supply, wildlife habitat, and aesthetics. Deep, Nickel, and Smith creeks have been assigned additional beneficial uses that include cold water aquatic life and salmonid spawning. Castle Creek has been assigned the beneficial use of cold water aquatic life.

The Idaho Department of Water Quality (IDEQ) identified Deep, Nickel, and Smith creeks as not fully supporting cold water aquatic life and salmonid spawning beneficial uses, and Castle Creek was not fully supporting cold water aquatic life beneficial use. Consequently, these streams are on the State of Idaho's 303(d) list as water quality limited due to excess sediment/siltation and water temperatures. Total maximum daily loads (TMDLs) were developed for sediment/siltation and stream temperature in Deep, Nickel, Smith, and Castle creeks.

Livestock grazing is the major land use in the area. Of the approximate 4 miles of streams within the allotment, about 1.5 miles are livestock accessible while the other reaches are inaccessible either due to fencing or topography (see Table 2).

Evaluation:

The 2003 Determination, IDEQ water standard information, the Upper Owyhee River TMDL Five Year Review (2009), lotic PFCs and 2011 field observations are used to evaluate the water quality standard.

The 2003 determination identified that elevated stream temperatures were probably the result of the loss of shade-producing vegetation such as shrubs and herbaceous grasslike species at the water's edge. Utilization studies indicated herbaceous and shrub species commonly have been utilized heavily along Smith and Castle creeks. Additionally, streambank alteration caused by livestock trampling (pugging, shearing, trampling) tends to increase stream width and decrease depth, which exposes more water to solar radiation thus increasing water temperature. Streambank alteration also contributes to unstable streambanks and increased sediment delivery. Elevated water temperatures and sediment in Deep Creek are thought to be primarily the result of land use practices on adjacent, upstream grazing allotments and private lands.

Lotic PFC data from 2011 in a 0.32 mile reach of Castle Creek and 0.5 mile reach of Smith Creek identified signs of historic excessive erosional events (channel entrenchment) and heavy sediment bedload in the channels. Excessive erosion still occurs on many of the cut banks. However, riparian areas are widening and re-vegetating with willows, sedges and rushes whose root masses are sufficient to hold bank sediment during high flow events. Riparian vegetation appeared healthy with high vigor. Riparian vegetation was re-establishing and beginning to stabilize gravel/sand bars. Additionally, there is a small reservoir approximately 0.7 miles upstream on Castle Creek that controls flows in that reach from 4/01-10/3. Many years that reach is completely dry in July because of the irrigation diversion, and the only water this segment receives is from the irrigation excess.

Upper Owyhee River Five Year Review (IDEQ 2009) identified that Deep Creek and Castle Creek (3rd order) reaches in the Nickel Creek FFR have improving water quality trends as related to sediment and stream temperature TMDLs, and Nickel and Smith creeks have static water quality trends as related to sediment TMDLs. Also, IDEQ stated the stream temperature targets were unattainable, and recommended re-writing the temperature TMDL using the 'potential natural vegetation' approach that uses shading as a surrogate for temperature.

Evaluation Finding – Allotment is (check one):

Meeting the Standard

Not meeting the Standard, but making significant progress toward meeting

Not meeting the Standard

Evaluation Rationale

Riparian vegetation (carex, rushes, and young willows) is establishing on sand bars and bedload deposits in Smith and Castle creeks and is likely holding streambank sediments together during high flows. The channel forms (sinuosity, width-to-depth ratio) are not in balance with the landscape and will likely not be for many years due to the severity of channel entrenchment. Exposed soil within entrenched stream channels continues to be eroded. However, the observed increase in riparian vegetation is improving streambank/sandbar stabilization and improving riparian buffer strip capacity between the uplands and streams. Additionally, the improving riparian communities increase stream shade and cool a portion of surface water. Idaho DEQ's five year review identified either improving water quality trends or static water quality trends for the streams, while both lotic PFCs identified apparent upward trends for two streams.

Determination:

Determination Finding: The Nickel Creek FFR Allotment is (check one or more):

- Meeting the Standard
- Not Meeting the Standard, but making significant progress toward meeting
- Conforms with Guidelines for Livestock Grazing Management
- Not Meeting the Standard; Current Livestock Grazing Management Practices are Significant Factors
- Not Meeting the Standard; Current Livestock Grazing Management Practices are **not** Significant Factors
- Does not conform with Guidelines for Livestock Grazing Management Guidelines No(s)

Determination Rationale

Standard 7 is not being met, as indicated by non-attainment of Idaho water quality standards. The deeply entrenched channels, increased width-to-depth ratio, and excessive bedload (sediment) are contributing excess sediment to stream channels and increasing stream temperatures. Significant progress toward meeting Standard 7 is indicated by the presence of riparian vegetation that appears to be re-stabilizing streambanks, however only the young age class of willow was observed, inferring that there was no willow or the willow that was previously there was removed either by excessive grazing and/or mass erosion movement. Riparian vegetation (both woody and herbaceous) is increasing and is improving sandbar stabilization from what was reported in 2003.

Standard 8 Threatened and Endangered Plants and Animals

Overview

Special Status Plants

Three BLM special status plants (SSP) have been recorded from within the Nickel Creek FFR Allotment boundaries. Mud Flat milkvetch, *Astragalus yoder-williamsii*, has been recorded on private lands in Pastures 6 and 11, and thinleaf goldenhead, *Pyrocoma linearis*, was recorded on private lands in Pastures 11 and 14; both species were last recorded at these locations in 1992 and no current information is available. Short-lobed penstemon, *Penstemon seorsus*, was found on public lands within Pasture 4 in 2011. See the Affected Environment section for Special Status Plants in the EA for additional information.

Evaluation:

Special Status Plants

Sagebrush communities have been altered somewhat from reference conditions by reductions in large bunchgrasses and biotic crusts and increased invasive annual grasses in some pastures, but in general the community structure, plant composition, and plant diversity are close to expected (See Standard 4). Therefore, if Mud Flat milkvetch is present on public lands in this allotment, it is likely that its habitat (openings in mountain big sagebrush or low sagebrush communities) is suitable to maintain viable populations of this plant. Likewise, meadow and riparian habitats are improving overall (See Standard 2), so if thinleaf goldenhead occurs on public lands in this allotment, its habitat would also be expected to be on an upward trend.

No impact from grazing or trampling (or other disturbance) was observed on the occurrence of short-lobed penstemon in Pasture 4 in July 2011, and plants appeared healthy, although few.

Utilization in that field (Field 4) was measured at 30% at the end of the 2011 season. Competition with weeds was not a substantial impact to the species at this site. It does not appear that grazing is limiting short-lobed penstemon or its habitat.

Evaluation Finding – Allotment is (check one):

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

Evaluation Rationale

Based on the limited information available, it appears that habitat for special status plants in the Nickel Creek FFR is suitable to maintain viable populations of these species.

Determination:

Special Status Plants

Based on limited information, Standard 8 is being met for short-lobed penstemon, and presumably for Mud Flat milkvetch and/or thinleaf goldenhead (if present on public lands in the allotment).

Determination Finding: For special status plants, the Nickel Creek FFR is:

- Meeting the Standard
- Not Meeting the Standard, but making significant progress toward
- Conforms with Guidelines for Livestock Grazing Management
- Not Meeting the Standard; Current Livestock Grazing Management Practices are Significant Factors
- Not Meeting the Standard; Current Livestock Grazing Management Practices are **not** Significant Factors
- Does not conform with Guidelines for Livestock Grazing Management Guidelines No(s).

Determination Rationale

Special Status Plants

Standard 8 is being met for short-lobed penstemon because habitat conditions do not appear limiting for this plant, and grazing use of its habitat is light. Habitats for Mud Flat milkvetch and thinleaf goldenhead (if present) are expected to be suitable and/or improving conditions, also not limited by current grazing.

Overview

Special Status Animals

Although no threatened and endangered species listed under the Endangered Species Act (ESA) occur in the Nickel Creek FFR Allotment, several candidate species in consideration for listing were identified from the U.S. Fish and Wildlife Service's (USFWS) Endangered Species Program. BLM, USFWS, and Idaho Department of Fish and Game (IDFG) maintain an active interest in other special status species that have no legal protection under the ESA. Special status wildlife species discussed in this document include those listed on the Idaho BLM State Sensitive Species List and those afforded protection under the Bald and Golden Eagle Protection Act (BGEPA) with potential to occur within the allotments. Two birds and one amphibian species listed as candidates under the ESA, and 7 mammals, 12 birds, one reptile, three

amphibians, one fish, and one invertebrate with special status could potentially occur within the Nickel Creek FFR Allotment.

IDFG documented Columbia River redband trout (*Oncorhynchus mykiss gairdneri*) in Nickel Creek in Pastures 4 and 11, Deep Creek in Pastures 6, 19, and 21, Current Creek in Pasture 6, Smith Creek in Pasture 11, Castle Creek in Pasture 19, and Beaver Creek in Pasture 23. Columbia spotted frogs (*Rana luteiventris*) have been documented within Pastures 9, 11, and 23. Several bat species with special status (*Euderma maculatum*, *Myotis yumanensis*, *Myotis evotis*) have been documented on private land along Deep Creek in pasture 21. IDFG has identified that California Bighorn Sheep (*Ovis canadensis californiana*) may occur within potential habitat in pastures 19 and 25. Approximately 77% (1,496 acres) of BLM land within the allotment is identified as Greater Sage-grouse Preliminary Priority Habitat (PPH). Approximately 98% (1,912 acres) of BLM land within the allotment is identified as key sage-grouse habitat. No sage-grouse leks are known to occur within this allotment. See Section 3.4 Fish and Wildlife/Special Status Animals in the Nickel Creek FFR EA for additional information.

Evaluation:

Upland Wildlife Habitat

The 2003 Determination identified that Standard 8 was not being met for shrub-steppe obligate, ground nesting, and foraging species such as northern harriers, small mammals, reptiles, and some neotropical migratory birds. A lack of desirable grass species in all but one pasture was resulting in inadequate concealment cover for ground nesting birds and may have limited populations of small mammals and insects that are important prey for other special status animals.

2011 field observations showed similar conditions as described in the 2003 Determination. Reductions in deep rooted perennial grasses are still likely limiting effective cover for ground nesting and foraging species such as sage-grouse, northern harriers, and some neotropical migratory birds. The presence of invasive species is also contributing to reduced cover, forage production, and habitat quality for some special status animal species. Livestock utilization monitoring at the end of 2011 and 2012 documented use in all pastures as < 40% and several sites with little or no utilization. See Standard 4 for additional information.

The occurrence of western juniper on BLM lands is generally low throughout most of the allotment. However, various levels of juniper encroachment do occur on approximately 38% of key sage-grouse habitat found on BLM lands in the allotment and is common in Pastures 4, 9, 11, and 14. Juniper can provide important habitat for a number of species, but it may also help contribute to a reduction in habitat for sage-grouse and other sagebrush obligate species.

In 2012, BLM personnel conducted three sage-grouse habitat assessments within PPH on the Nickel Creek FFR Allotment (Table 3). Assessments indicate that multiple seasonal habitat types occurred within the allotment (winter, breeding, summer, and late-brood rearing) and exhibited varying suitability ratings (suitable, marginal, and unsuitable). Unsuitable to marginal sage-grouse breeding and upland summer habitat determinations were due to a reduction in large stature perennial bunchgrasses, dominance of Sandberg bluegrass in the understory, and low preferred forb diversity and abundance. Assessments also indicated that the allotment is providing suitable sage-grouse winter habitat at all sites assessed. No sage-grouse leks are known to occur within this allotment.

Table 3. 2012 sage-grouse habitat assessment seasonal habitat summary

Site & Ecosite	Pasture	Sage-grouse Seasonal Habitat Type		
		Breeding	Upland Summer	Winter
0657-11-11S04W14a-2012 Shallow Claypan	11	Suitable	Suitable	Suitable
0657-21-12S03W15a-2012 Loam	21	Unsuitable	Unsuitable	Suitable
0657-25-13s03w22a-2012 Loam	25	Marginal	Marginal	Suitable

Evaluation Finding – Allotment is (check one):

Meeting the Standard

Not meeting the Standard, but making significant progress toward meeting

Not meeting the Standard

Evaluation Rationale

Upland Wildlife Habitat

The Nickel Creek FFR Allotment is not meeting the Standard for threatened and endangered animals in upland areas, as indicated by the reduction of large bunchgrasses and the presence of invasive plant species. The reduction in deep rooted perennial grasses is likely limiting concealment cover for ground nesting and foraging species such as sage grouse, northern harriers, and other neotropical migratory birds. The presence of invasive species is also contributing to reduced cover and forage production for some special status species. Juniper encroachment is likely not reducing habitat requirements for big game and other large animals, but may help contribute to a reduction in habitat for sage-grouse and other sagebrush obligate species. The combination of increasing invasive plants and historic soil loss are not allowing the plant communities to make significant progress toward meeting Standard 8.

Determination:

Special Status Animals

Determination Finding: The Nickel Creek FFR Allotment is (check one or more):

Meeting the Standards

Not Meeting the Standards, but making significant progress toward

Conforms with Guidelines for Livestock Grazing Management

Not Meeting the Standards; Current Livestock Grazing Management Practices are Significant Factors

Not Meeting the Standards; Current Livestock Grazing Management Practices are **not** Significant Factors

Does not conform with Guidelines for Livestock Grazing Management Guidelines No(s)

Determination Rationale

Upland Wildlife Habitat

Standard 8 is not being met in the Nickel Creek Allotment, as described above, and no significant progress in improving the health of upland wildlife habitat is indicated by available

data. Current livestock grazing management does not appear to be a significant causal factor because it appears that recent grazing practices are adequate for maintaining the current, reduced density of large bunchgrasses. The combination of increasing invasive plants and historic soil loss is not allowing the plant communities to make significant progress toward meeting standards.

The primary factors for not meeting Standard 8 in upland wildlife habitat are historical grazing and invasive plants. Current grazing management, with relatively light utilization, particularly during the critical growing season, does not appear to be significantly affecting the native plant community, so it appears that current management conforms to livestock grazing management guidelines.

Evaluation:

Riparian Wildlife Habitat

The 2003 Determination with updated lotic PFC assessments in the Nickel Creek FFR Allotment are used to evaluate areas of riparian wildlife habitat for Standard 8. The 2003 Determination identified that Standard 8 was not being met for redband trout on all 1.3 miles of assessed stream riparian habitat on Castle, Smith, and Deep creeks. Unstable streambanks and channels on functioning at risk segments of Castle, Deep, and Smith creeks reduced the living space for redband trout. Stream temperatures in these creeks also exceeded State of Idaho criteria to fully support cold water biota beneficial uses.

Two lotic PFC assessments were conducted in 2011 on a 0.32 mile segment of Castle Creek in Pasture 14 and a 0.40 mile segment of Smith Creek in Pasture 11. Both were rated as functional at-risk (FAR) with apparent upward trends. This upward trend is due to expanding riparian plant communities, adequate plant vigor, and minimal impacts from livestock such as hoof shearing, heavy woody browse use, or heavy livestock utilization. Young willows and mature sedges and rushes were observed along both stream reaches and plant vigor appeared to be appropriate for the site. Deeply entrenched channels, increased width-to-depth ratio, and excessive bedload (sediment) were observed and are contributing excess sediment to stream channels and increasing stream temperatures, which reduces suitable redband trout and spotted frog habitat. Stream temperatures and sedimentation levels in Castle, Deep, Nickel, and Smith creeks also exceeded State of Idaho criteria to fully support cold water biota beneficial uses. See Standards 2, 3, and 7 for additional information.

Evaluation Rationale

Riparian Habitat

The Nickel Creek FFR Allotment is not meeting the Standard for threatened and endangered animals in riparian areas, as indicated by excess sediment and elevated water temperatures in Smith, Castle, and Deep creeks. Excess sediment and elevated water temperature reduce the quality of redband trout and riparian obligate wildlife habitat.

Significant progress toward meeting Standard 8 is indicated by recent improvements in hydric vegetation. Riparian vegetation (carex, rushes, and young willows) is establishing on sand bars and bedload deposits in Smith and Castle creeks. These riparian plants shade the streams thereby lowering water temperature, have root systems capable of holding and securing streambanks

during high flow events, and slow flows and effectively buffer sediment and other contaminants from the upland area, thereby decreasing the sediment load. These changes will result in improved habitat conditions for species like redband trout, spotted frogs, and other riparian-obligate species.

Determination:

Special Status Animals

Determination Finding: The Nickel Creek FFR Allotment is (check one or more):

- Meeting the Standards
- Not Meeting the Standards, but making significant progress toward
- Conforms with Guidelines for Livestock Grazing Management
- Not Meeting the Standards; Current Livestock Grazing Management Practices are Significant Factors
- Not Meeting the Standards; Current Livestock Grazing Management Practices are **not** Significant Factors
- Does not conform with Guidelines for Livestock Grazing Management Guidelines No(s)

Determination Rationale

Riparian Habitat

Standard 8 is not being met in riparian areas of the Nickel Creek FFR Allotment, as indicated by excess sediment and elevated water temperatures in Smith, Castle, and Deep creeks. Because most of Deep Creek is not accessible to livestock, elevated water temperatures and sediment levels in Deep Creek are primarily the result of land use practices on adjacent, upstream grazing allotments and private lands. The presence of dense herbaceous riparian vegetation with multiple age classes indicates that current livestock grazing is not negatively impacting riparian vegetation along Smith and Castle creeks and that grazing conforms with guidelines for livestock grazing management.

Significant progress toward meeting Standard 8 is indicated by recent improvements in hydric vegetation. Riparian vegetation (carex, rushes, and young willows) is establishing on sand bars and bedload deposits in Smith and Castle creeks. These riparian plants shade the streams thereby lowering water temperature, have root systems capable of holding and securing streambanks during high flow events, and slow flows and effectively buffer sediment and other contaminants from the upland area, thereby decreasing the sediment load. These changes will result in improved habitat conditions for species like redband trout, spotted frogs, and other riparian-obligate species.

Summary of Evaluation and Determination

Check one box for each	Standards							
	1	2	3	4	5	6	7	8
	Watersheds	Riparian	Stream Channel	Native Plant Communities	Seedings	Exotics (not seeded)	Water Quality	T& E
Meeting the Standard								X Special Status Plants
Not Meeting the		X	X				X	X

Standard, but making significant progress toward								Special Status Riparian Wildlife
Not Meeting the Standard; current livestock grazing practices are not significant factors	X			X				X Special Status Upland Wildlife
Not Meeting the Standard; current livestock grazing practices are a significant factor								
Not Meeting the Standard; cause not determined								
Standard does not apply					X	X		
Guidelines for Livestock Grazing								
Conforms with Guidelines for Livestock Grazing Management?							Yes	
If no, list the Guidelines not in conformance: N/A								

Field Manager

Date