

UNITED STATES DEPARTMENT OF THE INTERIOR
BLM, LOWER SNAKE RIVER DISTRICT

EA #ID096-2004-009 Title Page

Applicant (if any): BLM Action	Proposed Action: Grazing Permit Renewals for Nickel Creek and Nickel Creek FFR Allotments			EA No. ID-096-2004-009
State: Idaho	County: Owyhee	District: Lower Snake River	Field Office: Owyhee	Authority: NEPA, FLPMA, & Taylor Grazing Act
Prepared By: OFO ID Team	Title: Various			Report Date: November 6, 2003

LANDS INVOLVED

Meridian	Township	Range	Sections	Acres
Boise	9S -13S	2W- 4W	Various, see maps	69,248

<u>Consideration of Critical Elements</u>	N/A or Not Present	Applicable or Present, No Impact	Discussed in EA
Air Quality	X		
Areas of Critical Environmental Concern			X
Cultural Resources			X
Environmental Justice (E.O. 12898)	X		
Farm Lands (prime or unique)	X		
Floodplains			X
Migratory Birds			X
Native American Religious Concerns	X		
Invasive, Nonnative Species			X
Wastes, Hazardous or Solid	X		
Threatened or Endangered Species			X
Social and Economic			X
Water Quality (Drinking/Ground)			X
Wetlands/Riparian Zones			X
Wild and Scenic Rivers (Eligible)			X
Wilderness Study Areas			X

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Grazing Permit Renewals for the Nickel Creek Area Allotments

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Environmental Assessment #ID096-2004-009

Grazing Permit Renewals for the Nickel Creek Area Allotments

1.0 Introduction

1.1 Grazing Allotment and Permit Background

For this environmental assessment, grazing alternatives for the Nickel Creek (#00548) and Nickel Creek FFR (#00657) allotments are analyzed in one document. The area as a whole will be referred to as the Nickel Creek Area. The allotments are located in Owyhee County, Idaho, approximately 30 miles southeast of Jordan Valley, Oregon (Maps 1N, 1S). Nickel Creek FFR Allotment is contained entirely within the Nickel Creek Allotment. The Nickel Creek Allotment is bordered by the North Fork of the Owyhee River on the north, Deep Creek on the east, Owyhee River on the south, and Juniper Mountain on the west.

A Proposed Decision to issue a grazing permit on the Nickel Creek Allotment was issued on July 25, 2003. The associated National Environmental Policy Act (NEPA) document analyzing the environmental impacts of the Proposed Decision was EA # ID-096-2003-051. The Proposed Decision was protested by the Committee for the High Desert, Western Watershed Project, Juniper Mountain Grazing Association, LLC, Idaho Bird Hunters, Inc., and Ada County Fish and Game League. The Proposed Decision was modified to address concerns raised by those protests. This EA (ID-096-2004-009) reflects the Final Decision.

The Nickel Creek Allotment includes 67,604 acres of public lands in 18 pastures and the Nickel Creek FFR Allotment includes 1,644 acres of public lands in nine pastures (USDI 2003a). Juniper Mountain LLC is currently permitted for 880 cattle and 5,093 animal unit months (AUMs) (plus 1,519 AUMs of Suspended Use) in the Nickel Creek Allotment and 109 cattle and 109 AUMs in the Nickel Creek FFR Allotment (USDI 2003a).

Based on an assessment of the Nickel Creek and Nickel Creek Fenced Federal Range (FFR) allotments completed in 2003 (USDI 2003a), it was determined that Idaho Standards for Rangeland Health were not being met for watersheds, riparian areas and wetlands, stream channel/floodplain, native plant communities, water quality, and threatened and endangered plants and animals in many pastures of both allotments (USDI 2003b, 2003c). Standards were not being met because:

- active erosion was evident in many areas;
- downward trends in upland vegetation were apparent in six pastures;
- the majority of springs and approximately 22 miles (68% of total) of streams were in functioning at risk condition; and
- sage grouse breeding habitat and late brood rearing habitat were marginal in 36% and 80%, respectively, of sample areas.

Current livestock grazing management practices are a significant factor for not meeting the standards in many areas in the allotments (USDI 2003b, 2003c).

The purpose of the proposed action is to modify current grazing practices by adjusting timing and levels of livestock use so that progress can be made toward meeting the standards.

1.2 Conformance with the Land Use Plan

The Owyhee Resource Management Plan and Environmental Impact Statement (RMP/EIS) was approved on December 30, 1999. The land use plan guides public land management, including the grazing management program, in the area where the subject allotments are located. The proposed action is in conformance with the Owyhee RMP/EIS, as required by 43 CFR 1610.5-3(a). Specifically, the proposed action is designed to achieve Objective LVST 1 (identified on page 23 of the Owyhee RMP/EIS), which is to provide for a sustained level of livestock use compatible with meeting other resource objectives. Also, the proposed action is in conformance with other Owyhee RMP/EIS objectives for soils, water, vegetation, riparian/wetland, fisheries, special status species, recreation, visual resources, cultural resources, and Wilderness Study Areas.

The Standard and Guideline Assessments and Determinations were completed on July 24, 2003 (USDI 2003a, 2003b, 2003c). This EA is tiered to the 1999 RMP/EIS. Copies of the RMP/EIS are available at BLM's Lower Snake River District Office, and the document is also available for viewing and downloading on BLM's Idaho State Office Internet web site <http://www.id.blm.gov/>. The RMP/EIS broadly analyzes environmental issues relating to public land uses and resource allocations. Consistent with the provisions of 40 CFR 1502.20, the environmental analysis included in the RMP/EIS is incorporated here by reference, and this EA focuses on the environmental issues specific to renewing livestock grazing permits for allotments found within the Nickel Creek Assessment Area.

1.3 Relationship to Statutes, Regulations, and Other Requirements

1.3.1 Standards and guidelines

On August 12, 1997, Idaho Standards for Rangeland Health and Guidelines for Livestock Grazing Management[®] were approved by the Secretary of the Interior. Subsequently, livestock management practices must be in conformance with the approved standards and guidelines.

The BLM completed Standards and Guidelines Assessments and Determinations for the Nickel Creek and Nickel Creek FFR allotments on July 24, 2003 (USDI 2003a, 2003b, 2003c). The BLM's Authorized Officer determined that in the above allotments, existing grazing management practices or levels of grazing use on public lands are significant factors in failing to achieve the standards for rangeland health and conform with the guidelines for grazing administration. Current grazing practices do not result in adequate ground cover, provide periodic rest or deferment during the critical growth period, provide sufficient residual riparian vegetation to maintain riparian/wetland functions, or maintain plant vigor.

1.3.2 Federal Order

On March 31, 1999, B. Lynn Winmill, Chief Judge, U.S. District Court, signed a Memorandum Decision and Order (Civil Case No. 97-0519-S-BLW) finding that BLM violated NEPA by renewing 68 grazing permits in 1997. That decision did not impose a remedy to cure the NEPA violation. However, on February 29, 2000, B. Lynn Winmill signed a Memorandum Decision and Order (Civil Case No. 97-0519-S-BLW) that directs the BLM to complete the review of 68 grazing permits under the new Owyhee RMP/EIS and the BLM's Standards and Guidelines for the highest priority allotments by the end of 2003, and the remaining allotments by the end of 2006.

2.0 Description of the Alternatives

2.1 Alternative A – No Action

The “no action” equates to “not issuing the grazing permit.” Alternative A would remove all livestock from the 69,248 acres of public lands in the Nickel Creek and Nickel Creek FFR allotments. The 5,093 active permitted AUMs in the Nickel Creek Allotment and the 109 AUMs in the Nickel Creek FFR Allotment would not be activated for livestock grazing use.

2.1.1 Grazing Management

If implemented, the no grazing alternative would remove all livestock from public lands on the Nickel Creek and the Nickel Creek FFR allotments.

2.2 Alternative B – Continue the Present Situation

The current grazing permit would be renewed without modification. Current grazing practices and management would continue and no rangeland management projects would be constructed. No livestock use restrictions would be placed on specific pastures other than those implied by the terms and conditions associated with the permit (Section 2.2.2).

2.2.1 Permitted Use

Permitted use would be 5,093 AUMs for the Nickel Creek Allotment and 109 AUMs for the Nickel Creek FFR Allotment (Table 2) (Maps 1N, 2S). Livestock use would occur between 4/15 and 10/31 in the Nickel Creek Allotment and between 12/1 and 12/31 in the Nickel Creek FFR Allotment.

The Nickel Creek allotment boundary would be adjusted per the Owyhee RMP/EIS to move portions of the Nickel Creek Allotment boundary from the Owyhee River to the top of the northern/western canyon rim and move the allotment boundary from Deep Creek to the top of the western canyon rim (Map 2S). These changes in the allotment boundary would result in the exclusion of approximately 1,429 acres.

Table 2. Permitted, season, and type of grazing use for Juniper Mountain LLC (Operator #1101410), Alternative B, Nickel Creek and Nickel Creek FFR Allotments, Owyhee County, Idaho.

Allotment	Livestock No. & Kind	Start Date	End Date	% Public Land	Suspended AUMs	Permitted AUMs
Nickel Creek	880 Cattle	4/15	10/31	88%	1,519	5,093
Nickel Creek FFR	109 Cattle	12/1	12/31	100%	0	109

2.2.2 Grazing Management

Livestock use of the allotments would be determined on a yearly basis, prior to turnout in the spring. To allow for a comparison with other alternatives, pasture use between 1986 and 2001 for the Nickel Creek Allotment was summarized based on actual use reports (Table 3). The assessments contain a more detailed description of historic livestock use in the allotments (USDI 2003a).

Table 3. Average periods and levels of use between 1986 and 2001, Nickel Creek Allotment, Owyhee County, Idaho.

Pasture	Use Period		% Rested (1986-2001) ^a	Average AUMs ^b	
	Range of Use (1986-2001)	Average Start/End (1995-2001)		(1986-2001)	(1995-2001)
1	5/17-11/5	6/10 – 8/25 (5/24 – 8/5, 7/15 – 10/5)	0	597	650
2	4/15 – 11/4	4/15 – 5/22	0 ^c	337	324
3	6/13 – 11/15			44	41
5	4/15 – 9/30	6/12 – 8/7 (variable)	13	252	259
7	4/15 – 11/10	8/2 – 10/9	0	668	717
8	4/15 – 11/5	6/3 – 9/18	0	586	473
10	5/20 – 11/4	9/29 – 10/28	0	184	186
13	4/15 – 10/16	8/1 – 9/17 (variable)	19	223	268
16A	4/15 – 8/30	4/26 – 5/31 (4/18 – 5/31)	25	162	154
16B	4/15 – 8/30	5/6 – 6/20 (4/15 – 6/15)	25	194	157
17	6/1 – 11/15	8/2 – 9/9	13	258	327
18	4/15 – 8/31	6/12 – 7/23	13	329	326
20	4/1 – 5/21	4/4 - 4/22 (4/2 – 4/19)	19	130	107
22	4/1 – 8/1	4/5 - 4/18 (4/2 – 4/16)	19	76	88
23	3/25 – 7/15	(4/5 – 4/18)	31	99	85
26A	4/14 – 6/25	4/20 – 5/26	38	520	435
26B	4/1 – 6/25	4/16 – 5/16	38	439	488
27	4/15 – 8/4	5/26 – 7/13	6 ^d	715	610

^a percent of time rested between 1986 and 2001

^b Rest periods were not included in determining average use

^c Rested for wildfire recovery during 2001 and growing season in 2002.

^d Rested for wildfire recovery during 1987-1988.

2.2.3 Terms and Conditions

The following permit terms and conditions would apply to each renewed grazing permit:

- 1) Livestock grazing will be in accordance with your allotment grazing schematic(s). Changes in scheduled pasture use dates will require prior authorization.
- 2) Turnout is subject to Boise District Range Readiness Criteria.
- 3) Your certified actual use report is due within 15 days of completing your authorized annual grazing use.
- 4) Salt and/or supplement shall not be placed within one quarter (1/4) mile of springs, streams, meadows, aspen stands, playas, or water developments.
- 5) Change to the scheduled use requires prior approval.
- 6) Trailing activities must be coordinated with the BLM prior to initiation. A trailing permit or similar authorization may be required prior to crossing public lands.
- 7) Livestock enclosures located within your grazing allotments are closed to all domestic grazing use.
- 8) Range improvements must be maintained in accordance with the cooperative agreements and range improvement permits in which you are a signatory or assignee. All maintenance of range improvements within a wilderness study area requires prior consultation with the authorized officer.
- 9) All appropriate documentation regarding base property leases, lands offered for exchange-of-use, and livestock control agreements must be notarized prior to submission and be in compliance with Boise District Policy.
- 10) Failure to pay the grazing bill within 15 days of the due date specified shall result in a late fee assessment of \$25.00 or 10 percent of the grazing bill, whichever is greater, not to exceed \$250.00. Payment made later than 15 days after the due date shall include the appropriate late fee assessment. Failure to make payment within 30 days may be a violation of 43 CFR 4140.1 (B) (1) and shall result in action by the authorized officer under 43 CFR 4150.1 and 4160.1.
- 11) Livestock grazing will be in accordance with your allotment grazing schematic(s). Changes in scheduled pasture use dates will require prior authorization.
- 12) Utilization may not exceed 50% of the current year's growth.
- 13) Early use (March 15 to April 14) may be authorized on an annual basis in the School Section (20), Rock (22), and Airport (23) pastures of the Nickel Creek Allotment (#00548).

- 14) A minimum 4 inch stubble height will be left on herbaceous vegetation within the riparian area along 4.6 miles of Current Creek in allotment #00548 at the end of the growing season as identified in the fisheries objective of the Owyhee EIS.
- 15) The number of livestock and season of use on the fenced in federal range (FFR) allotment (#00657) is at your discretion. Allotment #00657 consists of pastures 4, 6, 9, 11, 12, 14, 19, 21, 24, and 25.

As a result of the February 29, 2000, Memorandum Decision and Order by Judge B. Lynn Winmill, the following interim terms and conditions now apply:

- 1) Key herbaceous riparian vegetation, where streambank stability is dependent upon it, will have a minimum stubble height of 4 inches on the streambank, along the greenline after the growing season;
- 2) Key riparian browse vegetation will not be used more than 50% of the current annual twig growth that is within reach of the animals;
- 3) Key herbaceous riparian vegetation on riparian areas, other than the streambanks, will not be grazed more than 50% during the growing season, or 60% during the dormant season; and
- 4) Streambank damage attributable to grazing livestock will be less than 10% on a stream segment.

2.2.4 Rangeland Management Projects

No rangeland developments would be constructed under this alternative. Maintenance of existing projects would be accomplished with motor vehicle use limited to established roads.

2.3 Alternative C – Proposed Action

Under this alternative, the Nickel Creek Allotment would have three separate management units. Livestock grazing would be implemented as outlined below for Nickel Creek Allotment Units 1, 2, and 3. The Nickel Creek FFR Allotment would be managed separately from the Nickel Creek Allotment (Section 2.2.2.2). The proposed action would be as follows:

- 1) Issue a grazing permit (Operator Number 1101410) for a 10-year period from 3/1/2004 to 2/28/2014.
- 2) Specify the kind and number of livestock, periods of use, allotments and pastures to be used, and amount of use (Sections 2.3.1, 2.3.2).
- 3) Specify terms and conditions (Section 2.3.3) and management guidelines (Section 2.3.4) for livestock use.
- 4) Consistent with the Owyhee RMP, adjust/relocate portions of the Nickel Creek Allotment boundary to move portions of the Nickel Creek Allotment boundary from the Owyhee

River to the top of the northern/western canyon rim and move the allotment boundary from Deep Creek to the top of the western canyon rim (Map 2S). These changes in the allotment boundary would result in the exclusion of approximately 1,429 acres.

5) Identify rangeland management projects required to implement the decision (Section 2.3.5).

2.3.1 Active Use

The Nickel Creek Allotment has 5,093 AUMS of active use. This decision transfers 32 of these AUMS from the Nickel Creek Allotment to the Nickel Creek FFR Allotment (Table 5), leaving a balance of 5,061 AUMS in the Nickel Creek Allotment (Table 4).

With the Grazing Management specified in Sections 2.3.2-6, 4,764 AUMS would be scheduled for use in Units 1 – 3 of the Nickel Creek Allotment. In accordance with 43 CFR 4130.3-2 (f), the 297 AUMs that are not scheduled in the specified grazing rotations would be temporarily delayed (discontinued) for the term of this permit to allow for the restoration of vigor of plants, provide for improvement of riparian areas to achieve proper functioning condition, allow for rapid improvement to be made in meeting Idaho Standards and Guidelines, and improving pastures in downward trend within the Nickel Creek Allotment.

Table 4. Permitted, season, and type of grazing use for Juniper Mountain LLC (Operator #1101410), Alternative C, Nickel Creek Allotment (#00548), Owyhee County, Idaho.

Allotment	Livestock No. & Kind	Start Date	End Date	% Public Land	Suspended AUMs	Active AUMs
Nickel Creek Unit 1	300 Cattle	5/1 ^a	11/5	94	See below	1752
Nickel Creek Unit 2	255 Cattle	4/15	10/9	97	See below	1448
	75 Cattle	10/1 ^b	10/15	100		37
	110 Cattle	4/15 ^c	4/21	100		25
Nickel Creek Unit 3	250 Cattle	4/1	9/29	94	See below	1406
	100 Cattle	4/1 ^d	4/30	97		96
Totals Active AUMs						5,061 ^e
Suspended AUMs					1,519	

^a Season of use may begin as early as April 15 for unit 1 as long as range readiness criteria are met and all other multiple use objectives are being met. During the grazing season for Unit 1, 17 days of use would be made on private discretionary pastures in years 1 and 2. A total of 189 days of grazing is outlined on the grazing schematic for Unit 1 on the public lands with 17 days being incorporated on the private, discretionary pastures. If early use is made in Unit 1, AUM totals for Unit 1 may not be exceeded except within the allowable limits that are consistent with the flexible move dates between pastures.

^b Pasture 10 may be used for a total of 15 days anytime after October 1 annually. AUM total for pasture 10 would be 37 AUMs

^c Pasture 320 would have a total of 7 days of unrestricted season of use annually. AUM total for pasture 320 would be 25 AUMs.

^d In pasture 27A, use in even years would be from 4/1 to 4/30 and use in odd years would be from 5/1 to 5/30.

^e 297 of these AUMs would be temporarily discontinued from active use by Term and Condition, per 43 CFR 4130.3-2 (f)

One-hundred and forty-one AUMs (including the 32 AUMs transferred from the Nickel Creek Allotment) would be scheduled for use in the Nickel Creek FFR Allotment (Table 5).

Table 5. Permitted, season, and type of grazing use for Juniper Mountain LLC (Operator #1101410), Alternative C, Nickel Creek FFR Allotment, Owyhee County, Idaho.

Allotment Name	Pastures	Season of Use ¹	Livestock Class & Numbers	Percent Public Land	Active AUMs	Suspended AUMs
Nickel Creek FFR	4, 6, 9, 10P, 11, Star Reservoir ^a , 14, 19, 21, 24, 25	138 Cattle	12/1 – 12/31 ^b	100%	141	0

^aAfter July 15, the Star Reservoir Pasture may be used at the operator’s discretion as long as resource degradation does not occur on public lands.

^b The 12/1 to 12/31 dates are for billing purposes only. Season of use and livestock class and numbers are not restricted in the Nickel Creek FFR pastures as long as resource degradation does not occur on public lands. Utilization should not exceed 50% on the public land within the FFR pastures.

2.3.2 Grazing Management

Livestock grazing in the Nickel Creek Allotment would be managed in three separate management Units (1, 2, and 3). The Nickel Creek FFR Allotment would be managed separately (Section 2.3.3.2). Livestock grazing would be in accordance with the grazing schematic outlined below for Units 1, 2, and 3 (Section 2.3.3.1). Livestock rotations would follow a two-year rotation for Unit 1 and a four-year rotation for Units 2 and 3.

2.3.2.1 Nickel Creek Allotment (0548)

Management would be implemented in three separate units. Stocking densities by pasture would range between 12 and 20 acres/AUM (Appendix A).

Unit 1

Three hundred cattle would graze Unit 1 beginning May 1 and ending November 5 under a two-year rotation (Table 6). Pastures would be rotated so that grazing would not occur during the critical growth period in consecutive years. Pastures with riparian areas identified for improvement (Battleground - 1, Stoneman - 2) would be grazed primarily in spring or late fall to reduce concentrated use in riparian areas. During year 2 in pasture 1, livestock would be held at the southern end of the pasture for the month of September through the use of salt/mineral/protein supplements and active herding of livestock. Herding would also be required in pasture 1 to limit livestock use in the North Fork Owyhee Juniper Woodland and

Pleasant Valley Table ACECs. During the grazing season, 17 days of use in Unit 1 would be made in private and/or discretionary pastures (pastures with small percentages of public land) in years 1 and 2.

Table 6. Permitted, season, and type of grazing use for Juniper Mountain LLC (Operator #1101410), Unit 1, Alternative C, Nickel Creek Allotment, Owyhee County, Idaho.

Pasture Name (Number)	Livestock Class & Number	AUMs by Pasture	Authorized Use Period		
			Year 1	Year 2	Year 3
Discretionary/Private	N/A	N/A	4/15 – 4/30 ^a	8/16 – 8/31	Repeat cycle
Battleground (1) ^c	300 Cattle	593	5/1 – 7/3	9/1 – 11/3 ^c	
Hidden Valley (8A)	300 Cattle	204	7/4 – 7/25	7/25 – 8/15	
Boni Table (8B)	300 Cattle	621	7/26 – 9/30	5/21 – 7/24 ^b	
Stoneman (2)	300 Cattle	334	10/1 – 11/5	4/15 – 5/20 ^{a, d}	

^a Season of use may begin as early as April 15 for Unit 1 as long as range readiness criteria are met and all other multiple use objectives identified in this decision are being met. A total of 189 days of grazing is outlined on the grazing schematic for Unit 1 on the public lands including 17 days being incorporated on the private and/or discretionary pastures. If early use is made in year 2, AUMs may not be exceeded by pasture except within the allowable limits that are consistent with the flexible move dates between pastures.

^b During year 2, a total of 603 AUMs would be used in the Boni Table 8B pasture. In pasture 8B, AUMs would vary from 621 in year 1 to 603 in year 2, and stocking rates would vary between 12 – 13 acres/AUM.

^c In pasture 1, if riparian areas do not exhibit an upward trend in condition by year 4, then frequency and/or duration of hot season grazing would be altered to be similar to that in other riparian pastures in the Nickel Creek Allotment. Any changes would be made through a proposed decision in accordance with 43 CFR 4160-Administrative Remedies (43 CFR 4160.1). Trend in riparian condition would be monitored using greenline transects. Increase in cover of herbaceous riparian vegetation and riparian shrubs on the greenline and increased bank stability are the indicators that would be used to evaluate trend. Monitoring transects would be established in coordination with permittees and interested publics.

^d In pasture 2, if Stoneman Creek does not have an upward trend in condition by year 4, then alternative management actions would be implemented such as placing juniper revetments on eroding banks and planting sedges and willows, and/or the stream would be fenced temporarily to revegetate highly-erodible streambanks formed of fine-grained soils that are currently incised and weakly vegetated with disturbance-induced plant communities. If the stream is temporarily fenced, the fence would remain in place until bank stability is $\geq 85\%$, and bare soil is $\leq 10\%$. Trend would be monitored and assessed.

^e In pasture 1, salting is prohibited in the Pleasant Valley Table ACEC, in accordance with the Owyhee RMP. Due to the poor condition of upland communities in the North Fork Juniper Woodland ACEC and to provide maximum protection of these communities, salt is prohibited within and adjacent to the ACEC in accordance with the Owyhee RMP.

Unit 2

Cattle would graze Unit 2 beginning April 15 and ending October 9 under a four-year rotation (Table 7). The herd size for Unit 2 would be 255 cattle, with the exception of pastures 320 (110 cattle) and 10 (75 cattle). Pastures would be rotated so that grazing would not occur during the entire critical growth period in consecutive years. Pastures with riparian areas identified for

improvement would be grazed only in spring or late fall and/or no more than one year in four during the hot season in order to meet riparian objectives.

Table 7. Permitted, season, and type of grazing use for Juniper Mountain LLC (Operator #1101410), Unit 2, Alternative C, Nickel Creek Allotment, Owyhee County, Idaho.

Pasture Name (Number)	Livestock Class & Number	Authorize Use Period & AUMs by Pasture				
		Year 1	Year 2	Year 3	Year 4	Year 5
Castle Ck. (13)	255 Cattle	4/15 – 5/4	8/19 – 9/7	4/15 – 5/2	5/9 – 5/26	Repeat Cycle
		163 AUMs	163 AUMs	146 AUMs	146 AUMs	
Fall Field (7B)	255 Cattle	5/5 – 6/15	5/7 – 6/15	9/4 – 10/5	5/27 – 6/30	
		342 AUMs	325 AUMs	260 AUMs	285 AUMs	
Castro Table (16B)	255 Cattle	6/16 – 7/15	9/8 – 10/5	5/31 – 6/29	9/3 – 10/2	
		244 AUMs	228 AUMs	244 AUMs	244 AUMs	
Star Table (16A)	255 Cattle	7/16 – 8/6	4/15 – 5/6	5/3 – 5/30	4/15 – 5/8	
		179 AUMs	179 AUMs	228 AUMs	195 AUMs	
Fall Field (7A)	255 Cattle	8/7 – 9/5	6/16 – 7/15	8/3 – 9/3	7/1 – 7/30	
		244 AUMs	244 AUMs	260 AUMs	244 AUMs	
Spring Field (5)	255 Cattle	9/6 – 10/9	7/16 – 8/18	6/30 – 8/2	7/31 – 9/2	
		276 AUMs	276 AUMs	276 AUMs	276 AUMs	
Pasture (320) ^a	110 Cattle	4/15 – 4/21	4/15 - 4/21	4/15 – 4/21	4/15 - 4/21	
		25 AUMs	25 AUMs	25 AUMs	25 AUMs	
Upper Smith Creek (10) ^b	75 Cattle	10/1 – 10/15	10/1-10/15	10/1 – 10/15	10/1–10/15	
		37 AUMs	37 AUMs	37 AUMs	37 AUMs	

^a Pasture 320 may be used for a seven day period with up to 110 head of cattle for a total of 25 AUMs. Season of use is not restricted as long as over-use does not occur on the public land. AUMs may not be exceeded except within the allowable limits that are consistent with the flexible move dates between pastures.

^b Pasture 10 may be used annually for a total of 15 days anytime after October 1 for a total of 37 AUMs.

Unit 3

Cattle would graze Unit 3 of the Nickel Creek Allotment beginning April 1 and ending September 21 or 29 (depending on the year) under a four-year rotation (Table 8). The herd size for Unit 3 is 250 cattle with the exception of pasture 27A (100 cattle). Pastures would be rotated and rest incorporated so that grazing would not occur during the entire critical growth period in consecutive years. Pastures with riparian areas identified for improvement (17, 20/22, 27A) would be grazed only in spring and/or no more than one year in four during the hot season in order to meet riparian objectives.

Table 8. Permitted, season, and type of grazing use for Juniper Mountain LLC (Operator #1101410), Unit 3, Alternative C, Nickel Creek Allotment, Owyhee County, Idaho.

Pasture Name & Number	Livestock Class & Number	Authorize Use Period & AUMs by Pasture				
		Year 1	Year 2	Year 3	Year 4	Year 5
Sheep Hills 26A	250 Cattle	5/17 – 7/1	REST	5/17 – 7/1	REST	Repeat Cycle
		355 AUMs	0 AUMs	355 AUMs	0 AUMs	
Sheep Hills 26B	250 Cattle	REST	5/17 – 7/1	REST	5/17 – 7/1	
		0 AUMs	355 AUMs	0 AUMs	355 AUMs	
Brace Flat 27B	250 Cattle	7/2 – 8/28	8/3 – 9/21	7/2 – 8/28	8/3 – 9/21	
		448 AUMs	386 AUMs	448 AUMs	386 AUMs	
Pasture 17	250 Cattle	4/27 – 5/16	4/27 – 5/16	4/27 – 5/16	4/27 – 5/16	
		155 AUMs	155 AUMs	155 AUMs	155 AUMs	
Ben Mills #18	250 Cattle	8/29 – 9/29	7/2 – 8/2	8/29 – 9/29	7/2 – 8/2	
		247 AUMs	247 AUMs	247 AUMs	247 AUMs	
Pasture 20/22	250 Cattle	4/1 – 4/26	4/1 – 4/26	4/1 – 4/26	4/1 – 4/26	
		201 AUMs	201 AUMs	201 AUMs	201 AUMs	
Badlands 27A ^{a, b}	100 Cattle	4/1 – 4/30	5/1 – 5/30	4/1 – 4/30	5/1 – 5/30	
		96 AUMs	96 AUMs	96 AUMs	96 AUMs	

^a In pasture 27A, one NPFT trend site or one greenline would be established in The Badlands ACEC in a representative plant community for which the ACEC was designated (California oatgrass-Idaho fescue or Idaho fescue community). The site or transect would be established in coordination with permittees and interested publics and would be established before the new grazing system is implemented. Management would be changed if monitoring shows a downward trend. Any changes would be made through a grazing decision in accordance with 43 CFR 4160-Administrative Remedies (43 CFR 4160.1).

^b In pasture 27A, salting would be prohibited in The Badlands ACEC, in accordance with the Owyhee RMP.

2.3.2.2 Nickel Creek FFR Allotment

Thirty-two AUMs would be transferred from the Nickel Creek Allotment to the Nickel Creek FFR Allotment. A total of 141 AUMs would now be associated with the public lands in the allotment (Table 5). With the addition of 32 AUMs, stocking densities would be 12 acres/AUM for the public lands within the Nickel Creek FFR allotment.

2.3.2.3 Flexibility in Management

Flexibility in livestock management would be allowed under the following conditions:

- 1) Permittees are authorized to begin moving livestock from pastures five days prior to the end date identified in the rotations outlined for Units 1, 2, and 3. Livestock will be completely removed from the pasture by the identified end dates and in the next scheduled use pasture in order to meet all riparian and upland objectives.

- 2) Livestock numbers will be coordinated between BLM and the permittee and may vary in accordance with annual grazing applications as long as the permitted use period and active AUMS are not exceeded. Variation in AUMS by pasture will be allowed to the extent in which they are consistent with flexible move dates between the pastures. Any changes to the outlined grazing rotations would require prior approval.

2.3.3 Terms and Conditions

The following terms and conditions would be included in the grazing permit to assist in achieving management guidelines, provide for proper range management, or assist in the orderly administration of the Public Rangelands:

- 1) Grazing within the Nickel Creek (#00548) and Nickel Creek FFR (#00657) allotments will follow the grazing management program and rotation schedules (Table 2 through 5 of final decision) outlined in the Final Grazing decision.
- 2) You are required to properly complete, sign and date an Actual Grazing Use Report Form (4130-5) for each allotment. The completed form(s) must be submitted to this office within 15 days from the last day of your authorized annual grazing use.
- 3) Supplemental feeding is limited to salt, mineral, and/or protein in block, granular, or liquid form. If used, these supplements must be placed at least one-quarter (1/4) mile away from any riparian area, spring, stream, meadow, aspen stand, playa, special status plant population, or water development. Special supplements intended to achieve livestock distribution would require prior approval.
- 4) Pursuant to 43 CFR 10.4(b), you must notify the BLM Field Manager, by telephone with written confirmation, immediately upon the discovery of human remains, funerary objects, sacred objects, or objects of cultural patrimony (as defined in 43 CFR 10.2) on federal lands. Pursuant to 43 CFR 10.4(c), you must immediately stop any ongoing activities connected with such discovery and make a reasonable effort to protect the discovered remains or objects.
- 5) Livestock grazing is not authorized in enclosures within the Nickel Creek Allotment (#00548) including spring enclosures and the Castle Creek riparian enclosure.
- 6) Livestock turnout dates are subject to Lower Snake River District (LSRD) range readiness criteria.
- 7) Within Wilderness Study Areas, the permittee/cooperator must notify BLM of major maintenance activities (e.g., dam or spillway repair or sediment removal) prior to conducting the work.
- 8) A total of 297 AUMS will be temporarily delayed (discontinued) from activation for the term of this permit to achieve management objectives for the public land and to ensure conformance with the provisions of subpart 43 CFR 4180.

2.3.4 Management Guidelines

Listed below are grazing management guidelines. Adherence to these guidelines and the prescribed grazing management program would assist in meeting or making significant progress toward meeting Standards for Rangeland Health and meeting land use plan objectives. Periodic collection, evaluation and interpretation of monitoring data could provide an indication of the potential success of the grazing management program.

- 1) Key areas would be established with the operators and the interested publics for monitoring of utilization levels. Utilization of bluebunch wheatgrass, needlegrass, bottlebrush squirreltail, or Idaho fescue should not exceed 50 percent utilization of the current year's growth as determined by the Landscape Appearance Method (Utilization Studies and Residual Measurements, Interagency Technical Reference 1996). Spring pastures that are grazed during the critical growth stage every year or nearly every year should not exceed 40 percent utilization of current year's growth on Idaho fescue, Thurber's needlegrass, or bluebunch wheatgrass as determined by the Landscape Appearance Method (Utilization Studies and Residual Measurements, Interagency Technical Reference 1996).
- 2) Utilization of bitterbrush should not exceed 30% of annual leader growth as determined by the Cole Browse Utilization Method within crucial deer winter range (pastures 26A, 26B, and 27). In all other pastures, utilization should not exceed 50% on bitterbrush. Additional key areas would be established where needed in cooperation with permittees and interested publics.
- 3) Key areas would be established with the permittee and the interested publics for monitoring of utilization levels. At these key areas in the The Badlands ACEC utilization of Idaho fescue, California oatgrass, bluebunch wheatgrass, needlegrass, or bottlebrush squirreltail should not exceed 40% of the current year's growth as determined by the Landscape Appearance Method.
- 4) A minimum of 4 inches of median stubble height should remain on key hydric herbaceous species, such as sedges, at the end of the growing season in pastures 1, 2, 7B, 10, 13, 16A, 17, 22, and 27A. When monitored, measurements would be taken on the greenline at key areas on Beaver, Castle, Current, Dons, Jobe, Little Smith, Little Thomas, Nickel, Skunk, Smith, Stoneman, Thomas, and Trap creeks.
- 5) In any particular year, in the riparian areas along those streams listed above, browsing on woody species, including but not limited to willow, should be limited to an incidence of use not to exceed 25 percent on young woody plants less than 3 feet in height as measured at key areas.
- 6) On the North Fork of the Owyhee River in the North Fork Juniper Woodland Juniper ACEC, and outside established water-gaps, a minimum of 6 inches of median stubble height should remain on key hydric herbaceous species such as sedges at the end of the growing season in pasture 1 in the North Fork Owyhee River. Monitoring and measurements would be taken on the greenline at key areas on the North Fork Owyhee River.

- 7) Streambank alteration attributable to livestock grazing (pugging, shearing, trails, trampling) should be less than 10 percent as measured at the key areas. Key areas would be established in cooperation with permittees and interested publics.
- 8) Within potentially suitable sites in pastures 16A, 16B, 18, 20/22, 26A, 26B and 27, grazing management would promote suitable sage grouse nesting and early brood-rearing habitat through the maintenance or achievement of adequate perennial grass and forb cover, height, and diversity. Monitoring sites would be selected and monitored in cooperation with the permittees and other interested publics near the end of the nesting season in late May or early June. This guideline may eventually be applied to other pastures if and when habitat is restored within juniper encroachment areas.

2.3.5 Rangeland Management Projects (Nickel Creek and Nickel Creek FFR Allotments)

Field investigations would be conducted to determine site suitability and feasibility of proposed rangeland management projects. Where necessary, changes would be made to plans on proposed projects to minimize impacts to sensitive plant and animal populations and cultural resources. Upon completion of all necessary clearances in accordance with the requirements of the National Environmental Policy Act, the following projects would be completed to implement the grazing decision (Maps 2N, 2S):

- approximately 17.32 miles of new fence would be constructed (14.22 miles on public land, 3.1 miles on private land);
- approximately 8.74 miles of existing fence would be removed;
- five exclosures, including approximately 270 acres, would be constructed;
- five springs would be developed or maintained; and
- four reservoirs would be constructed or maintained.

Off-road motorized travel for survey, design, construction and maintenance would require prior consultation and approval by the authorized officer. It is anticipated that the authorized existing road and trail system would provide sufficient access for construction of rangeland management projects. All projects on public lands would be constructed to conform to BLM design specifications. Applicable mitigation measures listed in Section 3.15 would be incorporated into the construction of the rangeland management projects. Pending survey, design, and layout of proposed fences, cattle guards may be installed where they cross roads on public lands if this is determined to be feasible. Wildlife escape ramps would be placed in all livestock troughs on public land in the allotments.

Fence Construction and Removal

- 1) Eastern Boundary Inner Fence Removal (pasture 1) – Remove up to 3.4 miles of fence (depending on how much is actual fence vs. natural barriers) along the east side of Don's Creek and ½ mile west of current Creek to remove an old allotment boundary fence. BLM would be responsible for fence removal.

- 2) Deep Creek Exclosure (pasture 2) – Construct approximately 0.25 to 0.85 miles of fence (depending on where the fence ties into rim or existing fence along the western rim of Deep Creek) to eliminate access from pasture 2. BLM would provide the material and Juniper Mountain Grazing Association, LLC would construct the fence to BLM specifications.
- 3) Reconfiguration of pastures 3, 4, and 5 – Remove a total of 2.23 miles of fence (including 0.79 miles in the North Fork Owyhee River WSA) to create a non-riparian pasture from pastures 3 and 5. Construct approximately 1.01 miles of fence along the northern edge of private property in 10S04W14 and 10S04W23 and 0.06 miles of fence in the WSA to tie to the rimrock of Nickel Table. Fence removal would be prior or concurrent with fence construction. BLM would remove existing fence and Juniper Mountain Grazing Association; LLC would provide material and construct the new fence.
- 4) Ray’s Reservoir Fence (pastures 5, 7A) – Construct/move approximately 0.15 miles of fence to divide Ray’s Reservoir and provide livestock access to Ray’s Reservoir from pastures 5 and 7A. Juniper Mountain Grazing Association, LLC would provide material and construct the new fence to BLM specifications.
- 5) Pasture 7 Division Fence – Construct approximately 2.3 miles of fence (2.0 miles on public land, 0.3 on private lands) from private land in 10S04W34 to fence boundary in 10S04W26 to create upland pasture 7A and riparian pasture 7B. Exact fence location would be determined on the ground during layout of the proposed fence route. BLM would provide the materials for public land portions and Juniper Mountain Grazing Association, LLC would construct the fence to BLM specifications.
- 6) Pasture 8 Division Fence – construct approximately 1.55 miles of fence (including 0.2 miles on public land, and 0.26 miles along public/private boundary, and 1.09 miles on private land) from the fence corner of pastures 3, 4, and 8 (10S03W18 SWSW), south to near Boni Table rimrock then east to tie into the Cow Valley Canyon rimrock and create two upland pastures (8A, 8B). BLM would provide materials for the fence on public lands and Juniper Mountain Grazing Association, LLC would construct the fence to BLM specifications.
- 7) Star Reservoir Waterfowl Enhancement – Construct approximately 0.35 miles of fence on the northeast side of Star Reservoir to remove the reservoir from pasture 16A. BLM would provide materials and construct the fence.
- 8) Deep Creek Fence – Construct fence along the western rim (approximately 0.56 miles of Deep Creek, pasture 18, 12S03W02 and 12S03W11) to eliminate access by Nickel Creek livestock. Approximately 0.2 miles of proposed fencing would be within a Visual Resource Management (VRM) Class I area. Remove approximately 0.35 miles of existing gap fences that are currently in the bottom of Deep Creek in a VRM Class I area. This would result in a net loss of fencing in VRM Class I area. Fence removal would be prior to or concurrent with fence construction. BLM would take out the old fence and supply material for the new

fence. The Juniper Mountain Grazing Association, LLC would construct the new fence to BLM specifications.

- 9) Pasture 7B/11 Fence Realignment – Remove approximately 0.44 miles of fence (11S04W11) and replace with approximately 0.54 miles of fence along the public/private boundary to include Smith Creek in pasture 7B. Materials and construction would be provided by Juniper Mountain Grazing Association, LLC.
- 10) Combine Public Lands in Pasture 22 and 23 – Remove approximately 1.65 miles of fence between pastures 22 and 23 that is currently not being used. BLM would remove existing material and Juniper Mountain Grazing Association; LLC would reconstruct/build any necessary fence.
- 11) Pasture 27A/27B Division Fence (12S03W28, 13S03W05) – Construct approximately 2.1 miles of fence in current pasture 27 to create a riparian pasture (27A) and an upland pasture (27B). BLM would furnish the material and Juniper Mountain Grazing Association; LLC would construct the fence to BLM specifications.
- 12) Pasture 8 Southern Boundary Fence – Construct approximately 4.22 miles of fence north of the VRM Class I boundary to create an upland pasture (8B) by excluding Nickel Creek. Upon completion of this fence, BLM would remove all gap fences in Nickel Creek between pasture 8 and 16A. BLM would furnish the materials and construct the fence.

Exclosures

Exclosure design and size will be determined during the field layout of proposed exclosures in cooperation with the permittees and interested publics. Exclosures would be constructed by the BLM and maintained by Juniper Mountain Grazing Association, LLC.

- 1) Rays Reservoir Spring (pasture 7A, 10S04W28 NWNW) – Protect undeveloped spring and associated wetland in summer use area to improve functioning condition.
- 2) Joes Folly Reservoir Spring #1 (pasture 7A, 10S04W26 NWSW) – Protect undeveloped spring and associated wetland in summer use area to improve functioning condition.
- 3) Joes Folly Reservoir Spring #2 (pasture 7A, 10S04W27 NESE) – Protect undeveloped spring and associated wetland in summer use area to improve functioning condition.
- 4) Twin Reservoirs Spring (pasture 7A, 10S04W27 SWSE) – Protect undeveloped spring and associated wetland in summer use area to improve functioning condition.
- 5) Castle Creek Exclosure – Construct approximately 1.88 miles of fence and remove approximately 0.67 miles of fence along Castle Creek in the southern part of pasture 16B (11S03W33), the northern portion of pasture 18 (11S03W33,34), and the western part of pasture 19 (11S03W34) to create a 170 acre riparian exclosure. Water access to the

reservoir (Castle Creek) at 11S03W33 SENE would be provided for pasture 16B and possibly for pasture 18).

- 6) Re-align pasture 19 fence to exclude Castle Creek from pasture 19.

Spring Developments

All spring developments and reservoir construction project proposals are pending site investigations to determine feasibility and suitability. Necessary clearances would be conducted prior to any construction of proposed projects. Water rights would be acquired in accordance with 43 C.F.R. 4120.3-9. The BLM would construct both reservoirs and springs and Juniper Mountain Grazing Association, LLC would provide normal maintenance.

- 1) Bills Spring (pasture 7A, 10S04W33 NWNE) – Develop spring, pipe water to adjacent upland area, and fence associated wetland area.
- 2) Dutch Oven Spring (pasture 8B, 10S03W31) – Maintain/develop spring. This corresponds to existing project #6446 – Dutch Oven Reservoir.
- 3) Star Ranch Spring #2 (pasture 13, 11S04W23 NESE) – Develop spring, pipe water to adjacent upland area, and fence associated wetland area.
- 4) Reconstruct Teacup Spring (pasture 8, 10S04W36 SENW) – Maintain existing spring headbox and relocate/replace existing trough from wetland area. The wetland area would be fenced to exclude livestock grazing.
- 5) Reconstruct Teakettle Spring (pasture 8, 10S04W36 SESW) – Maintain existing spring headbox and relocate/replace existing trough from wetland area. The wetland area would be fenced to exclude livestock grazing.

Reservoir Construction

BLM would construct reservoirs and Juniper Mountain Grazing Association, LLC would provide normal maintenance.

- 1) Castro Table Reservoir #3 (pasture 16B, 11S03W26 SESW) – Construct new reservoir near terminus of drainage draining the northern and eastern portions of Castro Table.
- 2) Ben Mills Flat Reservoir #3 (pasture 18, 12S03W03 SENE) – construct a new reservoir on an ephemeral tributary of Castle Creek to provide alternative water source for Castle Creek in the northeast portion of pasture 18.
- 3) Construct reservoir in pasture 2 (10S03W09 NENW).
- 4) Reconstruct/repair reservoir (pasture 20, 12S03W15 NWNW) – Repair dam and deepen reservoir to provide more reliable water source for pasture 20.

Other Project Proposals

- 1) Road Maintenance (pasture 27B, 13S03W09 SWNE) – Repair or re-route road to direct vehicles around west side of Porcupine Reservoir impoundment to reduce vehicle impacts to associated wetlands. BLM would repair/reroute road.
- 2) Un-named spring (pasture 7A, 10S04W35 SWSW) – Remove junipers from an aspen grove. BLM would remove junipers from the aspen grove.
- 3) Stoneman Creek Stabilization - Eroding banks of Stoneman Creek would be stabilized by planting sedges and willows and placing juniper revetments. BLM would provide labor and materials.

2.3.6 Interim Management

Priority pasture fencing and water developments necessary for the implementing the proposed grazing system would be implemented in years 2004 and 2005. It would take a few years for all proposed projects to be completed within the Nickel Creek and Nickel Creek FFR allotments. Projects would be prioritized as outlined below.

Pasture 1

Livestock herding would be incorporated in pasture # 1 to protect ACEC's and Don's Creek in accordance with Management Objectives outlined for ACEC's and riparian areas.

Pasture 7

Fence construction in pasture 7 should be completed as early as possible to implement the rotation schedule outlined for pasture 7 in Unit 2. Until fence construction is completed, use in pasture 7 would not occur during the "hot season" (July 1 – September 30).

Pasture 8

Fence construction in pasture 8 should be completed as early as possible to implement the rotation schedule outlined for pasture 8 in Unit 2. Herding of livestock would be used to eliminate hot season grazing on Nickel Creek and help meet objectives outlined for pasture 8 until completion of proposed fence.

Pastures 2, 16B, and 18

Reservoir construction in pastures 2, 16B, and 18 should be constructed as early as possible to provide additional water in these pastures and aid in the implementation of the grazing system.

2.4 Alternative D - Light Use

A proposal was suggested at a meeting with some Interested Publics on May 13, 2003 to consider an alternative that would allow livestock grazing to occur on the Nickel Creek Allotment and the public land portions of the Nickel Creek FFR Allotment with a single grazing system based on upland and riparian utilization standards.

The Nickel Creek Allotment boundary would be adjusted as described in Section 2.2.1.

2.4.1 Permitted Use

No livestock numbers or seasons of use were presented with this alternative. There would be no accurate method to determine AUMs available under this alternative; however, it is expected that AUMs would generally be less than alternatives B or C.

2.4.2 Grazing Management

2.4.2.1 Nickel Creek Allotment

Livestock would be herded throughout the allotment. Livestock moves would be based on the terms and conditions (Section 2.4.3). Once the utilization levels identified in the terms and conditions were reached, livestock would be moved to different ungrazed areas of the allotment. Pastures 26A and 26B would receive alternate year rest.

2.4.2.2 Nickel Creek FFR Allotment

The Nickel Creek FFR would still most likely have unrestricted use due to the large amount of private land within each pasture.

2.4.3 Terms and Conditions

- 1) Riparian areas within the allotment would maintain 6-inch stubble height and streambank damage attributable to grazing livestock would be less than 10% on a stream segment.
- 2) Utilization of upland vegetation (bluebunch wheatgrass, needlegrass, bottlebrush squirreltail, or Idaho fescue) should not exceed 30 percent of the current year's growth.

2.4.4 Rangeland Management Projects

No rangeland improvement projects would be proposed under this alternative. Maintenance of existing projects would be accomplished with motor vehicle use limited to established roads.

2.4.5 Interim Management

No interim management would be necessary for Alternative D. All livestock would be herded and moves would be based on the 30 percent utilization term and condition and riparian (six inch stubble height) term and condition.

2.5 Other Alternatives Considered

There was a broad array of alternatives that could be analyzed in comparison with the proposed action. Many would not be feasible, would not meet the purpose and need, or would be sufficiently similar to the proposed action as to not require a separate analysis. Alternatives to the proposed action that were initially considered and rejected included a single unit grazing system with a reduction in permitted use. While this alternative would make progress in meeting Idaho Standards and Guidelines in some areas, it did not balance and/or reduce utilization levels consistently in all of the pastures within the allotment. This alternative is similar in nature with Alternative D which was analyzed in detail in this document. Alternative D had reduced utilization levels throughout the allotment which would also result in a reduction of permitted use in the allotments. Alternative D would likely provide for a more rapid recovery than the single unit grazing system that was considered early in the process, therefore, the single unit grazing system was dropped from consideration and Alternative D was analyzed. The inclusion of juniper treatment in the EA was discussed. All parties involved agreed that this issue should be evaluated in a separate EA.

3.0 Affected Environment and Environmental Consequences

3.1 Upland Vegetation

Affected Environment

Wyoming big sagebrush communities occur primarily in pastures 18, 19, 20, 21, 22, 24, 25, 26A, 26B, and 27. The standard for native vegetation is generally not being met in these communities and current livestock use is a factor in pastures 26A, 26B, and 27 (USDI 2003b, c). Trends in ecological condition in these communities are static (pasture 26B), static-downward (pasture 18), or downward (pasture 26A) and decreaser grasses are reduced in the understories (USDI 2003a). In areas that have potential for improvement (pastures 18 and 26B); a static trend is not acceptable. With the exception of pastures 20 and 22, livestock use regularly occurred during some portion of the critical growth period for grasses in the Nickel Creek Allotment pastures. Pastures 26A and 26B received regular rest, but the other pastures received limited rest.

Mountain big sagebrush communities occur primarily in pastures 2, 3, 5, 7, 8, 9, 13, and 17. The standard for native vegetation is not being met in these communities in pastures 2, 7, 8, and 13 and current livestock use is a factor in pasture 7 (USDI 2003b). Trends in ecological condition in these communities are static (pasture 8), static-downward (pasture 2), or downward (pasture 7) (USDI 2003a). A static trend is acceptable in pasture 8 where a diverse grass community exists, but is not acceptable in pasture 2. Decreasers grasses are reduced in pastures 7 and 13. Livestock use occurred during a portion of the critical growth period during most years in pastures 5 and 8 and generally occurred outside the critical growth period in the remaining pastures.

Low sagebrush communities are present in most pastures. The standard for native vegetation is not being met in pastures 1, 7, and 26B and current livestock use is a factor (USDI 2003b). Trends in ecological condition in these communities are static (pastures 5, 16A, 16B, 17, and

26B), static-upward (pasture 13), or downward (pastures 1, 7, and 26A) (USDI 2003a). Decreaser grasses are reduced in pastures 5, 7, 13, 16A, 20, and 26B. A static trend in condition is acceptable in pastures 16A (marginally), 16B, and 17 where the composition of grass communities is similar to expected, but is not acceptable in pastures 5 and 26B. Livestock use occurred during some portion of the critical growth period in pastures 1, 5, 8, 16A, 16B, and 26B. Pastures 5, 16A, 16B, and 26B received some rest between 1986 and 2001. Use in pastures 7, 10, 13, and 17 occurred outside the critical growth period.

Western juniper (*Juniperus occidentalis*) is common in sagebrush communities in pastures 1, 2, 3, 4, 5, 7, 8, 13, 14, and 17 and juniper expansion is occurring in pasture 11. Juniper expansion in sagebrush communities is a contributing factor in some of those communities that are not meeting the native vegetation standard.

Environmental Consequences

Alternative A (No Grazing) – Under this alternative, the phenological needs of the key plant species in all pastures would be better met. By excluding grazing on the perennial grass species, there would be improvement in plant vigor and production along with subsequent reproduction and establishment.

Short to mid term impacts to the upland vegetation native plant communities would be positive and ensure proper functioning of the ecological processes and continued productivity and diversity of native plant species. This would allow for moving toward progress in meeting the Rangeland Health Standard for native plant communities in the allotments. Long term improvements in public lands in the FFR pastures could occur; however, livestock use in adjacent private lands could slow those improvements.

In the long term, increased buildup of fine fuels could result in a return to natural fire regimes. In Wyoming big sagebrush communities, burned areas could be susceptible to cheatgrass invasion. In mountain big sagebrush communities, juniper would be reduced in burned areas and mountain big sagebrush communities would be maintained.

Alternative B (No Change) – The occurrence, vigor, and production of desirable herbaceous vegetation, especially grasses, would continue to be reduced in many of the pastures, especially those that are typically grazed during the active growing season with limited rest or deferment. These include pastures 1, 2, 3, 5, 8, 16A, 16B, 18, 20/22, 27 and many of the FFR pastures. Downward trends in ecological condition would continue in pastures 1, 2, 7, 18, 26A, and 27. Moderate use (40-60%) during the critical growth period in pastures 1, 5, 8, 16A, 16B, 18, 26A, and 27 would result in negative impacts to perennial grasses. Periodic rest in pastures 16A, 16B, 26A, and 26B would help mitigate negative impacts. In the long term, juniper would remain common in pastures where it currently occurs because reduced grass cover would provide less fine fuels for natural or prescribed fires that could reduce juniper cover. Under present management, no formal grazing plans exist. With no formal grazing plan in place, utilization levels would not be balanced between pastures in the allotment resulting in >50% utilization in some pastures. The ecological condition of vegetation on public lands in the FFR pastures would continue to decline over the long term. There are no proposed rangeland improvement projects

proposed for alternative B. Maintenance of existing projects would likely continue at current levels.

Alternative C (Proposed Action) – Positive direct and indirect impacts would be to provide deferment or rest from critical growth period use of perennial grasses and change stocking levels (acre/AUMs) to balance them over the entire Nickel Creek Allotment or reduce AUMs in pastures with downward trends.

Complete or partial deferment of livestock use from the critical growth period would occur in pastures 1, 2, 5, 7A, 8, 16B, 18, and 27B. With the exception of pasture 7A, alternative C would result in less critical growth period use than alternative B in these pastures. Slow improvement in ecological condition would occur in pastures 1 and 2 where stocking levels would be similar to alternative B, but less use would occur during the critical growth period of perennial grasses. Livestock use would occur during portions of the critical growth period in pastures 1, 2, 7B, 16A, 16B, 26A, 26B, and 27A; however, if the management guideline of ≤ 40 utilization of key grasses during spring use is consistently met, then negative impacts to grasses would be mitigated to some extent.

Stocking densities in pastures 7A, 7B, 10, 13, 17, 18, 22, 26A, 26B, and 27B would be less in alternative C than in alternative B. Moderate improvement in ecological condition would occur in pastures 7A, 10, 13, 17, 18, 22, 26A, 26B, 27A, and 27B where stocking levels would be less than alternative B. Stocking levels in pastures 5, 8A, 8B, 16A, and 16B would be denser than in alternative B; however, use during the critical growth period would be reduced (16A and 16B) or would not occur (5, 8A, 8B). Use outside the critical growth period would mitigate denser stocking levels to some extent; however, areas of livestock concentration may experience greater impacts than in alternative B. Rest in pastures 26A and 26B would be similar between alternatives B and C; however, lower stocking levels in alternative C should result in a long term improvement in ecological condition in these pastures.

In the long term, improved grass cover would provide more fine fuels for natural or prescribed fires that could reduce juniper cover. Under this alternative, the proposed grazing plan would assist in balancing utilization levels more consistently between pastures. Pastures in a downward trend would be stocked at a lighter rate (15 – 20 acres/AUM) to allow for more rapid improvement in the ecological condition of the pasture.

The ecological condition of upland vegetation on public lands in Nickel Creek FFR pastures would remain static or possibly decrease depending on when they are used. The impact of transferring 32 AUMs from the Nickel Creek Allotment to the Nickel Creek FFR Allotment should be offset by maintaining the proposed stocking level of 12 acres/AUM in the Nickel Creek FFR Allotment.

The proposed rangeland management projects identified in Section 2.3.5 would be incorporated with alternative C. There would be short term impacts to soil and vegetative resources during the construction phase of the proposed new projects.

Proposed Fences

Direct impacts would include site disturbance related to project construction and livestock trailing and concentrations associated with fences. Restricting vehicle travel to existing ways would minimize site disturbance related to project construction. Concentrated livestock use can lead to trampling of soil and vegetation and removal of vegetation over time. These areas can, and often do, foster the colonization of invasive species. These areas generally make up a small percentage of the allotment and the rangeland management actions which improve the distribution and management of livestock would have an overall positive effect on the watershed.

Implementation of proposed fences would allow for improvement in grazing distribution of livestock and key forage species would better meet their phenological needs in pastures which would allow increased plant vigor, seed production, and reestablishment resulting in positive short and long term indirect impacts. More ground cover in terms of plant canopy and litter would also result.

Removal of existing fences would have short term impacts of soil and vegetation during the removal process, but overall long term impacts would be positive. Many of these fences would be removed from VRM Class I areas which would improve the recreation, scenic, and natural values of the area.

Water Development Proposals: Springs, Reservoirs,

There would be short term, direct impacts to soil and vegetation resources during the construction phase of the proposed new projects. Upon implementation of these project proposals, livestock would tend to use these watering areas in the uplands more and reduce the amount of time in streams and other riparian areas. Improvement in water quality within the perennial streams could be expected. Spring sources and associated wetland areas would be fenced to create an enclosure to protect these areas from livestock grazing. Water would be piped to a trough outside the riparian area. The additional watering sites created would aid in the distribution of livestock within specific pastures.

Both direct and indirect impacts would occur in areas where new water developments would be constructed. Livestock would tend to congregate at the new water source. These actions can lead to trampling impacts and removal of vegetation over time. These areas can, and often do, foster the colonization of invasive species. These areas generally make up a small percentage of the allotment and the rangeland management actions which improve the distribution and management of livestock would have an overall positive effect on the watershed.

Other Project Proposals

The proposed road maintenance in pasture 27B would result in positive impacts by eliminating vehicle travel through a wetland. There would be no short term direct impacts because an alternative road already exists in the upland area adjacent to the wetland. Removal of juniper from an aspen stand in pasture 7 would help maintain the viability of the aspen stand over the short and long term. Removal of seral juniper trees from sagebrush communities, to provide

revetments in Stoneman Creek, would have long term positive impacts for the sagebrush communities.

Maintenance of existing projects

Impacts on existing projects from current and historic livestock grazing currently exist at certain levels. It would be expected that short term impacts to soils/vegetation would occur during the maintenance of these existing projects. Long term impacts would be at current levels or reduced levels depending on the grazing rotations and shorter periods of use in certain pastures. No new roads or routes are authorized under this alternative in providing maintenance on existing projects.

Alternative D (Light Use) – Ecological conditions would improve at a faster rate than under alternative C. Light use ($\leq 30\%$) of perennial grasses would result in improved plant vigor and seed production over alternative C; however, there could be negative impacts to some grass species if they receive consistent use during the critical growth period with no rest. Decreaser grass cover would increase in areas where seed sources are available especially in shrub interspaces. Approximate stocking rate for the allotment would vary between 9 acres/AUM to 30 acres/AUM under this alternative with an average of 20 acres/AUM for the Nickel Creek Allotment. Adherence to the utilization management guidelines is critical to any progress actually being made under this alternative.

Long term improvements in public lands in the FFR pastures could occur; however, livestock use in adjacent private lands could slow those improvements.

In both the short and long term, improved grass cover would provide for more fine fuels for natural or prescribed fires that could reduce juniper cover. There would be no proposed rangeland improvement projects planned with alternative D.

3.2 Special Status Plants

Affected Environment

Federally listed plant species are not known to occur in the Nickel Creek core area, although the U.S. Fish and Wildlife Service (USFWS) considers all of Idaho to be within the potential range of Ute ladies'-tresses (*Spiranthes diluvialis*), a federally "threatened" orchid, even though the nearest known population is more than 200 miles from the allotment (USFWS 1998). This species occurs in spring, seep, and stream habitats, which are generally disproportionately impacted by livestock grazing, primarily through trampling and herbivory. Ute ladies'-tresses probably does not occur in this allotment because much of the riparian habitat that occurs here meets the definition of "disqualified habitat" as defined in USFWS (1998) due to past disturbance, improper hydrologic regime, and/or improper associated species. Also, riparian inventories in these allotments and in Owyhee County in general, have yielded no Ute ladies'-tresses observations. This species will not be discussed further.

Mud Flat milkvetch (*Astragalus yoder-williamsii*) is a BLM sensitive species (type 3). This plant is restricted to uplands in the upper forks of the Owyhee River in Idaho and one disjunct

location in Nevada. A large portion of the species' range is in the Nickel Creek allotments and it has been found in pastures 2, 5, 7, and 11. Mud Flat milkvetch occurs on fine loamy soils in low sagebrush and mountain big sagebrush communities. This plant is a diminutive perennial, usually less than 3 inches in height, which begins flowering as early as May and has mature fruits in mid-July. This plant is rarely eaten by cows due to its small stature. Generally, impacts from livestock grazing have been reported from concentrated use (Mancuso & Moseley 1993). Water developments, troughs, or salting sites within ¼ mile of existing populations have resulted in habitat alteration through trampling and soil compaction, which, in turn limits long-term viability. It has been suggested that livestock may impact the pollinator or pollinators of Mud Flat milkvetch (Mancuso & Moseley 1993), but there is no evidence that this is occurring in the Nickel Creek area. This species does not apparently need disturbance to persist (Mancuso & Moseley 1993). Currently, livestock are having little, if any, impact on the populations of Mud Flat milkvetch that occur in pastures 2, 5, and 7 (USDI 2003b). These were examined in 2002 and no impacts from current livestock or any other disturbance factor were reported.

Simpson's hedgehog cactus (*Pediocactus simpsonii* var. *robustior*) occurs in pasture 23 and in The Badlands ACEC (pasture 27). This plant is not a BLM Sensitive species, but it is on the BLM Watch List (Type 5), indicating that may be of conservation concern if populations decline or new threats emerge. Hedgehog cactus occurs on rocky or sandy benches and canyon rims. This plant has no specific phenologically "critical" period since it remains above ground all year and is subject to herbivory or mechanical disturbance at any time. Like Mud Flat milkvetch, this plant is resilient to livestock grazing pressure, typically due to its rocky habitat and its protective spines, which prevent trampling and herbivory. In 2002, the population in pasture 23 was reported to be healthy and vigorous with no observable impacts.

There is a high probability that other populations of the above species occur in these allotments. It is also highly probable that other BLM special status species occur in this core area. Inventory has been limited. It is not possible to evaluate the impacts to species that may occur in the area with the limited information that is available.

Environmental Consequences

Alternative A (No Grazing) – Removal of livestock would have no impact on the long-term viability of Mud Flat milkvetch since cattle are not currently impacting the populations in pastures 2, 5, or 7. The status of the population in pasture 11 is unknown. The impact of removing livestock cannot be evaluated for this population. The hedgehog cactus population in pasture 23 appears to be healthy and vigorous, so removal of livestock would have little or no impact on the plants at this site.

Alternative B (No Change) – Impacts would be similar to those discussed under alternative A.

Alternative C (Proposed Action) – Impacts would be similar to those discussed under alternative A. Potential impacts from salt or supplement sites and the resulting concentration of livestock will be eliminated or minimized through the terms and conditions of the permit (3 and 4). Impacts from new fencing, water developments, and maintenance of the existing water developments would be eliminated or mitigated to an acceptable level.

Alternative D (Light Use) - Overall, this alternative has the potential for a greater adverse impact on the known populations of special status plants than alternative C. Without the term and condition to minimize impacts from salting, these impacts from concentrating livestock, if any, would persist.

3.3 Areas of Critical Environmental Concern (ACEC)

Affected Environment

Areas of Critical Environmental Concern (ACECs) are defined in FLPMA as areas within the public lands where special management attention is required to protect and prevent irreparable damage to important historic, cultural, or scenic values, fish, and wildlife resources or other natural systems or processes, or to protect human life and safety from natural hazards. Research Natural Areas (RNAs) are areas where natural processes are allowed to predominate and which are preserved for the primary purposes of research and education. Outstanding Natural Areas (ONAs) are areas with high scenic value that have been little altered by human impact. Areas designated as RNAs or ONAs must meet the ACEC relevance and importance criteria in accordance with FLPMA. Special management objectives for these ACECs were defined in the Owyhee RMP (Appendix B).

The North Fork Juniper Woodland ONA/ACEC was designated for western juniper (old-growth and mature stands), Idaho fescue, low sagebrush, and riparian vegetation communities. Both the upland and riparian communities in this area support a number of special status animals and other wildlife. Pasture 1 has 661 acres designated as part of this ACEC (Map 1N). This is approximately 10% of the ACEC; most of the ACEC is in the Cliffs Allotment and a small portion is in the Pleasant Valley Allotment. Monitoring in 1998 (Murphy 1998) indicated that cattle were causing bank trampling and excessive willow browsing in some areas along the North Fork Owyhee River. Murphy also reported trailing impacts from cattle on the south slope of the river. In 2002, monitoring by BLM (Litzinger 2002) indicated severe impacts to the western juniper-Idaho fescue communities along the south slope of the North Fork Owyhee River. The bunchgrasses were grazed nearly to ground level and soil disturbance was observed throughout the area.

The Pleasant Valley Table RNA/ACEC was designated for excellent examples of upland plant communities including Owyhee sage (*A. papposa*)-Idaho fescue, silver sage (*A. cana*)-Idaho fescue, and low sagebrush-Idaho fescue communities. Pasture 1 has 626 acres designated as part of this ACEC (Map 1N). This is about half of the ACEC. The other half is to the west in the Pleasant Valley Allotment. The Owyhee sage plant community is described by Jankovsky-Jones et al. (2001). It occurs in low-gradient, intermittent drainages and in “biscuit and swale” topography that creates poorly drained areas with thin soil over bedrock between deeper soil mounds. These swales have clay or stony-clay soils where water perches at the surface. The silver sage-Idaho fescue community is found on alluvial benches, toeslopes, seeps, and broad basins; soils are silty to sandy loams, often with coarse fragments (Jankovsky-Jones et al., 2001). Depending on the rockiness of the soils, both communities vary in accessibility to livestock. Impacts from livestock cause soil compaction and over-utilization of the fescue component (Jankovsky-Jones et al., 2001). Monitoring in 2002 indicated that livestock were not currently

impacting the upland areas, primarily due to the rocky nature of the area, and most cattle activity was restricted to the intermittent drainages and flat areas devoid of basalt rocks and boulders. These drainages had heavy pugging as did the area around Boni Reservoir (10S04W09).

The Badlands RNA/ACEC was designated for high scenic values, diverse botanical features, and special status animals as well as other wildlife. The botanical features include western juniper-low sagebrush-Idaho fescue, Idaho fescue-California oatgrass (*Danthonia californica*), and large populations of Simpson's hedgehog cactus. The oatgrass community is found as "stringers" along shallow ephemeral drainages, and in vernal moist swales and areas of poor drainage (Jankovsky-Jones 2001). In this ACEC, Moseley (1987) described this community occurring in depositional areas, dry washes, small upland pockets of deeper soil, and vernal moist areas. Rockiness of these sites determines the extent of livestock use. California oatgrass is highly palatable to livestock and sets seed in late spring (USDA 2002). Monitoring in 1998 (Murphy 1998c, Palaia 1998) indicated that the uplands were in excellent condition with very light to no grazing occurring. Palaia (1998) reported that cattle have access to the eastern portion of the ACEC (pasture 27), though they were not causing significant impacts. There are 265 acres in pasture 27 that are designated as part of this ACEC (Map 1S). The portion of the ACEC in this allotment is about 20% of the total ACEC area with the western side being in the Castlehead-Lambert Allotment. Permittees indicated that cattle have access to Kettle Spring from the western side of the ACEC indicating that the rimrock barrier between the allotments is incomplete. Wildlife values include sage grouse, several species of bats and neotropical migratory birds, and a variety of raptors and other nongame birds, mammals, reptiles, and amphibian species.

The Owyhee River Bighorn Sheep ACEC was designated to protect and enhance habitat for bighorn sheep, to maintain or improve the habitat to at least a good range condition class, and to protect and maintain the scenic and natural values present in the area. Of the 141,796 acre ACEC, approximately 9,259 acres occur in pastures 22, 23, 25, 26A, 26B, and 27 (Map 1S). There is a downward trend in ecological condition in pastures 26A and 27 and a static trend in pasture 26B (USDI 2003a). Trend in pastures 22, 23, and 25 is unknown.

Environmental Consequences

Alternative A (No Grazing) – The vegetation in the ACECs would benefit from the removal of livestock. Trailing, trampling, and over-utilization that have occurred in the North Fork Juniper Woodland ACEC would be eliminated, allowing the western juniper-Idaho fescue communities to recover more quickly than under the other alternatives. Riparian communities along the North Fork Owyhee River that are accessible to cattle would also benefit from their removal, which would eliminate livestock-related bank trampling and willow browsing. Trampling impacts to the soils and vegetation in the Pleasant Valley Table ACEC would be eliminated along the tributary of Pleasant Valley Creek. Currently, livestock use in the upland areas of Pleasant Valley Table and The Badlands ACECs is very light to none at all, so these areas would be unaffected. The riparian communities and ephemeral moist areas in upper Trap Creek in The Badlands ACEC would benefit from the removal of livestock through the complete elimination of trampling and herbivory. An upward trend in ecological condition would benefit the Owyhee River Bighorn Sheep ACEC.

Alternative B (No Change) – The upland communities in the Pleasant Valley Table and The Badlands ACECs would remain unaffected by the current level and season of permitted use. Continued use of the riparian areas in these ACECs would keep these communities in an early seral stage, dominated by weedy annual plants, due to trampling impacts and herbivory rather than a community dominated by more desirable mesic vegetation, such as California oatgrass. Communities in an early seral stage would be less desirable for most species of wildlife in The Badlands ACEC. The North Fork Juniper Woodland ACEC would continue to receive significant adverse impacts from livestock. Trampling and trailing impacts observed in 1998 and 2002 would persist, resulting in the loss of the upland communities for which this ACEC was designated. The Idaho fescue component of these communities would be replaced by bulbous bluegrass, cheatgrass, or other undesirable species. Continued static and downward trends in ecological condition would have short and long term negative impacts to the Owyhee River Bighorn Sheep ACEC. Over the long term, loss of decreaser grasses in the ACEC would have a negative effect on bighorn sheep populations.

Alternative C (Proposed Action) –

North Fork Juniper Woodland ACEC - It is expected that the degraded western juniper-Idaho fescue communities and riparian communities in the North Fork Juniper Woodland ACEC would benefit under this alternative. The use of herding and the proposed season of use would minimize the excessive utilization, trampling, and trailing reported in 1998 and 2002. The season of use would eliminate critical growing season use every other year, which would benefit the Idaho fescue communities. Prohibiting salt within and adjacent to the ACEC would also minimize livestock impacts. Further mitigation of impacts to riparian areas would occur if the six-inch stubble height management guideline is consistently met. The condition of vegetation in this ACEC is expected to improve under this alternative although the progress would be slower than under alternatives A or D.

Pleasant Valley Table - It is expected that the low sage, silver sage, and Owyhee sage communities in the Pleasant Valley Table ACEC would remain in good condition as reported in 2002, primarily due to the rocky and difficult terrain, limiting cattle access. The vegetation of the intermittent drainages, which are tributaries of Pleasant Valley Creek, would remain in poor condition but they may show slight improvement. The spring-summer treatment when soils in these areas are wet would result in continued pugging and herbivory. The September-November treatment would allow a complete growing season of rest every other year, which would be beneficial.

The Badlands - It is expected that some of the plant community and wildlife values for which The Badlands ACEC was designated would be adversely affected by the proposed action. The California oatgrass-Idaho fescue community and other Idaho fescue communities would receive greater use than under current management. The proposed season of use occurs throughout part of the critical growing season every year and would encourage dispersal of cattle to previously unused areas. Grazing would coincide with the sage grouse nesting period, but generally before that of many neotropical migrants. It is expected that this alternative would concentrate livestock in the new pasture 27A because the pasture is considerably smaller than the current pasture 27.

The direct impacts to these communities are herbivory of Idaho fescue and California oatgrass, trampling of plants, pugging of wet soils, particularly in April, and dislodgement of bunchgrasses on finer-texture soils. Indirect impacts to the ACEC values include replacement of the graminoid components in these communities by bulbous bluegrass and annual brome grasses (*Bromus* spp.), other weed invasion, soil compaction of the clay soils, and alteration of the hydrologic properties of the ephemerally wet areas. The extent of these effects in the ACEC would be determined by the rockiness of these habitats and their accessibility by cattle. These direct and indirect impacts would make these areas less suitable for most wildlife species.

If the management guideline of a $\leq 40\%$ utilization level is consistently met, then reduced utilization would partially offset some of these impacts. The proposed lighter stocking density (20 acres/AUM), which is approximately half of the average actual density (10-12 acres/AUM) in alternative B, would also minimize the intensity of the impacts. Monitoring a NPFT site or greenline, which is planned to be read prior to implementation of the proposed action and five years after implementation would be the measure of the impacts that are expected. If a downward trend is exhibited at the NPFT site, then rest, fencing the ACEC, or other management actions would be implemented to improve trend in the ACEC.

Owyhee River Bighorn Sheep ACEC – Reduced livestock stocking in pastures 26A and 26B and use outside the critical growth period in pastures 22 and 27B would result in a long term improvement in ecological conditions in the ACEC. Adherence to the ≤ 40 percent utilization guideline would also help recovery in the ACEC. Alternate year rest in pastures 26A and 26B would reduce forage competition with bighorn sheep. Lighter livestock use would result in greater benefits to bighorn sheep than alternative B.

Alternative D (Light Use) – Herding and utilization terms and conditions would benefit plant community values in all four ACECs. Impacts from pugging in intermittent drainages and vernal moist areas would continue in The Badlands and Pleasant Valley Table ACECs if those areas receive use when soils are moist. The Idaho fescue communities in the North Fork Juniper Woodland ACEC would recover under this alternative, though not as quickly as under alternative A. Livestock use could occur every year in the Owyhee River Bighorn Sheep ACEC which could have a greater negative impact on bighorn sheep; however, lighter utilization levels would mitigate that impact to some extent.

3.4 Invasive, Nonnative Species

Affected Environment

Isolated populations of Scotch thistle (*Onopordum acanthium*) occur in pastures 2, 13, and 27 (USDI 2003a). Populations of whitetop (*Cardaria draba*) occur along the Backcountry Byway and in pasture 16A. An isolated population of Russian knapweed (*Acroptilon repens*) occurs in pasture 14. Although some of these populations have been treated, their current status is unknown.

Cheatgrass (*Bromus tectorum*) is widespread in the allotments; however, in most pastures it occurs in fairly low levels (USDI 2003a). It is generally associated with disturbed areas (roadways, areas of concentrated livestock use, clearcuts, and burns). It is common to dominant

in some portions of pastures 23, 26A, and 27. Medusahead (*Elymus caput-medusae*) occurs adjacent to the Owyhee River (13S03W28).

Environmental Consequences

Alternative A (No Grazing) – Over the mid to long term, healthy plant communities would be most resistant to the establishment of most noxious and invasive weeds compared to the other alternatives. Disturbed areas related to livestock use would recover and livestock feed sources would not be present to introduce noxious weeds. However, untreated noxious weed populations could expand and other seed sources of noxious weeds (recreationists and their vehicles) would continue to be a problem. Cheatgrass populations could diminish over the long term as desirable native grasses increase; however, periodic wildfires in lower elevation areas (southern pastures) could allow cheatgrass to persist or increase.

Alternative B (No Change) – Areas with static trends in ecological condition, healthy plant communities, and appropriate livestock use levels would remain resistant to noxious weed invasions. Areas that have downward trends in ecological condition, reduced perennial grass cover, or receive heavy livestock use would be susceptible to increases in noxious and invasive weeds over the short and long term. Livestock would continue to be a potential vector for noxious weed introductions. Cheatgrass populations could increase in southern pastures where burned areas could attract livestock use.

Alternative C (Proposed Action) – Long term improvements in ecological condition would result in greater portions of the allotments being resistant to increases in noxious and invasive weeds than would occur in alternative B. Areas of concentrated livestock use would continue to provide areas for noxious weed invasion. Livestock would continue to be a potential vector for noxious weed introductions. Cheatgrass populations could diminish over the long term as desirable native grasses increase; however, periodic wildfires in lower elevation areas (southern pastures) could allow cheatgrass to persist or increase, especially if livestock use increases in the burned areas.

Alternative D (Light Use) – Mid to long term improvements in ecological condition would result in greater portions of the allotments being resistant to increases in noxious and invasive weeds than would occur in alternatives B or C. Areas of concentrated livestock use would continue to provide areas for noxious weed invasion; however, they would probably be smaller than in alternative C. Livestock would continue to be a potential vector for noxious weed introductions. Cheatgrass populations could diminish over the long term as desirable native grasses increase. Periodic wildfires in lower elevation areas (southern pastures) could allow cheatgrass to persist or increase; however, light livestock use would be more favorable to the recovery of perennial grasses in these areas than would occur in alternatives B or C.

3.5 Soils

Affected Environment

The main body of soils formed in mixed alluvium and residuum from welded rhyolitic tuffs and breccia. These soils are shallow to moderately deep (with deeper inclusions) and well drained. The upper elevation areas have a frigid soil temperature regime while the lower elevation sites

are mesic. Soil moisture regimes are mostly xeric with the lower elevation areas bordering aridic. The Hat, Cleavage, Wichahoney, Monasterio, and Yatahoney soil series are more representative of the upper elevation soils while the Willhill and Dougal soil series better typify the lower elevation sites. These soils are typically loamy to clayey with high amounts of coarse fragments on the surface and in the profile. The stream and fan terraces are represented by the Paynecreek, Bluecreek, and Northcastle soil series which are moderately deep to very deep.

Many of the erosional features that have been documented in these allotments (i.e., pedestalling) have developed over many tens of years and under historic livestock use. Current accelerated erosional processes are evident in pastures 1, 2, 7, 8, 13, 16A, 20, 23, 26B, and 27 (USDI 2003a). Most processes involve accelerated overland flow and subsequent flow patterns, pedestalled plants, and soil surface physical alterations (mechanical damage and physical crusting). In certain areas, particularly associated with meadows in pasture 1, 2, and 7 there are active head cuts. The hazard of erosion on these soils from water is rated slight to high (depending on slope and surface textures). The hazard of erosion from wind is generally low.

Where western juniper has increased in some ecological sites (i.e., Loamy 13-16"), they are having a negative influence on hydrological cycles and vegetative composition and density. Where invasion is heavy, juniper are highly competitive in terms of available moisture, nutrients, and understory photosynthetic needs. The occurrence of juniper encroachment in combination with resource consumptive uses would have negative impacts to these systems. Currently pastures 1, 2, 7, and 13 are most affected.

Environmental Consequences

Alternative A (No Grazing) - Overall impacts to the soil resource (which are closely tied to the vegetative health of the community and soil surface stability) would be positive and watershed health would be improved. This would allow significant progress toward meeting Standards for Rangeland Health in these allotments.

Increases in perennial grass species and the subsequent increases in canopy cover, surface litter, above ground structural material, and fibrous root matter would aid in protecting soil from the forces of both wind and water erosion. Site productivity would be increased. Mechanical damage to the soil surface from livestock hoof action would not occur.

Watershed impairing affects due to western juniper invasion and shrub density would continue. By allowing the key forage species to meet their phenological growth needs these plants can better compete with the juniper and shrubs for moisture and nutrients thereby offsetting some of the negative impacts associated with this invasion. Also, by building up the amount of fine fuels in the understory, the possibility of natural fire playing more of a role in management of this ecological system would be enhanced.

Alternative B (No Change) - Overall impacts to the watershed/soil resource would continue where they are occurring (pastures 1, 2, 7, 8, 13, 16A, 20, 23, 26B, and 27) and watershed health would be impaired in these areas. The pastures that are functioning at a borderline level (pastures 3, 5, 16B, 18, 22, and 26A) would maintain their current status. The allotment would

not make significant progress towards meeting the watershed standards for Rangeland Health where there currently are problems. The pastures that are currently meeting this standard (10 and 17) would continue to do so. In portions of this allotment, where livestock use is limited, these standards are being better met. The Nickel Creek FFR Allotment would continue to function properly in terms of the watershed-related Standard for Rangeland Health.

Mechanical impacts to the soil surface from livestock hoof action would continue where livestock tend to congregate or where livestock are turned out early on saturated soils (pastures 2, 16A, 16B, 20, 22, 23, 26A, and 26B). Active erosional features would continue and possibly increase during the short and long term in pastures 1, 2, 7, 8, 13, 16A, 20, 23, 26B, and 27.

Watershed impairing affects due to western juniper and shrub invasion, combined with the current grazing system's utilization of the key forage species during their critical growth periods, would have short and long term negative impacts on the plant community in general.

Alternative C (Proposed Action) - Overall impacts to the watershed/soil resource would be positive and watershed health would improve (especially with anticipated progress in the health of riparian systems). Many pastures, which are currently not fully meeting standard 1 for Rangeland Health, could show progress towards meeting the standard (pastures 7, 8A, 8B, 18, 26A, 27A, and 27B). In other pastures that are not fully meeting the standard (pastures 1, 2, 7B, 16B, 26A, 26B, and 27A), deferment (pastures 1, 2, and 16B), reducing stocking levels (pasture 7B and 27A), or incorporating rest (pastures 26A and 26B) would result in some improvement. Impacts of spring use would be reduced if the management guideline of $\leq 40\%$ livestock utilization during the critical growth period is consistently met. Adhering to the utilization guidelines is critical to any progress actually being made under this alternative. In portions of the allotment where livestock use is limited these standards are being met and would continue to be met. The Nickel Creek FFR Allotment would continue to function properly in terms of standard 1.

Changes in livestock management that improve plant health and reduce utilization would increase plant litter and improve watershed health.

Mechanical impacts to the soil surface from livestock hoof action would continue where livestock tend to congregate, especially in spring when vulnerable soils are wet and more prone to this type of impact. Pastures 1, 2, 7B, 13, 16A, 17, 26A, 26B, and 27A would be most affected. By rotating the early turn out between pastures to provide deferment (pastures 1 and 2), reducing stocking levels (pastures 7B, 13, and 17), or incorporating rest (pastures 26A and 26B) these impacts would be minimized except in pasture 16A. The proposed system could facilitate progress toward healing historic and active erosion processes where they are evident.

Watershed impairing affects due to western juniper and shrub encroachment would continue. Where the key forage species are allowed to meet their phenological growth needs these plants can better compete with the juniper for moisture and nutrients thereby offsetting some of the negative impacts associated with this encroachment.

Water developments would affect the soil resource by concentrating livestock use, which results in trampling (resulting in soil compaction and/or structural breakdown) and stripping and mortality of vegetation cover. These impacts would be confined to the immediate area around the development and dissipate radially out from the development. Trailing impacts leading into the development would also negatively affect the watershed. Where these types of developments improve the distribution of livestock and prevent negative impacts to the riparian corridors by keeping livestock on the uplands areas there would be an overall benefit to the watershed. There would be direct short term negative impacts to soils related to reservoir maintenance projects, primarily related to vehicle access and soil disturbance associated with construction.

Actions associated with fencing (constructing, moving, and removing) would have minimal impacts on the soil resource. Livestock concentrations associated with new fencing could result in reduced vegetation and increased opportunities for erosion; however, these disturbances would occur in relatively limited areas and would be mitigated by general improvements in watershed condition in the majority of the area in pastures.

Removal of juniper from an aspen stand in pasture 7A would improve watershed conditions by preventing the conversion of an aspen community to a juniper upland community with reduced understory cover. The road maintenance proposed in pasture 27B would have a positive impact on watershed conditions by reducing vehicle use in a wetland area.

Alternative D (Light Use) – Overall impacts to the watershed and soil resource would be positive and watershed health would improve (especially with anticipated progress in the health of riparian systems). All pastures, which are currently not fully meeting the Standard 1 for Rangeland Health, would show significant progress towards meeting the standard by limiting utilization of key grass species to 30%, even though some of these pastures are grazed during the critical growth period. Adhering to the utilization limits is critical to any progress actually being made under this alternative. In portions of the allotment where livestock use is limited the standards is being met and would continue to be met with greater improvement. The Nickel Creek FFR Allotment would continue to function properly in terms of standard 1.

Mechanical impacts to the soil surface from livestock hoof action would continue where livestock tend to congregate, especially in spring when vulnerable soils are wet and more prone to this type of impact (pastures 2, 16A, 16B, 20, 22, 23, 26A, and 26B most affected). This alternative could facilitate progress towards healing historic and active erosion where they are evident.

Watershed impairing affects due to western juniper and shrub encroachment would continue. Where the key forage species are allowed to meet their phenological growth needs and/or utilization is light these plants can better compete with the juniper for moisture and nutrients thereby offsetting some of the negative impacts associated with this encroachment.

3.6 Fish and Wildlife/Special Status Animals/Migratory Birds

Affected Environment

Perennial streams in the Nickel Creek Allotment support low density populations of redband

trout (#1 to 16 fish/100 m²; Allen et al. 1993, USDI 2003a). Castle, Deep, and Smith creeks also support low density populations of redband trout in the Nickel Creek FFR Allotment (USDI 2003a).

The majority of the streams inhabited by redband trout in the Nickel Creek allotment (20 of 28 miles of stream) are not providing suitable habitat for the maintenance of viable trout populations (USDI 2003a). In general, these streams lack late-seral plant species, particularly shrubs such as willows, necessary for providing cover and shade, stabilizing banks and channels, maintaining cool water temperatures, and providing adequate living space for trout. Livestock grazing is a significant factor affecting trout habitat (USDI 2003b). Some streams are in poor condition due to past impacts (i.e. loss of stable beaver dams, or sediment delivery from upstream segments in poor condition) rather than a result of current livestock management.

Both allotments contain habitat for mule deer, elk and pronghorn antelope, mountain lion, bobcat, river otter, badger and a variety of other mammalian predators, sage grouse, chukar, California quail, various raptors, and a large diversity of other migratory and resident nongame birds, small mammals, reptiles, and amphibians. The Nickel Creek Allotment also contains crucial winter habitat for mule deer. Star Reservoir, Deep Creek, and the Owyhee River provide habitat for migratory waterfowl.

The Owyhee River and lower Deep Creek and adjacent uplands within the Nickel Creek Allotment provide habitat for the occasional wintering bald eagle, a federally listed threatened species. One federal candidate species for possible listing as threatened or endangered, the Columbia spotted frog, inhabits wetlands within portions of both allotments while one other candidate species, the yellow-billed cuckoo, may occur, but has not yet been recorded. A number of other special status animal species classified as either BLM "Sensitive Species" or State of Idaho "Species of Special Concern", are also known or likely to occur within one or both allotments. These include the prairie falcon, ferruginous hawk, American white pelican, sage grouse, calliope hummingbird, willow flycatcher, loggerhead shrike, sage sparrow, Brewer's sparrow, spotted bat, Townsend's big-eared bat, fringed myotis, pygmy rabbit, California bighorn sheep, western toad, common garter snake, and redband trout. California bighorn sheep habitat is included primarily within the Owyhee Bighorn Sheep Habitat Area of Critical Environmental Concern (ACEC) (Map 1S).

Sixty-eight percent (22.3 miles) of the 31.7 miles of stream riparian habitat in the allotment are rated functioning at risk (USDI 2003a). The indicators that assess structure, composition, and vigor of hydric vegetation are considered especially important to species using riparian areas because this vegetation provides nesting, foraging, and escape cover. However, even where these indicators are being met, there is often a lack of plant vigor and/or a lack of vegetation composition needed to adequately protect and stabilize streambanks leaving riparian habitats vulnerable to loss or deterioration during high flows. Heavy to severe livestock grazing use and trampling of these habitats has also been verified along many stream reaches resulting in reductions in available forage, insects and cover; trampling of nests, and amphibian egg masses; disruption of breeding and/or brood-rearing activities and increased predation of eggs and/or young. Sixty-percent (24 of 40) of the assessed springs are also adversely impacted by livestock grazing and trampling and providing less than satisfactory habitat for dependant special status animal species (USDI 2003a).

Seventy-one percent of sage grouse breeding habitat assessments were rated as marginal habitat (USDI 2003a). Five of the marginal ratings resulted primarily from a lack of desirable grass and/or forb cover and/or height, and five were primarily due to the limited availability of big sagebrush within pastures that are dominated by low sagebrush and/or western juniper. The lack of normal spring moisture also adversely affected the diversity, cover and height of desirable forbs at some locations. Eighty percent (4 of 5) sage grouse late brood-rearing assessments were rated marginal habitat (USDI 2003a). Reasons for marginal habitat ratings varied from site to site with all four indicators being rated as marginal at one site and three of four being rated as marginal at two sites. Although late brood-rearing habitat assessments were formally conducted at only five springs, 24 of the 40 springs assessed under standard 2 were rated as functioning-at-risk and/or determined to be adversely affected by livestock grazing. Active erosion, unstable banks, pugging, and heavy vegetation utilization were common impacts reported at these springs which would likely cause most, if not all, to fall within the marginal habitat or unsuitable habitat categories if rated as late brood-rearing habitat.

Shrubs are dominant and exceeding ecological site guides at many locations while desirable grasses are less common than expected at many locations and often occur primarily under the protection of shrubs (USDI 2003a). While shrubs are generally providing good woody cover, structure, and forage for a diversity of songbirds, pygmy rabbit, sage grouse, and others, the lack of desirable bunchgrasses at many locations is limiting cover for ground nesting and foraging species. The lack of bunchgrasses are also likely to be limiting the production and availability of seeds and insects that are critical food items for sage grouse, songbirds, and bats (insects only); and for small mammals that are, in turn, critical prey for most raptors. Western juniper is scattered to abundant throughout portions of the allotment and while mature stands are providing important habitat for a diversity of songbirds, bats, and other species, increasingly dense stands of young juniper are resulting in the steady deterioration and loss of habitat for some sagebrush obligates such as sage grouse, Brewer's sparrow, sage sparrow, pygmy rabbit, and others.

Alternative A (No Grazing) – This alternative would have a mostly positive impact on most wildlife and special status animal species. The lack of livestock grazing would result in increased forage and cover and eliminate trampling and other physical disturbances associated with livestock grazing. This would be especially true within and adjacent to riparian areas where livestock use is generally most concentrated. Habitat standards for redband trout would be met over the mid to long-term as riparian plant communities stabilize and shade streambanks and channels. Juniper encroachment into sagebrush steppe and other habitats would continue to negatively affect species that are dependant on these habitats, although the frequency and size of fires would likely increase due to the increased abundance of ungrazed grasses and other fine fuels. This would likely reduce the rate of juniper encroachment while, at the same time, temporarily eliminating desirable shrubs and possibly increasing the occurrence of cheatgrass, rabbitbrush and other less desirable and fire adapted species.

Alternative B (Existing Management) - Under this alternative, the majority of stream and spring riparian habitats would remain in degraded condition due to excessive hot season grazing. This would continue to result in habitat that is less than adequate in providing for the needs of dependant wildlife species including Columbia spotted frog, sage grouse, common garter snake,

willow flycatcher, bats, and others. About 18 miles of stream would continue to not provide suitable habitat for redband trout. The occurrence, vigor, and production of desirable herbaceous vegetation, especially grasses, would continue to be reduced in many of the pastures, especially those that are typically grazed during the active growing season with limited rest or deferment. These include pastures 1, 2, 3, 5, 8, 16A, 16B, 18, 20/22, 27 and many of the FFR pastures. All of these pastures would continue to provide habitat that is generally lacking in suitable cover and forage for sage grouse, sage sparrow, Brewer's sparrow, pygmy rabbit, and others, likely resulting in reduced diversity and numbers of special status and other wildlife. Pastures 13 and 17 which have received mostly mid-to-late summer (deferred) grazing use would still support a reduced decreaser grass component and habitat for dependant species would be expected to remain less-than-suitable or improve very slowly under current management. Pastures 10 would continue to provide habitat that is adequate for the needs of most wildlife.

Alternative C (Proposed Action) - Under this alternative, a reduction in the frequency and duration of hot season grazing in pastures 1, 2, 7B, 13, 16A, 17, 20/22, 27A, and 320 would result in the long term improvement of riparian habitat conditions for a large diversity of riparian dependant wildlife and special status animals including Columbia spotted frog, sage grouse, and many others. Most streams providing habitat for redband trout would meet habitat standards for redband trout over the long-term. However, the heavy emphasis on spring grazing in these pastures would also adversely affect vigor, production and availability of desirable upland grasses and forbs and result in reduced cover and forage and increased physical disturbance in both riparian and upland habitats during the breeding/nesting season. This would be partially mitigated if the management guideline of ≤ 40 percent utilization of grasses is consistently met in all spring-use pastures. However, it would still result greater disturbance during the breeding season to amphibian egg masses and songbird nests, including more frequent flushing of nesting birds that exposes eggs and young to increased predation, parasitism, and exposure to the elements. Sage grouse breeding habitat and California bighorn sheep lambing habitat are of special concern in pastures 26A and 26B and spring grazing would result in reduced sage grouse nesting cover, reduced bighorn sheep forage and some avoidance of grazed uplands by bighorn sheep. Some of these impacts would be mitigated by the 10 percent reduction in allowable forage utilization, reduced stocking densities in most spring use pastures, and the availability of ungrazed cover and forage and the lack of livestock disturbance in the rested pasture.

Alternate years of late fall grazing in pastures 1 and 2 and annual fall use of pasture 10 should benefit both riparian and upland habitats and dependant species in these pastures by avoiding livestock use during the active growing season and breeding seasons, but could result in unacceptable levels of riparian and/or upland browse use in years of abnormally hot, dry weather if not closely monitored. Portions of Stoneman Creek and North Fork Owyhee River may require additional management actions beyond that authorized in this decision. If these additional actions are not implemented, then one to two miles of habitat for redband trout would not improve. Fall treatments would also reduce the availability of residual nesting cover for sage grouse and other species during the following spring.

The predominance of deferred grazing in pastures 5, 7A, 8A, 8B, 16B, 18, and 27B would improve vigor and production of herbaceous vegetation by avoiding most active growing season use. This would result in increased forage and cover for dependant wildlife and avoid physical

disturbance of habitats and populations during the critical nesting/breeding season. However, excessive use and degradation of unprotected springs, seeps and other riparian habitats that would occur adversely affecting some late brood-rearing habitat for sage grouse and habitat for a large diversity of other species.

The construction of more than 14 miles pasture and enclosure fences would result in some minor short term disturbance to wildlife habitats and populations during construction and some minor long term wildlife mortality and impediment to wildlife movements. This would be offset by the removal of approximately eight miles of existing fence and by the improvement of overall upland and riparian habitat conditions for a large diversity of species and the exclusion of livestock from seven springs and portions of Castle Creek, Deep Creek, and the Owyhee River.

The development/maintenance of five springs would result in some loss of water from the spring sources, some short-term disturbance of habitats and populations during development and some possible long-term increase in livestock use and disturbance of habitats in the immediate vicinity of these springs. However, these impacts would be largely mitigated by 1) equipping livestock troughs with float valves to insure that unused water remains at the spring source or by directing overflow from troughs back into the original drainage, 2) equipping troughs with wildlife escape ramps, 3) constructing livestock enclosures at the springs that should result in improvement of riparian habitat inside of the enclosure, and 4) facilitating the implementation of the proposed grazing system with its described benefits to wildlife and special status species. Removal of junipers from an aspen stand in pasture 7A would result in some minor, short-term disturbance of wildlife and special status species, but would improve the long term health of aspen and other riparian vegetation by increasing water availability and preventing eventual dominance and reduced productivity of these habitats by juniper.

The development of new reservoirs would result in the permanent loss of a small amount wildlife habitat, the short term disturbance of additional surrounding habitat and populations during construction and long term increases in seasonal livestock use and associated adverse impacts to wildlife habitats and populations within the immediate vicinity of these projects. These impacts should be partially offset by facilitating the implementation of the proposed grazing system with its described benefits to wildlife and special status species and by the additional aquatic habitat and/or drinking water that these reservoirs would provide for a diversity of amphibians, waterfowl, shorebirds, big game, and other wildlife. Eliminating livestock use from Star Reservoir during the nesting season would benefit migratory waterfowl by eliminating possible livestock disturbance of nests and livestock removal of nesting cover.

Alternative D (Light Use) – All streams providing habitat for redband trout would meet aquatic habitat standards over the mid to long-term. Rates of recovery and improvement in habitat conditions would be slightly slower than that under the no grazing alternative. Riparian and upland wildlife habitats would also improve under this alternative. Adequate forage, cover, and structure would be present at all times to adequately meet the needs of most, if not all special status animals and other wildlife within the allotment. Physical disturbance of habitats and populations would also be reduced at most locations and there would be no impacts to habitats or populations normally associated with new project developments.

3.7 Cultural Resources

Affected Environment

Inventory data is incomplete for the allotment. Surveys in the general vicinity include the Boise District BLM Class II Inventory (Young 1987). Sites recorded in the allotment include a habitation site; 19 lithic scatters; two historic trash scatters; two rockshelters; five rock cairns, and three rock alignments as recorded in BLM records. Past human use of the area included camping, food gathering and hunting. The Shoshone, Paiute, and Bannock tribes inhabited this area. Historically the area has been used for grazing livestock and for recreational purposes.

Environmental Consequences

Alternative A (No Grazing) - Any direct impacts of grazing on cultural resources by livestock including trampling or breakage of artifacts would be avoided under this alternative. This alternative would also result in improvement in vegetative cover and soil stabilization over time and contribute to preservation of cultural resources

Alternative B (No Change) - Under the existing management the impacts to the cultural resources would continue and potentially cause adverse effects. The mechanical disturbance to the soils by livestock hoof action would continue to affect the integrity of cultural resources especially where livestock use is heavy, occurs in riparian areas during the hot season, or occurs during the early season when soils are saturated.

Potential direct impacts of grazing on cultural resources (breakage, movement) would continue. Indirect impacts of grazing on cultural resources would be continued erosion of archaeological sites from grazing and trampling resulting in loss of site context.

Alternative C (Proposed Action) - This alternative has potential to improve overall ecological condition and preserve the integrity of cultural resources. However, it could adversely affect cultural resources in some unfenced riparian zones and springs because cattle tend to concentrate and trample the ground in these areas, resulting in loss of integrity on cultural resource sites. Reduced hot season grazing, relative to alternative B, could reduce these impacts.

Site visits would be made to each proposed project prior to construction. If required, project design would be modified so that all projects would comply with section 106 of the National Historic Preservation Act, NEPA, and FLPMA.

Alternative D (Light Use) - This alternative has potential to improve overall ecological condition and preserve the integrity of cultural resources. However, the impacts to the cultural resources would continue and potentially cause adverse effects. The mechanical disturbance to the soils by livestock is hoof action, and where use is heavy, would continue to affect the integrity of cultural resources. The six inch stubble height is beneficial to maintaining ground cover and preventing loss of soils and would be somewhat stabilizing to cultural resources. The direct impacts from hoof action would be ongoing under this alternative.

The direct impacts of livestock on cultural resources include possible breakage and movement caused by their grazing, trailing, and trampling. Indirect impacts of grazing on cultural resources would be continued erosion of archaeological sites from grazing and trampling resulting in loss of site context. The cumulative effects on the cultural resources in the foreseeable future would be the accumulation of the above effects over every year of grazing.

3.8 Wetlands/Riparian Areas/Aquatic Resources/Floodplains

Affected Environment

Streams and wetlands in pastures 1, 7, 8, 11, 13, 16A, 17, and 18 have been grazed primarily in summer and the majority of riparian areas and wetlands in these pastures are functioning at risk with a static trend in condition (USDI 2003a). Livestock grazing is the primary factor negatively impacting the health of these streams and wetlands (USDI 2003b). Streams and wetlands in pastures 2, 16B, 22, and 23 were grazed in early spring and are predominantly functioning at risk with an upward trend in condition or are properly functioning (USDI 2003a). Most riparian areas in these pastures that are currently not functioning properly are generally in poor condition as a result of past impacts rather than current livestock management practices (USDI 2003b). Streams and wetlands in pastures 26B and 27 were grazed in spring and early summer under a rest-rotation grazing system. In these pastures, stream segments with rock armoring are in proper functioning condition, whereas streams and associated wetland and riparian areas in gravelly or fine-grained soils are functioning at risk. Streams in pastures 10 were grazed in fall and are primarily functioning properly, with one segment of Smith Creek functioning at risk (USDI 2003a).

Redband trout are a BLM sensitive species and State of Idaho species of special concern. They occupy 28 miles of stream in the Nickel Creek Allotment including all or portions of Castle, Current, Deep, Little Smith, Little Thomas, Nickel, Smith, Stoneman, and Thomas creeks, and the North Fork Owyhee River. Aquatic habitat conditions are discussed under special status species (Section 3.3). Other native fish species that inhabit the North Fork Owyhee River and Owyhee River watersheds in the Nickel Creek allotment include: bridgeline sucker (*Catostomus columbianus*), largescale sucker (*Catostomus macrocheilus*), speckled dace (*Rhinichthys osculus*), longnose dace (*R. cataractae*), redband shiner (*Richardsonius balteatus*), sculpins (*Cottus* spp.), northern pikeminnow (*Ptychocheilus oregonensis*), and chiselmouth (*Acrocheilus alutaceus*). Non-native smallmouth bass (*Micropterus dolomieu*) are common in Deep Creek and the Owyhee River.

Environmental Consequences

Alternative A (No Grazing) – Streams and wetlands would improve in condition most quickly under this alternative. Much of the 10 miles of stream that is currently properly functioning would also improve in condition as a result of increases in cover and vigor of obligate riparian plants such as willows (*Salix* spp.) and sedges (*Carex* spp.). Nineteen miles of stream would improve from functioning at risk condition to properly functioning condition in the short to mid-term. Most spring wetlands that are functioning at risk would improve to functioning condition in the short to mid-term. Of the 19 miles, about 3 miles of stream (portions of Stoneman and Current creeks) that are either deeply incised in fine-grained soils or with very unstable

streambanks and channels resulting from high levels of sediment input would improve in condition over the mid to long-term.

Alternative B (No Change) – About 10 miles of stream that are currently properly functioning would continue to meet riparian health standards. About 2 miles of stream (portions of Stoneman and Beaver creeks) that are currently functioning at risk with an upward trend in condition would improve to properly functioning condition over the mid-term. The condition of 17 miles of stream that are currently functioning at risk with a static trend would not improve. Most spring wetlands would remain in functioning at risk condition. An exception would be wetlands in pastures grazed in early spring would remain in proper functioning condition or improve in condition over the long-term.

Alternative C (Proposed Action) – Riparian areas and wetlands would improve in condition under this alternative, but not as quickly or possibly to the extent as under alternative A. Eighteen miles of stream and most wetlands would improve from functioning at risk to properly functioning condition over the mid-term. Ten miles of stream would continue to be in proper functioning condition. Two miles of Current Creek with highly unstable channels and streambanks resulting from high levels of sediment input would improve over the mid to long-term. About one mile of Stoneman Creek that has highly-erodible streambanks formed of fine-grained soils, which are currently incised and weakly vegetated with disturbance-induced plant communities, may not continue to improve with the change from early-spring grazing to a grazing rotation that includes hot-season use in one out of four years. If conditions are static on Stoneman Creek, and additional management such as bank protection and vegetation restoration and/or temporary fencing to exclude livestock use are not implemented, then this portion of the stream would continue to be in functioning at risk condition. Similarly, if livestock are not successfully distributed away from streams in pasture 1 in one out of two hot season grazing periods, then portions of Dons Creek and the North Fork Owyhee River would remain in functioning at risk condition. A new grazing decision would be required to change livestock management so that stream conditions could improve.

Alternative D (Light Use) – Regular compliance with the 6-inch residual stubble height limit would result in all streams and wetlands improving to proper functioning condition. Much of the 10 miles of stream that is currently properly functioning would improve in condition as a result of increases in cover and vigor of obligate riparian plants such as willows (*Salix* spp.) and sedges (*Carex* spp.). Most streams and wetlands currently in functioning at risk condition would improve to proper functioning condition over the short to mid-term. About 3 miles of stream that are either deeply incised in fine-grained soils or with very unstable streambanks and channels resulting from high levels of sediment input would improve in condition over the mid to long-term. Rates of recovery and improvement in habitat conditions would be slightly slower than that under the no grazing alternative.

3.9 Water Quality

Affected Environment

Water quality of seven perennial streams flowing through the allotments, including Castle, Current, Deep, Nickel, Smith, and Thomas creeks and the North Fork Owyhee River, does not

comply with State of Idaho water temperature criteria for full support of cold water biota and salmonid spawning beneficial uses (USDI 2003a). Water temperature criteria are being exceeded in 12 out of 13 pastures in the allotment with perennial streams. Current livestock grazing is the primary factor for the North Fork Owyhee River, Castle, Nickel, Smith, and Thomas creeks not meeting the water quality standard (USDI 2003b). The water quality of Deep and Current creeks is also impaired, but the primary cause is either historic land uses and/or livestock grazing in adjacent grazing allotments. Livestock grazing practices on the Nickel Creek Allotment are a secondary factor contributing to the impaired water quality of Deep Creek (USDI 2003b). The quality of inflows from major tributary streams (such as Nickel and Current creeks) that are located on the Nickel Creek Allotment also influences water quality of Deep Creek. Current livestock grazing also appears to be impacting riparian vegetation (and subsequently streambank and channel stability) and on a portion of Current Creek in the allotment. No bacterial sampling was conducted to evaluate compliance with State criteria for support of the primary and secondary contact recreation beneficial uses.

Environmental Consequences

Alternative A (No Grazing) – Water quality of streams would improve in condition most quickly under this alternative. Most streams would meet State water temperature criteria over the long term, as stream shading from riparian vegetation increases and stream channels narrow and deepen where dense, vigorous riparian and wetland plant communities provide increased channel and bank stability.

Alternative B (No Change) – Most stream segments would continue to not meet State water temperature criteria, particularly in pastures grazed in spring/summer. Grazing use in these stream segments would continue to be too heavy to allow for improvements in bank and channel stability, and stream shading. About 10 miles of stream that are currently properly functioning with dense willow cover and shading (such as portions of Smith and Little Smith Creeks) would continue to provide cooler water to downstream segments.

Alternative C (Proposed Action) – Water quality would improve in condition under this alternative, but not as quickly and possibly not to the extent as under alternative A. Water quality of most streams would improve over the long-term. Water quality (particularly sediment levels) in about one mile of Stoneman Creek that has highly-erodible streambanks formed of fine-grained soils, which are currently incised and weakly vegetated with disturbance-induced plant communities, may not continue to improve with the change from early-spring grazing to a grazing rotation that includes hot-season use in one out of four years. If conditions are static on Stoneman Creek, and additional management such as bank protection and vegetation restoration and/or temporary fencing to exclude livestock use are not implemented, then this portion of the stream would continue to be in functioning at risk condition. Similarly, water quality of Dons Creek and the North Fork Owyhee River may not improve if herding is not successful in restricting livestock use of these streams in one out of two years of hot season grazing. A new grazing decision would be required to change livestock management so that stream conditions could improve.

Alternative D (Light Use) – Regular compliance with the 6-inch residual stubble height limit would result in improved water quality in all streams in the allotment. Most streams would meet State water temperature criteria over the long-term. Rates of recovery and improvement in habitat conditions would be slightly slower than under the no grazing alternative.

3.10 Social and Economic

Affected Environment

The BLM does not have extensive knowledge of the ranching interests or alternative grazing options of the permittees, or access to the financial and business records of the permittees. The livestock industry is an important component of the local economy.

Recreation, including backpacking, horseback riding, camping, hunting, fishing, hiking, site-seeing, boating, nature study, etc., is increasing on the public lands in the Nickel Creek area. The North Fork of the Owyhee River was determined to be suitable for inclusion in the Wild and Scenic River System in the Owyhee Resource Management Plan (1999). Livestock impacts in some riparian and upland areas under the current situation have caused some deterioration of natural settings which detract from recreational experiences of visitors. It would be anticipated that within the local communities, economic impacts (income) would increase over time for local business in regards to recreation uses on the public lands. BLM does not have extensive knowledge of the local businesses in the area or access to their financial and business records, therefore it is impossible to quantify the entire effect under the current situation.

Environmental Consequences

Alternative A (No Grazing) - If no grazing use was permitted in the allotments, there would likely be a negative economic impact to the local community as a whole and the permittees that previously grazed livestock in the allotment. However, because the BLM does not have extensive knowledge of the ranching interests or alternative grazing options of the permittees, or access to the financial and business records of the permittees, it is impossible to quantify the effect. There could be potential for some of the displaced grazing use to be absorbed into other operations where the permittees may have an interest. The permittees could also be forced to find alternative rangelands in which to graze their livestock, feed them hay, or sell them. Under this alternative, no grazing on these public lands would probably have a negative affect on the grazing permittees and the local economy both in the short term and the long term.

Alternative B (No Change) - If livestock management was continued at the existing levels in the allotments, conditions of the uplands and riparian areas currently not meeting Idaho Standards and Guidelines would most likely continue to decline. The economic viability of grazing livestock would be expected to diminish in the long term. Livestock grazing permittees would be directly impacted due to poor livestock production on these lands over time and increased cost to benefit ratios. Furthermore, it would be anticipated that local communities, which rely heavily on local ranching economics, would eventually be negatively impacted over time.

Alternative C (Proposed Action) - Under this alternative, the permittee and the BLM would have direct costs for construction and removal of rangeland management projects. The cost figures below are estimates that include materials, equipment and labor. These estimated costs

vary depending on location of the project, topography, and other factors related to the specific project. In developing these estimates, the higher cost estimates were used to determine direct cost. These cost figures do not include project layout and design, contract administration, clearances, and other costs that could be related to the BLM and/or permittee for the proposed projects. These figures do not include the annual maintenance costs associated with these projects. Juniper Mountain Grazing Association, LLC would be primarily responsible for maintenance costs.

Direct costs to the permittees would be estimated at approximately \$33,745 in materials, construction, and labor for the proposed projects. This cost does not reflect normal annual maintenance cost to the permittee. Direct costs to the BLM would be estimated at approximately \$115,944 in materials, construction, and labor for the proposed projects. This cost estimate would include construction of all proposed reservoirs.

There could also be some impact to the permittees because livestock would not be permitted to graze in the allotment during certain previously authorized periods. In addition, impacts would also occur to the permittees with the 297 AUMs that are temporarily delayed (discontinued) from activation by a term and condition of the permit. However, because the BLM does not have extensive knowledge of the permittees other ranching interests, alternative grazing options or access to the permittees financial and business records, it is impossible to quantify the effect. There could be potential for some of the displaced grazing use to be absorbed into other operations where the permittees have interest or the permittee could also be forced to find alternative rangeland to graze the livestock, feed or sell them. If the permittee opted to place the cattle on private hay meadows, it could cause disruption to haying operations and/or loss of hay crop.

This alternative would require the permittees to conduct timely pasture rotations and complete livestock removal at the end of the authorized grazing period(s). This would require the permittees or someone they employ to spend more time than their present situation in gathering and moving cattle. This would result in an increase operating costs to the permittee. This alternative would also require the permittees or someone they employ to remove cattle from the certain pastures (27A) within allotment early in the grazing season. This could cause disruption to operating plans, and/or increase operating costs.

Overall, in the short to long term, this alternative would result in more economic and social impact to the permittee than the alternatives A, B, and D.

In general, other social and economic impacts from this alternative would be similar to those described in the July 1999 EIS for the Owyhee RMP (pages IV-295 to IV-297).

Alternative D (Light Use) - Under this alternative, there would be no direct costs for construction of rangeland management projects identified in EA for the permittee and the BLM. It is likely that the permittee would continue to bear some cost related to maintenance of existing projects in the allotment.

There would also be some direct impacts to the permittee due to lower numbers (AUMs) of livestock that would be authorized to graze in the allotment. There could be potential for some of the displaced cattle from reduced livestock numbers to be absorbed into other operations where the permittees may have interest. The permittees could also be forced to find alternative rangelands to graze their livestock, feed them hay, or sell them.

There would likely be a negative economic impact to the ranch community as a whole. However, because the BLM does not have extensive knowledge of the ranching interests or alternative grazing options of the permittees, or access to the financial and business records of the permittees, it is impossible to quantify the effect of this alternative.

This alternative would require that the permittee conduct extensive herding and timely moves of the livestock based on utilization levels and stubble height requirements. This would require that the permittee or individuals that he employs, to spend more time gathering and moving cattle, which would increase operating costs. The administration of the public lands by the agency would require more time to insure terms and conditions are being met with livestock which are not confined to specific pastures under this alternative.

Overall, this alternative would result in more economic and social impact to the permittee than alternatives B or C, but less impact than alternative A.

3.11 Visual Resource Management

Affected Environment

Public land within the allotments is a mix of VRM Class I, II, III, and IV lands, with a majority of the public land classified as VRM Class IV. The objective in Class I areas is to preserve the existing character of the landscape, and construction of new rangeland facilities is not permitted. Within VRM Class II areas, the objective is also to retain the existing character of the landscape, and very limited construction of new rangeland facilities may be permitted outside of wilderness study areas. In Class III areas, changes to the characteristic landscape should be moderate, and in Class IV landscapes, the level of change can be high. Within the Nickel Creek Allotment, the natural character of some landscapes in VRM Class I and II areas has been degraded by heavy livestock grazing. Livestock grazing impacts include bare ground, streambank alteration, and inadequate diversity and structure of plant communities (USDI 2003a).

Environmental Consequences

Alternative A (No Grazing) - No grazing would have a positive impact on visual resources. Improvements in vegetative condition and diversity, improvements in streambank structure and stability, and the elimination of trampling and other evidence of livestock use would enhance scenic quality. This would result in more primitive and natural landscapes in the short and long term.

Alternative B (No Change) - Renewal of the present grazing system would continue the negative impacts to scenic quality that are currently occurring in areas of heavy livestock utilization. Maintenance of existing range facilities would have some negative visual effects, however the level of impact is considered acceptable. All fence and enclosure maintenance

would be accomplished with motor vehicle use limited to established roads, which would minimize the disturbance associated with the projects. Although Deep Creek and the Owyhee River would not be in the allotment, livestock would still have access to these areas in pastures 26A and 26B. Short and long term improvements in these areas would depend on keeping livestock out of the riparian areas. Areas where livestock congregate would continue to negatively affect visual resources experiences, both during and after the grazing season.

Alternative C (Proposed Action) - This alternative would have positive and negative impacts on visual resources over the long term. Anticipated improvements in vegetative cover and diversity, both in the riparian areas and in the uplands, would enhance scenic quality and result in more primitive and natural landscapes. The proposed action would result in improvements in diversity of line, form, color, and texture in the area, which would enhance scenic quality and result in more primitive and natural landscapes over the long term. Direct and indirect impacts of adjusting the allotment boundary along the Owyhee River and Deep Creek drainages would be similar to those discussed under alternative B.

Construction of new range facilities in VRM Class I areas would not conform with the Owyhee Land Use Plan. Approximately 0.2 miles of one of the proposed fences near Deep Creek would be constructed within a VRM Class I area, however approximately 0.35 miles of existing fencing that crosses Deep Creek within a VRM Class I area would also be removed. Therefore, the new fence would not result in an increase in the total amount of fencing, or have a negative effect on visual resources, within this Class I area. Reconstruction of Teacup and Teakettle Spring developments would also include construction of enclosure fences within a VRM Class I area, in order to protect wet meadow areas at the spring sources from cattle impacts. Impacts related to construction and increased fencing in a VRM Class 1 area would be mitigated by improvements in riparian conditions associated with the springs. Spring reconstructions would conform to Owyhee RMP guidelines. The other fence construction, enclosures, spring developments, and reservoirs would be constructed outside of VRM Class I areas.

Construction and maintenance of range facilities would have some negative visual effects; however, the level of impact is considered acceptable in the areas where it would occur. All fence and enclosure construction and maintenance would be accomplished with motor vehicle use limited to established roads, which would minimize the disturbance associated with the projects.

Alternative D (Light Use) - This alternative would have primarily positive impacts on visual resources over the long term. Anticipated improvements in vegetative cover and diversity, both in the riparian areas and in the uplands, would enhance scenic quality and result in more primitive and natural landscapes. This alternative would result in improvements in diversity of line, form, color, and texture in the area, which would enhance scenic quality and result in more primitive and natural landscapes over the long term. Direct and indirect impacts of adjusting the allotment boundary along the Owyhee River and Deep Creek drainages would be similar to those discussed under alternative B.

Maintenance of rangeland improvement projects would be similar to those discussed under alternative B.

3.12 Recreation/Wild and Scenic Rivers

Affected Environment

Portions of the allotment are located within the North Fork Owyhee Backcountry Special Recreation Management Area (SRMA), Upper Deep Creek SRMA, Lower Deep Creek SRMA, and Owyhee River Canyon SRMA. The main recreational activities within these special management areas include float boating, backpacking, horseback riding, camping, hunting, fishing, sight-seeing, and nature study. Livestock impacts in some riparian and upland areas have caused deteriorated natural settings, which detract from recreational experiences of visitors. Examples of deteriorated settings include areas along the North Fork Owyhee River, Current Creek, and Nickel Creek. The remaining portions of the allotments are not included within a special recreation management area.

Recreation Opportunity Spectrum classification is used to characterize the type of recreational opportunity settings, activities, and experience opportunities that can be expected in different areas on public land. This area provides a mix of primitive, semi-primitive non-motorized, semi-primitive motorized, roaded natural, and rural settings for recreation.

Within the allotments, portions of the North Fork Owyhee River, Nickel Creek, Current Creek, Deep Creek, and the East Fork Owyhee River were determined to be suitable for inclusion in the Wild and Scenic River System, in the Owyhee Resource Management Plan (1999).

Approximately 70.7 miles of the suitable rivers (Owyhee River – 8.2 miles, North Fork Owyhee River – 6.7 miles, Deep Creek – 37.3 miles, Nickel Creek – 8 miles, Current Creek – 10.5 miles), classified as “wild”, are located within the allotments. The designation is recommended due to the outstandingly remarkable scenic, recreational, geological, and wildlife values present.

Segments of the North Fork Owyhee River, Current Creek, and Nickel Creek were determined to be functioning at risk during the riparian functioning condition inventory (USDI 2003a).

Downstream from the allotment, all of the main Owyhee River within Oregon (120 miles), and North Fork of the Owyhee River within Oregon (9 miles), were designated by Congress as components of the Wild and Scenic River System in 1984 and 1988, respectively.

Off-highway vehicle (OHV) designations in the area include areas where vehicles are limited to existing roads and trails, limited to designated roads and trails, and closed to motorized access.

Over-snow vehicle (OSV) designations in the area include areas open, limited seasonally, and closed. OHV and OSV regulations apply to permitted uses as well as to general public use.

The Owyhee Uplands Back Country Byway traverses approximately 10 miles within the allotments. The Byway is a 101-mile improved gravel road between Grandview, Idaho and Jordan Valley, Oregon. The road is a popular scenic drive for visitors to public land, and serves as a staging area for trips into more remote scenic and primitive backcountry areas of Owyhee County.

Environmental Consequences

Alternative A (No Grazing) - This alternative would have a positive impact on recreation. Improvements in scenic quality, discussed above, would have a positive effect on recreationists' experiences. Improvements in stream function and water quality would eventually lead to

improved opportunities for fishing. Improvements in wildlife habitat would lead to increased opportunities for both consumptive and non-consumptive wildlife-related recreation. Reduction or elimination of livestock-related impacts would make previously undesirable areas attractive to recreationists for camping, hiking, riding, and nature study. Improvements in scenic quality, recreational opportunities, and wildlife habitat would also enhance the wild and scenic river values of the suitable wild river segments.

Alternative B (No Change) - Negative impacts to recreation that are currently occurring due to livestock grazing would continue to occur, including impacts within the suitable wild river corridors. Recreational use levels would likely continue to incrementally increase, which is the trend throughout the area. Although Deep Creek and the Owyhee River would not be in the allotment, livestock would still have access to these areas in pastures 26A and 26B. Short and long term improvements in these areas would depend on keeping livestock out of the riparian areas. Areas where livestock congregate would continue to negatively affect recreationists' experiences, both during and after the grazing season.

Alternative C (Proposed Action) - There would be positive and negative impacts to recreation under this alternative. Improvements in scenic quality due to improved vegetative condition and diversity would positively affect recreationists' experiences. This improvement would be somewhat cyclic, as vegetative conditions observable to recreationists would vary dramatically depending on the time of visitation relative to when the area had been grazed. Improved habitat conditions for wildlife would lead to improved opportunities for wildlife viewing, hunting, fishing, and nature study. Improvements in scenic quality, recreational opportunities, riparian conditions, and wildlife habitat along the suitable wild and scenic river corridors would enhance their wild and scenic river values. Improvements would vary by stream and season of use. Short term negative impacts would occur during years when hot season use is allowed; however, the long term improvements in riparian conditions may mitigate these impacts. Direct and indirect impacts of adjusting the allotment boundary along the Owyhee River and Deep Creek drainages would be similar to those discussed under alternative B. New fences would be an impediment to cross-country travel for recreationists on foot and horseback. The removal of fences across Deep Creek would benefit boaters and other recreationists using the river corridor.

Alternative D (Light Use) - There would be primarily positive impacts to recreation under this alternative. Improvements in scenic quality due to improved vegetative condition and diversity would positively affect recreationists' experiences. This improvement would be somewhat cyclic, as vegetative conditions observable to recreationists would vary depending on the time of visitation relative to when the area had been grazed. Improved habitat conditions for wildlife would lead to improved opportunities for wildlife viewing, hunting, fishing, and nature study. Improvements in scenic quality, recreational opportunities, riparian conditions, and wildlife habitat along the suitable wild and scenic river corridors would enhance their wild and scenic river values. Improvements would vary by stream and season of use. Short term negative impacts would occur during years when hot season use is allowed; however, the long term improvements in riparian conditions and lighter livestock use may mitigate these impacts. Direct and indirect impacts of adjusting the allotment boundary along the Owyhee River and Deep Creek drainages would be similar to those discussed under alternative B. There would be no

new fences constructed; however, the fences that span Deep Creek would remain as an impediment to boaters and other users of the river corridor.

3.13 Wilderness Study Areas (WSA)

Affected Environment

Portions of the North Fork Owyhee River, Upper Deep Creek, and Owyhee River-Deep Creek Wilderness Study Areas are located within the Nickel Creek Allotment, while the majority of the public land within the allotment is outside of the WSA boundaries. All of the Nickel Creek FFR is outside of the WSA boundaries.

WSAs are managed in such a manner as to not impair their suitability for preservation as wilderness. Wilderness values to be protected include solitude, naturalness, opportunities for primitive and unconfined recreation, and the presence of special features that enhance wilderness values. Special features recognized for the North Fork Owyhee River WSA include exceptional scenic quality, because of its spectacular sheer-walled canyons and rock outcrops highlighted with gnarled juniper. Sensitive wildlife species were also included as a special feature in the wilderness recommendation. Special features for the Owyhee River-Deep Creek WSA include scenic quality, scientific, wildlife, and cultural values, with specific mention of the outstanding float boating opportunities, spectacular cliffs, bighorn sheep and other wildlife, historic sites, and archeological sites.

Livestock grazing in WSAs is considered a “grandfathered” use that may continue in the same manner and degree in which it was being conducted on October 21, 1976, if it does not cause unnecessary or undue degradation of the lands and their resources. There are approximately 15.1 miles of fence, five spring developments, and 12 reservoirs located within the wilderness study area portions of the allotment.

The assessment documents heavy livestock grazing, trampled streambanks, impaired stream functionality, and reduced vegetation in some places within the wilderness study area portions of the allotment (USDI 2003a). This has a negative effect on the wilderness values of naturalness and scenic quality, and has a negative effect on recreationists’ experiences of wilderness.

Environmental Consequences

Alternative A (No Grazing) - This alternative would have a positive impact on wilderness. Without substantial grazing, the wilderness study area would return to more primitive and natural conditions. Scenic quality, which is one of the special features of the North Fork Owyhee River and Owyhee River-Deep Creek WSA, would improve as vegetative cover and diversity increases, streambank stability improves, and livestock trampling is eliminated. Habitat conditions for redband trout and bighorn sheep, also special features, would improve as livestock-related impacts to the river, riparian habitat, and uplands are reduced. This alternative would conform to the BLM Interim Management Policy and Guidelines for lands under wilderness review.

Alternative B (No Change) - The wilderness values of naturalness and outstanding scenic quality would continue to be negatively affected in portions of the wilderness study areas that receive heavy livestock utilization. Negative impacts related to existing livestock developments within the WSAs would remain but not increase. Motorized vehicles (including all-terrain vehicles) would be limited to designated roads except for occasional maintenance of some spring developments and reservoirs. This alternative would conform to the BLM Interim Management Policy and Guidelines for lands under wilderness review. Although Deep Creek and the Owyhee River would not be in the allotment, livestock would still have access to these areas in pastures 26A and 26B. Short and long term improvements in these areas would depend on keeping livestock out of the riparian areas. Areas where livestock congregate would continue to negatively affect wilderness values, both during and after the grazing season.

Alternative C (Proposed Action) - This alternative would have primarily positive impacts to wilderness values. Adjustments to the scheduled use periods would reduce livestock-related impacts to naturalness. Scenic quality, which is one of the special features of the North Fork Owyhee River and Owyhee River-Deep Creek WSAs, would improve as vegetative condition improves. Habitat conditions for wildlife within the WSAs, another special feature, would improve as livestock-related impacts to the watersheds are reduced. The wilderness value of naturalness would continue to be negatively affected in portions of the wilderness study area where livestock congregate. Direct and indirect impacts of adjusting the allotment boundary along the Owyhee River and Deep Creek drainages would be similar to those discussed under alternative B. This alternative would conform to the BLM Interim Management Policy and Guidelines for lands under wilderness review.

Negative impacts to wilderness related to existing livestock developments within the WSA would remain but not increase. Motorized vehicles (including all-terrain vehicles) would be limited to designated roads except for occasional maintenance of some springs and reservoirs. Removal of fencing from the North Fork Owyhee River WSA would have a positive effect on WSA values.

Alternative D (Light Use) - This alternative would have primarily positive impacts to wilderness values. Reductions in stocking levels would reduce livestock-related impacts to naturalness. Scenic quality, which is one of the special features of the North Fork Owyhee River and Owyhee River-Deep Creek WSAs, would improve as vegetative condition improves. Habitat conditions for wildlife within the WSAs, another special feature, would gradually improve as livestock-related impacts to the watersheds are reduced. The wilderness value of naturalness would continue to be negatively affected in portions of the wilderness study area where livestock congregate; however, because of lighter livestock use, the negative effects would be less than alternatives B or C. Direct and indirect impacts of adjusting the allotment boundary along the Owyhee River and Deep Creek drainages would be similar to those discussed under alternative B. This alternative would conform to the BLM Interim Management Policy and Guidelines for lands under wilderness review.

Negative impacts to wilderness related to existing livestock developments within the WSA would remain but not increase. Motorized vehicles (including all-terrain vehicles) would be

limited to designated roads except for occasional maintenance of some spring developments and reservoirs.

3.14 Cumulative Impacts

Scope of Analysis – The resources for which the proposed action and alternatives have direct or indirect impacts include upland vegetation; ACECs; invasive, nonnative weeds; fish and wildlife; wetland/riparian/aquatic; recreation; and social/economic. Livestock grazing and recreational uses are the primary past, present, and future actions and land uses that could cumulatively impact these resource values in the cumulative analysis area. Adjacent allotments that have recently issued grazing decisions include the Trout Springs, Pleasant Valley, Cliffs, and Burghardt allotments. Adjacent allotments where grazing decisions will be issued within the next few years include the Castlehead-Lambert, Garat, and Big Springs allotments. Public land makes up the majority of these allotments; however, they include varying degrees of state and private lands. Livestock grazing is the primary use of these lands; however, there has been substantial juniper treatment (cutting, burning) on some state and private lands, primarily to the north, east, and west of the Nickel Creek Allotment and the northern pastures of the Nickel Creek FFR Allotment.

Where livestock grazing practices are a significant factor in allotments that are not meeting Idaho Standards for Rangeland Health, grazing practices are adjusted so that progress will be made toward meeting the standards. As in the proposed action, adjustments are in conformance with the land use plan and could include changes to season, level, and duration of livestock use. Changes within the immediate watershed would have the greatest affect to improve upland and stream resources. Changes in adjacent watersheds would have the greatest beneficial affect on wildlife and recreation resources. Recreational uses (dispersed camping, hunting, rafting) are expected to increase through time.

Upland Vegetation - Under alternatives A, C, and D, improvements to upland vegetation would be expected. As changes are implemented in other grazing allotments, there would be a cumulative beneficial effect. Under alternative B, the continuation of the existing situation would not have an improvement to upland vegetation and standards and guidelines would not be achieved. Under all alternatives, expansion of juniper into sagebrush communities could result in changes in plant community composition and a downward trend in ecological condition in those areas over the long term; however, under alternatives A, C, and D, increased litter could result in wildfire playing more of a role in reducing juniper expansion and maintaining sagebrush communities.

ACECs - Under alternatives A, C, and D, improvements in the condition of ACECs would generally be expected; however, some localized negative impacts would continue to occur portions of the Badlands ACEC under alternative C. Improvements would occur over the short to mid term under alternative A and the mid to long term under alternatives C and D. As changes are implemented in other grazing allotments, there would be a cumulative beneficial effect. Under alternative B, conditions of ACECs would remain static or decline over the long term and land use plan objectives for the ACECs would not be met.

Invasive, Nonnative Weeds – Under all alternatives, invasive, nonnative weeds would have potential to expand beyond their current distribution, a cumulative negative impact. Establishment of a Cooperative Weed Management Area and subsequent treatment of weeds could reduce noxious weed populations. Continued juniper treatment (on private and state lands), livestock use, and increased recreation use would provide opportunities for introduction and expansion of invasive, nonnative weeds. Improvements in habitat conditions expected under alternatives A, C, and D could reduce susceptibility to weed invasion over the long term.

Fish and Wildlife - Under alternatives A, C, and D, improvements to fish and wildlife habitat would be expected. As changes are implemented in other grazing allotments, there would be a cumulative beneficial effect. Under Alternative B, the continuation of the existing situation would not have an improvement to fish and wildlife habitat and standards and guidelines would not be achieved.

Wetland/Riparian/Aquatic - Under alternatives A, C, and D, improvements to wetland, riparian, and aquatic resources would be expected. Hot season use in riparian areas in adjacent allotments would be reduced resulting in a cumulative beneficial effect. Improvements in streambank stability and vegetation cover would result in streams that are in proper functioning condition and meeting water quality standards. Alternative A would have the most rapid improvement. Under alternative B, most streams would remain in functioning at risk condition and standards and guidelines would not be achieved.

Recreation – Improving habitat conditions under alternative A, and to a lesser degree alternative D, would have a positive cumulative effect on most recreational opportunities. Continued resource degradation in areas not meeting standards would have a cumulative negative effect on recreational opportunities under alternative B. Under alternative C, increases in rangeland management projects would have positive and negative cumulative impacts. Positive impacts would include improvements in habitat conditions related to changes in grazing systems, removal of livestock from the Owyhee River and Deep Creek canyonlands, and protection or improvement of spring and riparian resources. Negative impacts would include the overall increase of projects; however, the total number of projects constructed would be consistent with the Owyhee RMP. Juniper treatment on state and private lands could have a negative or positive impact on visual resources depending on the recreation user.

Social/Economic - Alternative A would potentially have the greatest negative cumulative impact to grazing permittees and the local economy. Income from public lands grazing, currently an important component of the local economy, would be eliminated. This could be offset over the long term if recreation became a more important component of the local economy. If permitted use is reduced under alternative D, then there would be some negative cumulative impacts to grazing permittees and the local economy. Local economies would remain relatively unchanged under alternatives B and C.

3.15 Mitigation

Special Status Plant Species - Site-specific surveys would be conducted for special status plant species prior to implementation of all projects. In the event of discovery of resource values that

might be impacted by a project, the project would be relocated or modified to such an extent that the impacts would be avoided or mitigated to an acceptable level.

Special Status Animal Species - Site-specific surveys would be conducted for rare animal species prior to implementation of all the projects. In the event of discovery of resource values that might be impacted by the project, the project would be relocated or modified to such an extent that the impacts would be avoided or mitigated to an acceptable level.

Cultural Resources - Additional impacts of BLM actions resulting from the issuance of this grazing permit would be addressed on a project-by-project basis for compliance with Section 106 of the National Historic Preservation Act and NEPA / FLPMA. As a result of the 106 process, adverse effects would be avoided or mitigated to an acceptable level of impact.

Wilderness Study Areas - Within the wilderness study area, motor vehicles would not travel off designated roads as indicated on Map 1. Fence construction would primarily be accomplished on foot and horseback. The authorized officer would be notified in advance of fence construction dates so that fence construction can be monitored.

4.0 Consultation and Coordination

4.1 Public Participation

Time Period	Correspondence, Meeting, Activity
Spring 2001	Letter to permittees and interested publics indicating initiation of the Assessment process in the Nickel Creek Core area and inviting public participation and data submission.
Summer 2001	Field visits by Standards and Guidelines Assessment team, Owyhee Field Office staff, and permittees to evaluate the Nickel Creek Core area.
October 2002	Mailing of Draft Assessment and Determinations for Nickel Creek and Nickel Creek FFR allotments to permittees and interested publics. Recipients were given a 14-day period to provide comments and data related to the documents.
October 2002	Presentation of assessment and determination findings at Wings and Roots meeting in Boise.
October/November 2002	Field tours of the allotments were conducted for BLM staff, permittees, and interested publics.
November 2002	Article in Idaho Statesman publication inviting public participation in the process.
October 2002 –May 2003	Received seven written comments from interested publics (5) and permittees (2) related to assessment findings, issues, and development of alternatives.
November 2002 – June 2003	Conducted approximately 26 meetings with BLM staff (17), permittees (7), and interested publics (2) to discuss issues and develop alternatives.

4.2 List of Agencies, Organizations, and Individuals Consulted

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Rangeland Management Specialist

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Bruce Zoellick	Fisheries Biologist
Judi Zuckert	Outdoor Recreation Planner/Wilderness Coordinator

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6.0 Appendices

Appendix A. Proposed Stocking Densities by Alternative and Pasture, Nickel Creek Allotment, Owyhee County, Idaho.

Unit	Pasture Name (Number)	Alternative B		Alternative C	
		AUMs	Stocking Density (acres/AUM)	AUMs	Stocking Density (acres/AUM)
1	Battleground (1)	597	18	593	18
	Stoneman (2)	337	12	334	12
	Hidden Valley (8A)	586 (8A & 8B)	18	204	12
	Boni Table (8B)			621	13
	TOTALS	1,520		1,752	
2	Castle Creek (13)	223	9	146 to 163	13 – 14
	Fall Field (7A)	668	11	244 to 260	12 – 13
	Fall Field (7B)			260 to 342	13 – 17
	Star Table (16A)	162	18	179 to 228	13 – 17
	Castro Table (16B)	194	15	228 to 244	12 – 13
	Spring Field (5)	252	13	276	12
	Pasture 320 ^a			25	13
	Upper Smith Creek (10)	81 ^b	6	37	12
	TOTALS	1,683		1,395 to 1,575 ^c	
3	Sheep Hills (26A)	520	11	355 (Rest every other year)	16
	Sheep Hills (26B)	439	15	355 (Rest every other year)	19
	Badlands (27A)	715	11	96	20
	Brace Flat (27B)			386 to 448	12 – 14
	Big Field (17)	258	8	155	13
	Ben Mills (18)	329	9	247	12
	School Section/Rock Field (20/22)	224 to 323	8-12	201	13
	TOTALS	2,046 to 2,145 ^d 1,965 to 2,064 ^e		1,440 to 1,502 ^d 1,440 to 1,502 ^e	

^a no actual use reports exist for pasture 320, based on a stocking rate of 13 acres/AUM, 25 AUMs would be permitted in the pasture

^b values calculated for public land portion only, prior to fencing the pasture included state and private land with a total of 184 AUMs of use

^c not to exceed 1,510 AUMs/yr; see AUMs by pasture

^d when pasture 26B is rested

^e when pasture 26A is rested

Appendix B. Management Actions for ACECs (Owyhee RMP 1999), Nickel Creek and Nickel Creek FFR Allotments, Owyhee County, Idaho.

ACEC or Area Name	Pasture(s) Involved	Water Development				Livestock Management		Fencing		Juniper
		Springs	Pipeline	Wildlife	Reservoir	Salting	Grazing	Pasture	Exclosure	Juniper Cut/Burn
Owyhee River Bighorn Sheep Habitat Area ACEC	22, 25, 26A, 26B, 27	P	P	R/P*	R/P*	R	R	R/P*	R/P*	P
North Fork Juniper Woodland ONA/ACEC	1	P	P	P	P	R	R	P	R	P
Pleasant Valley Table RNA/ACEC	1	P	P	P	P	P	R	P	R	P
The Badlands RNA/ACEC	27 (A)	R	P	P	P	P	R	P	R	P

*R - 112,276 acres, P – 29,520 acres.

P – Prohibited. The specific water development, livestock management, fencing, juniper removal, and fire management actions are not allowed.

R – Restricted. Limitations apply to water developments, livestock management, fencing, juniper removal, fire management, and recreation use levels as described below.

Water developments. Allowed only where identified resource values (botanical, wildlife, scenic, cultural, watershed) will be enhanced or maintained and impacts can be mitigated.

Livestock management. Salt placement within and adjacent to the area will be considered on a site-specific basis for maximum protection of identified resource values. Domestic livestock grazing use (active preference) will not be increased within the area boundaries. Fencing may be necessary to exclude livestock in areas where degradation of identified resource values occurs.

Fencing. Allowed only where identified resource values (botanical, wildlife, scenic, cultural, watershed) will be enhanced or maintained and impacts can be mitigated.

Juniper removal. Limited to non-climax juniper and areas outside of WSAs, as identified in the Owyhee Juniper Woodland Management Plan.

Appendix C. Water Quality Restoration Plan for the Nickel Creek and Nickel Creek FFR Allotments.

Portions of the North Fork and Middle Fork Owyhee River (HUC #17050107) and the Upper Owyhee River (HUC #17050104) Subbasins

Overview

Streams on the Nickel Creek Allotment include all or portions of: the North Fork Owyhee River and Deep Creek and its tributaries (Nickel, Smith, Little Smith, Thomas, Little Thomas, Wilson, Beaver, Trap, Castle, Skunk, Jobe, Current, Corral, Dons, and Stoneman creeks). Additionally, Porcupine Creek is a tributary to the Owyhee River.

The North Fork Owyhee River forms a portion of the western boundary of the allotment and flows southwesterly to the Owyhee River in Oregon. The majority of tributaries to Deep Creek flow easterly from Juniper Mountain (Map 1). Deep Creek flows north to south to the Owyhee River.

In 1998, four water bodies in the Nickel Creek Allotment (one in the Middle Owyhee HUC# 17050107 and three in the upper Owyhee HUC# 17050104) were classified by the Environmental Protection Agency (EPA) under 303(d) of the Clean Water Act as water quality limited for the following reasons:

HUC #17050107

North Fork Owyhee River - Excessive sediment, high temperature, flow alteration

HUC #17050104

Deep Creek - Excessive sediment and elevated temperature

Nickel Creek - Excessive sediment

Castle Creek - Excessive sediment and elevated temperature

Designated beneficial uses of the North Fork Owyhee River include: cold water biota, salmonid spawning and rearing (of redband trout), secondary contact recreation, and agricultural water supply (IDAPA 16.01.02.140). All water bodies are required to meet Idaho water quality standards for designated beneficial uses within the State of Idaho.

IDEQ (1999) concluded in the North and Middle Fork Owyhee Subbasin Assessment and Total Maximum Daily Load (TMDL) that temperatures in streams the North and Middle Fork Owyhee Hydrologic Unit (HUC) exceeded current Idaho water quality standards for cold water biota, salmonid rearing and spawning during the designated spawning period. The excessive sediment classification was not supported by data collected and reviewed in the Subbasin Assessment, however, there can be no increases to the current sediment load that would impair existing uses (IDEQ 1999). The Subbasin Assessment also did not indicate an excess of bacteria in streams in the North and Middle Fork watershed, therefore no bacteria load reduction was

proposed. EPA does not require flow alteration to be addressed as a TMDL pollutant therefore flow alteration was not addressed.

IDEQ (2003) concluded in the “Upper Owyhee Watershed Subbasin Assessment and Total Maximum Daily Load” that the beneficial uses of cold water aquatic life and salmonid spawning were impaired in Castle, and Deep creeks, and a portion of Nickel creek in the Nickel Creek Allotment. Water quality in Deep and Castle creeks was impaired because of excessive sediment and elevated stream temperatures. The headwater portion of Nickel Creek was impaired as a result of excessive sediment. Additionally, BLM monitoring indicated water temperatures in Current, Nickel Smith, and Thomas creeks were elevated and not meeting State criteria for full support of the cold water biota beneficial use (USDI 2003a).

All pollutants listed in the 1998 303(d) list of impaired streams are from nonpoint sources originating on public, state or private lands within fifth order hydrologic units in the North Fork Owyhee River and Upper Owyhee River subbasins of southwest Idaho (Map 1; Hydrologic Unit Code Map).

The above listed pollutants, with the exception of flow modification, are the result of streambank damage and loss of stream shade due to excessive levels of livestock grazing. Road crossings are a minor source of sediment (IDEQ 1999, 2003). The Upper Owyhee TMDL identifies management objectives for riparian habitats to address water quality restoration goals (DEQ 2003).

Recovery Goals and Objectives

The recovery goal is to comply with the Clean Water Act and Idaho Water Quality Standards for temperature, sediment, and bacteria on streams crossing public lands in the Nickel Creek allotment and to meet load allocations set by IDEQ (1999, 2003) for water quality limited streams in the allotment.

IDEQ (2003) established a load allocation for streams in the Upper Owyhee River watershed that are impaired by sediment to have substrates composed of less than 30% fines (6mm in diameter), and a load allocation for temperature-impaired streams of greater than 80% stream shading. Similarly, IDEQ (1999) in the load allocation for the North Fork Owyhee River identified increased stream shading as the primary method to reduce stream temperatures by 32 to 53% to attain cold water biota criteria.

Objectives include: improve herbaceous and woody species diversity, composition, density, vigor, cover, structure and root-mass; reduce streambank damage; reduce bacteria contamination of the streams.

The vegetation community components required to meet standards for temperature and sediment are expected to include:

- \$ Woody species density and canopy cover providing 80% or more stream shading (IDEQ 2003).

- \$ Streambanks predominantly vegetated with late-seral stage riparian shrubs and hydric herbaceous species such as Nebraska sedge and woolly sedge that stabilize streambanks and channels.

Restoration Plan

Best Management Practices (IDEQ-ISCC 1993) proposed to address the pollutant sources are as follows:

Nickel Creek Allotment:

- \$ Pastures with streams and wetland habitats would either be grazed predominantly in spring with hot season use limited to one out of four years use, or grazed during the fall (Clary and Webster 1989, Myers 1989).
- \$ An exception would be Pasture 1, which would be grazed in spring in two years out of four, and receive one month (September use) of hot season grazing in two out of four years. During one of the two years with hot season use, livestock will be herded to keep them in the southern portion of the pasture away from streams and wetlands during the month of September. If herding is unsuccessful in preventing excessive hot season use of streams and wetlands in Pasture 1, then a new grazing decision will be issued that limits the frequency and duration of hot season grazing to levels similar to that of other riparian pastures in the allotment.
- \$ If portions of Stoneman Creek with an incised channel and highly-erodible streambanks do not improve under the prescribed grazing system (of one year of hot season grazing out of four years of use), then additional management actions will be applied such as placing juniper revetments on eroding banks and planting sedges and willows, and/or stream segments will be fenced temporarily until highly-erodible streambanks are revegetated.
- \$ Segments of Castle Creek adjacent to existing fences in pastures 16B, 18, and 19 (totaling about 1.25 miles of stream) will be fenced to exclude livestock grazing. About 0.4 mile of Deep Creek will also be excluded from livestock grazing in pastures 2 and 18.
- \$ Utilization of bluebunch wheatgrass, or needlegrass, bottlebrush squirreltail, Idaho fescue or mountain brome would not exceed 50% of current year's growth at key areas in pastures as determined by the Quantitative Assessment Landscape Appearance Method (U.S. Bureau of Land Management 1996).
- \$ At least a 4-inch median stubble height would be attained for key hydric herbaceous species such as Nebraska sedge and woolly sedge at the end of the growing period in riparian areas along North Fork Owyhee River, and Beaver, Castle, Current, Dons, Jobe, Little Smith, Little Thomas, Nickel, Skunk, Smith, Stoneman, Thomas, and Trap creeks. A 6-inch median stubble height would be retained on the North Fork Owyhee River

within the Juniper Woodland ACEC at the end of the growing season (Clary and Webster 1989, Cowley 1992).

- \$ Utilization of key riparian browse vegetation would be measured in terms of incidence of use (Cowley 1992). The incidence of use on such shrubs as willow, alder and dogwood would not exceed 25% on those plants generally less than 3 feet in height in any given year on the above listed streams in the allotment.
- \$ Streambank damage attributable to livestock grazing would not exceed 10% on any stream segment in the Nickel Creek allotment.
- \$ Salt and supplement will not be placed within one quarter mile of riparian areas, springs, streams, meadows, aspen stands, playas, or water developments.
- \$ Seven spring wetland areas would be excluded from livestock grazing. At three of these springs, water would be piped to troughs for livestock use and the overflow returned to the wetland areas that are excluded from grazing.

Nickel Creek FFR Allotment:

- \$ Realign pasture 7B/11 fence so that about 0.5 mile of Smith Creek is placed into pasture 7B such that it is grazed predominantly in spring (receives grazing during the summer in only one out of four years).
- \$ Continue to graze public land portions of Deep Creek in pasture 6 in fall such that residual riparian stubble-height and riparian browse utilization guidelines are met.
- \$ Exclude livestock use from about 0.25 mile of Castle Creek on public land in pasture 19.

The above described component practices are in compliance with the Natural Resources Conservation Service, Conservation Practice Standards for Prescribed Grazing, Code 528A.

Margin of Safety

How and to what extent the practice or group of practices is likely to reduce the pollutants and result in compliance with the Water Quality Standards:

- 1) Grazing riparian pastures (2, 7B, 10, 13, 16B, 17, 22, 27A) during spring in three out of four years, or only in spring and/or fall, would greatly increase the density, cover, and vigor of riparian shrubs on streams in these pastures. In a year that streams are grazed during the summer, livestock use of herbaceous riparian vegetation would likely be high and some bank alteration would occur, but overall trend in riparian shrub cover and shade and streambank stability would be upward because of grazing the streams in spring in three out of four years (Myers 1989).

- 2) Pasture 1 is the only pasture with streams and riparian habitats that would receive hot season grazing with a greater frequency than one in four years. Livestock use levels and trend in stream condition would be closely monitored. If herding is not successful in maintaining low levels of livestock use during one of the two years of hot season grazing, then a new decision would be issued that limits the duration and frequency of hot season use to levels similar to that of other riparian pastures in the allotment.
- 3) Stoneman Creek would also be closely monitored to determine trends in streambank stability and vegetative cover. If segments with an incised channel and highly-erodible streambanks do not improve in condition, then additional management actions would be taken to improve the stream such as juniper revetments and restoration plantings to stabilize banks and/or temporary fencing to eliminate livestock use until streambanks are stable and well vegetated.
- 4) Grazing Pasture 10 in the fall would result in Little Smith Creek continuing to remain in proper functioning condition and improvement in the condition of Smith Creek, provided short-term objectives for riparian browse use are regularly met (Kovalchik and Elmore 1992). The density, vigor, and cover of late-seral vegetation (willows, sedges, and rushes) would remain high due to the combination of fall grazing use and limiting livestock use of riparian shrubs (Clary and Webster 1992).
- 5) Streams grazed during the spring would have good potential for regrowth of willows and herbaceous riparian vegetation. This coupled with the retention of at least a 4-inch median stubble height on herbaceous riparian species, and 75% of the current year's growth of key shrubs at the end of the grazing period, would insure improved herbaceous and woody riparian vegetation composition, vigor, cover, structure, density and root mass (Clary and Webster 1989, Kovalchik and Elmore 1992). Improved vegetative conditions would result in improved buffering of erosive forces of high flows and increased filtering of sediment allowing for bank stabilization and aggradation, and improved levels of shade. Streambank stability should improve, water infiltration and bank storage should increase, and water quality and fishery habitat should improve.
- 6) The narrowing and deepening of the streams associated with bank stabilization and channel aggradation along with improved stream cover (shade) would reduce water temperature thereby complying with or approaching compliance with the ANorth and Middle Fork Owyhee Subbasin Assessment and Total Maximum Daily Load[®] (IDEQ 1999) and the "Upper Owyhee Watershed Subbasin Assessment and Total Maximum Daily Load" (IDEQ 2003), as well as Standard 7 (Water Quality) for Rangeland Health.

Implementation Plan

The grazing system would be implemented in the year 2004. Fence construction to facilitate proper management of riparian areas is scheduled for 2004 and 2005. Herding of livestock in pasture 1 to meet riparian management objectives is a priority along with the construction of the pasture 7 division fence to create a riparian pasture (7B). Pasture 7 would not be grazed during the summer (July 1 to September 30) until this fence is completed. Construction of the pasture 8

fence to eliminate livestock access to Nickel Creek is the next priority management action. Herding of livestock would be used to prevent hot season grazing of Nickel Creek until the pasture 8 fence is completed. Construction of exclosures and spring developments would occur during 2005 and later.

Greenline transects and/or permanent photo trend sites (Cowley 1992, Winward 2000) will be established on North Fork Owyhee River, and Dons, Current, Stoneman, Smith, Little Smith, Thomas, Little Thomas, Nickel, Castle, Beaver, Trap, and Deep creeks beginning in the year 2004 to monitor progress towards meeting recovery goals and objectives. Permanent photo trend sites have already been established on Current Creek.

Estimated Recovery Time

It is expected that a response to the management changes would be observed in as little as 5 years for some streams. Full recovery would be expected in 10 to 15 years on most streams that are functioning at risk. Those streams that are non-functioning or at the low end of the functioning at risk rating would be expected to take 20 years or more for full recovery.

Time frames for stream recovery in this area are based on observations of recovery times in nearby exclosures made by Riparian and Fisheries Specialists with the Lower Snake River District BLM.

Cumulative Impacts of Past, Present, and Future Management

It is expected that all streams in the Nickel Creek allotment would recover from past and present management under the proposed grazing management system. The Nickel Creek Allotment comprises _% of the North Fork Owyhee River hydrologic unit (HUC# 1705010708), and _% of the upper Owyhee River hydrological unit (#17050104).

The proposed improved management on the Nickel Creek Allotment would have the greatest affect on streams located entirely within the allotment, however it would also help improve water quality of stream segments such as Deep Creek located downstream of the allotment.

The middle portions of many streams draining eastward from Juniper Mountain are located within this allotment. The establishment of deep-rooted species such as sedge, rush, and willow would help these stream segments to deepen and narrow and also increase stream shading, which would provide cooler water with less sediment and bacteria to downstream reaches.

Monitoring Plan

The greenline transect monitoring method, as described in Idaho DEQ's AWater Quality Monitoring Protocols - Report No. 8" (Cowley1992) and in Winward (2000), will be the primary monitoring tool.

One greenline transect has been established on Stoneman Creek in the Nickel Creek allotment, and several photo trend sites have been established on Current Creek within the allotment.

Additional greenline transects and/or photo trend points will be established on North Fork Owyhee River, and Dons, Current, Stoneman, Smith, Little Smith, Thomas, Little Thomas, Nickel, Beaver, Trap, and Deep creeks beginning in the year 2004.

Livestock utilization of herbaceous and woody riparian species will be monitored periodically (U.S. Bureau of Land Management 1996, 1999).

Stream temperature will be monitored at 5 year intervals, or as deemed necessary to gather background data and to determine compliance with Idaho Water Quality Standards.

Functioning Condition assessments of streams on the Nickel Creek allotment will be conducted at 10 year intervals or when a change in functioning condition is apparent, whichever comes sooner.

All monitoring is subject to future funding and available personnel.

7.0 Maps