

PASS CREEK
RIPARIAN PASTURE
ENVIRONMENTAL ASSESSMENT
OR-05-026-072

Bureau of Land Management
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CHAPTER 1: INTRODUCTION: PURPOSE OF AND NEED FOR ACTION

The Bureau of Land Management (BLM) is proposing to construct approximately two miles of fence along Pass Creek in O'Keefe Seeding Pasture of Fields Basin Allotment in order to create a new riparian pasture. A change in the numbers of livestock and season of livestock use will accompany creation of this riparian pasture. A BLM interdisciplinary team (IDT) recommended action be taken to accelerate growth of riparian vegetation in the Pass Creek riparian area. The goal of the project is to address deficiencies in Standards for Rangeland Health for riparian condition, and by association, water quality, while providing for sustainable livestock grazing that meets allotment management objectives and Standards for Rangeland Health and Guidelines for Livestock Grazing Management (S&Gs, 1997). In addition to the Proposed Action, BLM also analyzed a No Action Alternative, a Herding Alternative and a Livestock Removal Alternative.

The allotment is located in Andrews Management Unit (AMU) in the southern portion of Harney County, Oregon. Fields Basin Allotment borders on Pueblo Mountains to the south and Basque Hills to the west and Harney County Road No. 202 to the north and east. O'Keefe Seeding Pasture is one of seven pastures in Fields Basin Allotment. Two term permits are currently authorized for 3,325 animal unit months (AUMs) for Fields Basin Allotment as a whole in spring (mid-April to mid-June) and late summer and fall (early August to mid-October) seasons. All authorized livestock grazing is by cattle. Other forage allocations include 49 AUMs for mule deer and seven AUMs for pronghorn. Fields Basin is a Management Category "I" (Improve) allotment. The "improve" category identifies allotments with management and resource concerns. These allotments receive priority for implementation, effectiveness, and performance monitoring.

A. Background

1. Authorized Grazing on Public lands

The Taylor Grazing Act of 1934 (43 U.S.C 315) provides basic legislative authority for livestock grazing on public lands, with provisions for protection of lands from degradation and for orderly use and improvement of public rangelands. The Act established a system for the allotment of grazing privileges to livestock operators based on grazing capacity and use priority, and for the delineation of allotment boundaries. It also established standards for rangeland improvements and implemented grazing fees.

Approximately 142 million acres of land in the western United States were placed under the jurisdiction of the Grazing Service, which became the BLM in 1946. The Federal Land Management Policy Act (FLMPA) (43 U.S.C. 1701, 1976) and the Public Rangelands Improvement Act of 1978 (43 U.S.C. 1901) mandate the management of public land for multiple use and sustained yield. Specifically, the regulations implementing these Acts call for rangeland management strategies that provide forage for economic use as well as for maintenance or restoration of watershed function, nutrient cycling, water quality, and habitat quality for special status species and native plants and animals (43 Code of Federal Regulations [CFR] 4180.1). These management strategies have been supported and implemented by development of national policies and the S&Gs.

2. O'Keefe Seeding Pasture in Fields Basin Allotment

Fields Basin Allotment is located in the AMU portion of the Andrews Resource Area of the Burns BLM District in the southern portion of Harney County, Oregon. The allotment borders on Pueblo Mountains to the south, Basque Hills to the west and Harney County Road No. 202 to the north and east. Prior to 2003, O'Keefe Seeding Pasture was in Miner's Field Allotment. The passing of the Steens Mountain Cooperative Management and Protection Act (2000) dissolved Miner's Field Allotment and placed O'Keefe Seeding Pasture into Fields Basin Allotment. The allotment is currently made up of the following pastures: O'Keefe Seeding, McDade, Fields Basin, Long Hollow, Summit, Private and North Rincon Seeding Pastures. The proposed location for the Pass Creek Riparian Fence is T.37S., R.32.75E., Sections 21, 22, 26, 27, 28, and 35 (see Map 1).

Two term permits are currently authorized for 3,325 AUMs for Fields Basin Allotment as a whole, from mid-April to mid-October. All authorized livestock grazing is by cattle. Other forage allocations include 49 AUMs for mule deer and seven AUMs for pronghorn. Based on average actual use from 2003-2006, stocking levels have ranged from 872-1,038 AUMs in O'Keefe Seeding Pasture. Use occurred in spring of one year followed by late summer/early fall the next (spring and late summer/fall use did not occur in the same growing season). Fields Basin is a Management Category "I" (Improve) allotment. The "Improve" category identifies allotments with management and resource concerns. These allotments receive priority for implementation, effectiveness, and performance monitoring.

3. Allotment Management Objectives and Rangeland Health Assessment

The AMU Resource Management Plan (RMP)(Appendix J, page 38) includes two general resource management objectives for O'Keefe Seeding Pasture: 1) Maintain/improve the condition of riparian vegetation communities, and; 2) Maintain the ecological condition of upland pastures.

The BLM formed an IDT who worked together to complete an assessment of the

S&Gs on Fields Basin Allotment in 2005 (signed in 2006). The IDT consisted of a wildlife biologist, a fisheries biologist, a natural resource specialist (botany), and a rangeland management specialist. The BLM IDT's rangeland health assessment for O'Keefe Seeding Pasture determined:

- Standard #1 (Watershed Function – Uplands) is not being met. However, livestock grazing is not the causal factor. The IDT determined Standard #1 is not being met due to encroachment of cheatgrass following a wildfire in 1999, and expansion and increase of Scotch thistle in O'Keefe Seeding Pasture in 2005.
- Rangeland Health Standards #2 (Watershed Function – Riparian/Wetland Areas) and #4 (Water Quality) are not being met along Pass Creek. Based on a Proper Functioning Condition (PFC) assessment conducted in 2005, the IDT determined Pass Creek is Functioning At-Risk (FAR) with a static trend. Although Pass Creek is not on Oregon Department of Environmental Quality's (DEQ) 303(d) list of water quality impaired streams, it is not fish-bearing and not a drinking-water source. The IDT presumed the rangeland health standard for water quality is not being met primarily due to the static riparian vegetation trend.
- Rangeland Health Standards #3 (Ecological Processes) and #5 (Native, T&E and Locally Important Species) is being met.
- Late summer and early fall grazing along Pass Creek with the currently-authorized number and kind of livestock was determined to be a contributing factor to the failure to achieve two rangeland health standards (Watershed Function – Riparian/Wetland Areas and Water Quality) in the O'Keefe Seeding Pasture.
- All rangeland health standards have been met in the rest of Fields Basin Allotment (McDade, Fields Basin, Long Hollow and Summit Pastures) under the currently authorized grazing plan.

B. Purpose of and Need for Action

The purpose of the Proposed Action is to accelerate an improvement in trend in riparian function for Pass Creek such that monitoring (at the end of the sixth growing season) would recognize a clear upward trend in riparian function, or PFC has been achieved. A BLM IDT recently determined Pass Creek in O'Keefe Seeding Pasture is FAR, the trend in condition was static, and livestock management had contributed to the static trend, especially in condition of riparian vegetation. Since condition of riparian vegetation is generally considered to be a primary contributor to non-point pollution (temperature and sediment) in streams in the Alvord Basin (Alvord Lake Subbasin Water Quality Restoration Plan 2006), the IDT further recognized the rangeland health standard for water quality was also not achieved. Consequently, the riparian resource management objective for the pasture was not met. When grazing management practices or levels of grazing use is determined to be "significant factors in failing to achieve the [Rangeland Health] standards", appropriate actions are required to be undertaken "as soon as practicable but not later than the start of the next grazing year" (43CFR 4180.1)(c).

In order to accelerate the static trend in riparian function for Pass Creek in a manner consistent with BLM policy and avoid potential impacts to water quality, the BLM believes a change in livestock grazing management must be initiated. The AMU RMP (p. 45) specifies “season of use changes, stocking level adjustments and exclusionary pastures...or rangeland projects” may be implemented to accomplish natural resource objectives.

1. Project Goals and Objectives

The goal of the project is to improve the condition of the riparian vegetation community along Pass Creek within O’Keefe Seeding Pasture (RMP Appendix J-38) in a manner consistent with AMU RMP management direction for Social and Economic Values, Vegetation, and Grazing Management, including:

- Provide for sustainable livestock grazing that meets allotment management (natural resource) objectives and the S&Gs (Social and Economic Values, RMP p. 45).
- Maintain, restore, or improve riparian/wetland vegetation communities relative to ecological status, site potential and capability, or site-specific management objectives, and Transportation Plans (Vegetation, RMP p. 24-25).
- Implement administrative solutions and rangeland projects to provide proper management for livestock grazing while meeting resource objectives and requirements for S&Gs (Grazing Management, RMP p. 54-56).
- Maintain, restore, or improve [fish and wildlife] habitat (Fish and Wildlife, RMP p. 33).

Specifically, the objective is to increase diversity and vigor of riparian plant species along Pass Creek such that a clear upward trend toward the potential natural community can be recognized at the conclusion of six growing seasons. At that time, post-season utilization monitoring, photo points and/or a PFC assessment should be able to recognize the following potential indicators (BLM Technical Reference 1737-15, Grazing Management Processes and Strategies for Riparian-Wetland Areas, 1998, p. 35-52):

- An increase in riparian vegetation cover on stream banks especially rushes, sedges and willows (Pass Creek has the biological potential for increased cover by willow species);
- An increase in riparian species diversity (new riparian species have been identified since the previous monitoring occurred);
- Evidence of recruitment (young plants) of all riparian species especially rushes, sedges and willows; and
- A relative decrease in upland species such as cheatgrass and thistles currently present in the riparian area.

Other qualitative riparian functions summarized on PFC forms (width/depth ration, riparian width, vertical stability, and sediment balance, for example) would also be considered when assessing riparian trends. In order for the objective to be achieved, BLM would expect evidence to support a FAR determination with a clear upward trend (or PFC) which would equate to “making significant progress toward properly functioning physical condition, including... riparian-wetland and aquatic components” (43 CFR 4180.1 [a]).

Improvements in water quality (decreased temperature resulting from increased shade, and decreased sediment inputs resulting from increased vegetative cover on stream banks) will be presumed based on improvements in riparian vegetation as described. Since Pass Creek is not fish-bearing, not a drinking-water source, not a perennial tributary to any fish-bearing stream or drinking water source, it will not be monitored specifically for temperature or sediment.

C. Decision Framework

The Andrews Resource Area Field Manager is the responsible official who will decide which alternative analyzed in this document best meets the purpose and need for action based on the interdisciplinary analysis presented in the environmental assessment (EA). Any decision will specify construction of any additional range improvements and any change in the kind and number of livestock, approximate season of use, and measures (terms and conditions) intended to mitigate any environmental effects.

D. Decision Factors

Any action alternative to be given serious consideration as a reasonable alternative must meet the objectives provided in the AMU RMP and be consistent with fundamentals of Federal rangeland health (43 CFR 4180.1). Decision factors are additional questions or statements used by the decision maker to choose between alternatives that best meet project goals and resource objectives. These factors generally do not include satisfying legal mandates, which must occur under all alternatives. Rather decision factors assess, for example, the comparative cost, applicability, or adaptability of the alternatives considered. The following Decision Factors will be relied upon by the Authorized Officer in selecting a course of action from the range of alternatives fully analyzed that best achieves the goals and objectives of the project:

1. The alternative achieves RMP management direction for Social and Economic, Vegetation, Grazing Management and Fish and Wildlife objectives (cited earlier) in a balanced manner, without placing greater importance on one over the other three.
2. The alternative is likely to achieve S&Gs for Oregon and Washington in accordance with 43 CFR 4180.2(b).
3. The alternative does not have unreasonable management cost to the public in achieving the project goals and objectives.
4. The alternative does not have unreasonable management cost to the livestock grazing

- permit holder.
5. The alternative achieves project objectives in a reasonable time frame.
 6. The alternative employs adaptive management strategies in order to assure success in achieving project objectives.

E. Relationship to Other Policies and Plans

This EA is tiered to the AMU/Steens Mountain Cooperative Management and Protection Area (CMPA) Proposed RMP (PRMP)/Final Environmental Impact Statement (FEIS) and relevant information contained therein is incorporated by reference. The proposed action has been designed to conform to the following documents, which direct and provide the legal framework for management of BLM lands within the Burns District:

- Taylor Grazing Act (43 U.S.C 315, 1934)
- National Environmental Policy Act (42 U.S.C. 4321-4347, 1970)
- Federal Land Management and Policy Act (43 U.S.C. 1701, 1976)
- Public Rangelands Improvement Act (43 U.S.C. 1901, 1978)
- Standards for Rangeland Health and Guidelines for Livestock Grazing Management for Public Lands Administered by the Bureau of Land Management in the States of Oregon and Washington (1997)
- Greater Sage-Grouse and Sagebrush-Steppe Ecosystems Management Guidelines (interagency - 2000)
- Bureau of Land Management National Sage-Grouse Habitat Conservation Strategy (2004)
- Local Integrated Noxious Weed Control Plan (2004)
- Andrews Management Unit Resource Management Plan/Record of Decision (August 2005)

F. Issues Considered but not Analyzed Further

The general project area was evaluated for presence of wilderness characteristics as part of Babes Canyon Unit in the AMU/CMPA PRMP/FEIS, August 2004 (Sections 3.23, p. 3-72 and 4.23, p. 4-249 to 4-256). An IDT completed the evaluation of the unit based on information from past wilderness characteristic inventories, current resource conditions and materials submitted by Oregon Natural Desert Association (ONDA). The IDT found Babes Canyon Unit did not contain wilderness characteristics. A following submission by ONDA also noted the specific area in which the riparian pasture would be established was excluded from ONDA's proposal for new wilderness. This finding was incorporated into the AMU RMP/Record of Decision (ROD) (August 2005) and, therefore, will not be analyzed further.

CHAPTER II: ALTERNATIVES, INCLUDING THE PROPOSED ACTION

A. Alternatives Analyzed in Detail

The following alternatives were considered in detail for management of O’Keefe Seeding Pasture:

1. Continuation of current management (No Action Alternative)
2. The Proposed Action, which creates a new riparian pasture with fencing and reduces livestock grazing in the new pasture – using both a reduction in stocking level and a change in the season of use. This alternative includes an adaptive management option for additional livestock removal if monitoring indicates this as necessary to achieve project objective.
3. Livestock Herding Alternative (Action Alternative 1)
4. Complete Livestock Removal from O’Keefe Seeding Pasture (Action Alternative 2)

B. Alternatives Considered But Not Fully Analyzed

No other alternatives were proposed by the public or otherwise considered by BLM.

C. Actions Common to All Alternatives

Due to the 2006 wildfires, no livestock grazing will occur in the entire Fields Basin Allotment for a minimum of two growing seasons (2007 and 2008) to allow for post-fire recovery (AMU RMP p. 54). This post fire recovery period may be extended if recovery requires additional growing seasons to meet vegetation standards established by Burns District BLM. Wildfire rehabilitation efforts will include monitoring for and treatment of new noxious weeds where they occur – specifically for nonnative thistles that can be treated with acceptable herbicides, regardless of the selected alternative. Rehabilitation efforts will be conducted during the period in which the allotment is recovering from the fire, and monitoring and treatment would continue after grazing is resumed.

D. No Action Alternative

After two grazing seasons of post-fire recovery (or until vegetative recovery occurs), livestock grazing would continue as before in Fields Basin Allotment and in O’Keefe Seeding Pasture (April 1 to June 15 and August 15 to October 30 in alternate years). The AUMs for the two permittees would remain at 3,179 and 327 active preference AUMs, respectively. Approximately 450 head of cattle would use the pasture, including the Pass Creek riparian area, as a mixed (both permittees) herd.

This alternative provides a baseline from which to compare effects of action alternatives, but does not conform to BLM S&Gs. Specifically, actions required by grazing regulations (43 CFR 4180.2(c)(1)) would not be implemented under this alternative. Moreover, this alternative does not meet one of the primary AMU RMP objectives, which is to manage vegetation to achieve and maintain healthy watersheds (RMP, p.24).

E. Proposed Action

The Proposed Action is an adaptive management alternative that creates a new riparian pasture out of O’Keefe Seeding Pasture, reduces stocking levels, and employs monitoring to adjust the limited fall use period to ensure riparian vegetation objectives are achieved. Approximately two miles of three-strand barbed wire fence would be constructed along the southwest side of Pass Creek, connecting existing fence lines. “Fencing to delineate pastures associated to area specific management objectives, or to establish permanent, temporary or seasonal exclusion from specific areas” is one of the possible Best Management Practices (BMPs) available to BLM (AMU RMP/ROD, Appendix B, page 5). The fence would create an approximately 1,100-acre pasture called Pass Creek Riparian Pasture. Pass Creek would provide the only water available for livestock use within the new pasture. The remaining 3,353 acres would continue to be identified as O’Keefe Seeding Pasture with four troughs on an existing pipeline as a water source for livestock. The riparian pasture would provide for closer management and control of cattle presence and forage consumption without the need for constant presence by range riders during the late summer/early fall authorized grazing season.

Livestock grazing would resume after the fire-recovery period in O’Keefe Seeding and Pass Creek Riparian Pastures. Approximately 50 head of cattle from one permit (125 AUMs) would be authorized to use Pass Creek Riparian Pasture during the spring season (April 1 – June 15) of alternate years. A total of 50 head of cattle from both permits would be permitted to graze Pass Creek Pasture in the late summer/fall season (50 AUMs) during alternate years. Spring and fall grazing would not occur during the same year. Table 1: Grazing Rotation Schedule - Proposed Action, outlines the proposed grazing schedule for the pasture (assuming a longer period would not be necessary for post-fire recovery). No change to permitted use within Fields Basin Allotment would occur, and pattern of use would be the same as before the 2006 wildfire. Only the number of livestock and extent of the fall use period along Pass Creek is proposed for change.

Table 1: Grazing Rotation Schedule - Proposed Action

Year	2007	2008	2009	2010	2011	2012	2013
Spring Use Season/AUMs	rest	rest	April 1 – June 15 125	rest	April 1 – June 15 125	rest	April 1 – June 15 125
Late summer/Fall Season/AUMs	rest	rest	rest	August 1 – Sept. 1 50	rest	August 1 – Sept. 1 50	rest

Project Design Features

1. The fence would be constructed to BLM specifications for a 3-strand barbed wire fence, including 22-foot line post spacing. Wire spacing would be 18 inches, 30 inches, and 42 inches up from the ground with a smooth bottom wire. The livestock permittees would be responsible for fence maintenance defined in a cooperative agreement.
2. No blading, grading, or scalping of the fence line would be allowed.

3. Prior to final inspection all construction trash and excess debris would be removed from the public lands and disposed of at a site approved by the BLM Contracting Officer.
4. Fence construction activities would occur after the ground is dry and before weeds have set seed. Seed set generally occurs from approximately June 1 through July 1.
5. Vehicles and equipment would be cleaned prior to entry to the site for fence work.
6. A two-track trail adjacent to the fence would remain available for maintenance access.

Monitoring

Monitoring for short-term progress toward objectives would occur at the close of each grazing year. The utilization target for key sedge species is an average four inches of residual stubble height at the end of each growing season (using the stubble height method for measuring residue, BLM 1999). If monitoring indicates key-species utilization targets have been reached or exceeded before the authorized one-month fall season has ended, livestock would be removed from Pass Creek Pasture for the remainder of the use season. As key willow species expand within the pasture, these would be monitored for preference change (the point in time at which livestock choose willows over other forage species available). Utilization targets would be established as appropriate, and may be qualitative (photo points) rather than quantitative in order to best account for variation in species needs and growing season conditions (AMU RMP, Appendix H, page 4).

Monitoring for long-term riparian conditions would occur at least three times between 2007 and 2012 (six years after the last wildfire). This could consist of photo points, greenline, or other methods determined to be appropriate for the site and available resources. If after six growing seasons monitoring indicates grazing with reduced numbers of livestock during the August 1 - September 1 season is not achieving riparian vegetation objectives as described in the Purpose and Need, livestock grazing would be further reduced in Pass Creek Pasture. This may include restriction of use to one out of three years, one out of four years with associated monitoring, or complete elimination of late-season grazing in Pass Creek Pasture. Any decision to be reached following additional monitoring would be documented in a revised Proposed Grazing Decision with associated rationale.

F. Livestock Herding Alternative (Action Alternative 1)

“Herding” is one of the possible BMPs available to BLM (AMU RMP/ROD, Appendix B, page 5). Spring grazing would resume after the fire recovery period (in 2009), and would occur every other year in O’Keefe Seeding under the current grazing schedule. Late summer/fall livestock grazing would resume in 2010, and occur every other year thereafter. A fence would not be constructed. Pass Creek Riparian Pasture would not be created.

Each day of the late summer/fall grazing period a rider (or riders) with dogs would be

required to ensure riparian vegetation objectives are met. This would be achieved by limiting the amount of time animals spend in the riparian area. Grazing permits would remain at 3,179 and 327 active preference AUMs for two permittees in Fields Basin Allotment. All other livestock would water at one of four troughs elsewhere in O'Keefe Seeding Pasture. Since the later grazing season was determined to be the primary contributing factor to lack of progress in riparian vegetation development, herding would occur only during the alternate late seasons when cattle are present.

Monitoring

Monitoring would occur on the same schedule with the same key species targets as with the Proposed Action. Restrictions required to achieve riparian vegetation objectives may result in little or no use of upland vegetation east of Pass Creek once utilization targets have been reached for key sedges and rushes or preference changes to shrubs. After this time riders may be required to keep cattle entirely on the west side of Pass Creek in order to avoid concentrated impacts to vegetation and bank stability from repeated stream crossings.

G. Complete Livestock Removal from the Pasture (Action Alternative 2)

No fence would be constructed. No livestock grazing would occur in O'Keefe Seeding Pasture after the fire recovery period. The pasture would no longer be included in the grazing management plan for Fields Basin Allotment. Riparian vegetation along Pass Creek would be allowed to expand and develop at a rate that would not be influenced by livestock grazing utilization. The CFR published in October 2006 provides that BLM will implement changes in active use in excess of 10 percent (for the allotment) over a five-year period unless (1) an agreement with the affected permittee or lessee is reached to implement the change within a shorter period of time, or (2) the changes must be made before five years have passed in order to comply with applicable law.

Since the allotment does not have capacity to absorb the full reduction of AUMs from O'Keefe Seeding Pasture for the balance of the affected grazing years, and the change in active use would be greater than ten percent (a reduction of approximately 950 AUMs out of an allotment total of 3,325), reduction in livestock use would be phased-in over five years unless permittees agreed to a more condensed schedule (43 CFR 4110.3-3(a)(1)).

After the two-year fire recovery period, livestock would be removed from the entire O'Keefe Seeding Pasture over an additional three-year period. A new Term Permit would have to be issued, and the permittees would be required to replace approximately 950 AUMS outside of Fields Basin Allotment to maintain current stocking levels.

Monitoring

Since no livestock use would occur, and it is presumed that riparian function would progress without the influence of livestock herbivory (BLM Tech Ref. 1737-20, p.59),

only long-term monitoring of Pass Creek would occur. Riparian condition would be evaluated for progress once by the riparian specialist approximately three years post-fire, and a full PFC assessment by an IDT would be conducted at the end of the sixth year after fire recovery (in 2012).

CHAPTER III: AFFECTED ENVIRONMENT

A. Identification of Affected Elements of the Environment

The interdisciplinary team reviewed the elements of the human environment required by law, regulation, Executive Order and policy to determine if they would be affected by the Proposed Action. Table 2 - Critical and noncritical elements of the human environment, summarizes the results of that review. Affected elements are bold. All entries apply to the action alternatives unless otherwise noted.

Table 2 - Critical and noncritical elements of the human environment

Critical Elements of the human environment	Status	Project contributes to cumulative effects?	If Not Affected, why? If Affected, Reference Applicable EA Section
Wetlands/Riparian Zones (Executive Order 11990)	Affected	No	See page 19
Air Quality (Clean Air Act)	Not Affected	No	There would be no change in air quality as a result of building a fence.
American Indian Traditional Practices	Not Present	No	No concerns have been disclosed.
Areas of Critical Environmental Concern	Not Present	No	The closest ACEC is Borax Lake, approximately 5 miles northeast of the project area.
Cultural Resources	Not Present	No	As a result of surveys, no cultural resources are known or suspected to be present in the proposed project areas.
Environmental Justice (Executive Order [EO]12898)	Not Affected	No	The Proposed Action is not expected to have disproportionately high and adverse human health or environmental effects on minority populations and low-income populations.
Flood Plains (EO 13112)	Not Present	No	The Proposed Action does not involve occupancy and modification of floodplains, and would not increase the risk of flood loss.
Hazardous or Solid Waste	Not Present	No	
Invasive Nonnative Species (plants) (EO 13112)	Affected	No	See page 22
Paleontological Resources	Not Present	No	
Prime or Unique Farmlands	Not Present	No	

Migratory Bird Treaty Act (EO 13186)		Affected	Yes	See page 23
Water Quality (Surface and Ground)		Affected	No	See page 25
Wildlife/ Threatened or Endangered (T/E) Species or Habitat	Fish	No	No	Pass Creek is not fish-bearing
	Wildlife	No	No	No Federal T/E wildlife species are known or suspected to occur in the project area
	Plants	No		No Federal T/E plant species are known or suspected to occur in the project area
Wildlife/BLM Special Status Species and Habitat	Fish	Not Present	No	
	Wildlife	Affected	No	<i>greater sage-grouse</i> – Affected . See page 26. <i>pygmy rabbit</i> – Not Present. There are no historical sightings within O’Keefe Seeding Pasture or Fields Basin Allotment. The project area and allotment do not contain the following combination of habitat features that would make them suitable pygmy rabbit habitat: No seeding or recent fire; > 23% big sagebrush cover; > 40” deep soil with sandy loam or loamy sand surface texture; <40” deep soil with loamy subsoil, and; historical plant community had big sagebrush and basin wildrye (Bartels 2003).
	Plants	Not Affected	No	<i>Raven’s lomatium</i> – Not Affected. See page 27
Wild and Scenic Rivers		Not Present	No	
Wilderness		Not Present	No	
Noncritical elements of the human environment	Status	Project contributes to cumulative effects?	If Not Affected, why? If Affected, Reference Applicable EA Section	
Grazing Management	Affected	No	See page 28	
Recreation	Not Affected	No	No specific recreational uses have been identified for the project area. No changes to general recreational setting, access routes, or likely recreational experience would occur.	
Soils/Biological Crusts	Affected	No	See page 29	
Upland Vegetation	Affected	No	See page 31	
Visual Resources	Not Affected	No	Though visible from Harney County Road 202, the fence would not dominate the view as seen from the road by the casual observer; therefore, Class III VRM objectives would continue to be met.	
Water Resources (303d listed streams, DEQ 3219 assessment, downstream beneficial uses)	Not Present	No		
Social and Economic Values	Affected	No	See page 28	
Wilderness Characteristics	Not Present	No	See page 6	

Wildlife/Locally Important Species and Habitat	Affected	No	See page 33
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B. Critical Elements

1. Wetlands and Riparian Zones

Current discussion and analysis of potential effects to wetlands and riparian zones are tiered to the AMU/CMPA PRMP/FEIS (August 2004), and relevant information contained in the following sections is incorporated by reference: Sections 3.5.1, p. 3-11 and 4.5.2, p. 4-31.

A PFC assessment was conducted on Pass Creek in 1998 and again in 2005. The two different IDTs determined Pass Creek in O’Keefe Seeding Pasture is FAR with a slight upward trend. The trend was determined to be slightly upward in both assessments only because riparian plant species were present and had potential to expand. The 2005 IDT concluded late summer/early fall grazing at the current stocking level was a contributing factor to this slow development of riparian vegetation by reducing riparian plant resources needed to supply the following season’s growth.

As a result of a combination of historical factors (uncontrolled land use, overstocking, and large storm events in the early to mid-part of last century, for instance) at play prior to the current grazing plan, some stream channels on the east side of Pueblo Mountains (including Pass Creek) became deeply incised. The vegetative community along Pass Creek within O’Keefe Seeding pasture consists of riparian-associated plants such as sedges (*Carex* species), rushes (*Juncus* species), manna grass (*Glyceria* species), monkeyflower (*Mimulus* species) and wild rose (*Rosa woodsii*). However, this community has been invaded by upland-associated species such as big sagebrush (*Artemisia tridentata*) and rabbitbrush (*Chrysothamnus* species), and other nonnative species such as Scotch thistle (*Onopordum acanthium*), Kentucky bluegrass (*Poa pratensis*), and cheatgrass (*Bromus tectorum*). One patch of willows (*Salix* species) is present along Pass Creek. Willows, sedges and rushes are deep-rooted species more capable of stabilizing stream banks and preventing bank erosion than upland species and nonnative annual grasses (BLM Tech. Ref. 1737-20, p. 6).

Although an upward trend would normally indicate “significant progress” (43 CFR 4180) toward meeting the rangeland health standard for “Watershed Function – Riparian/Wetlands”, the slight upward trend sustained after seven years suggested to the IDT the trend is so slight it would be more reasonable to call the trend “static.” Consequently, it was determined “significant progress toward rangeland health” is not occurring, and the applicable rangeland health standard has not been achieved.

2. Noxious Weeds

Current discussion and analysis of potential effects to noxious weeds are tiered to the AMU/CMPA PRMP/FEIS (August 2004), and relevant information contained in the following sections is incorporated by reference: Sections 3.5.5, p. 3-17 and 4.5.6, p. 4-60.

The BLM weed monitoring records indicate O'Keefe Seeding Pasture, including the riparian area along Pass Creek, has approximately 2,500 acres of infestation by Scotch thistle. The BLM has been treating this area (with approved herbicides) for the past six years. In 1999, the Scotch thistle infestation appeared following a wildfire in 1998. The thistle population was greatly reduced until 2005, which was a year with optimal growing conditions (e.g., moisture availability, growing season,) for thistles. Ninety acres were treated, though due to staffing and time limitations, all plants were not treated prior to seed set. There is a sustained (and untreated) seed source for Scotch thistle at O'Keefe Spring, which is privately owned. Thistle seed from this infestation continues to re-infest adjacent public lands. Due to the wildfire of 2006 and presence of Scotch thistle in parts of the allotment, noxious weed spread is considered likely especially in areas burned.

3. Migratory Birds

Current discussion and analysis of potential effects to migratory birds are tiered to the AMU/CMPA PRMP/FEIS (August 2004), and relevant information contained in the following sections is incorporated by reference: Sections 3.6.2.5, p. 3-22 and 4.7.2.2, p. 4-99.

Affects to Migratory Birds are being assessed because they are considered to be a critical element of the human environment (as a result of the Migratory Bird Treaty Act). Further, an assessment of affects to migratory birds addresses Objective #4 (maintain, restore, or improve [fish and wildlife] habitat). Bird presence surveys have not been conducted in the allotment. Landbird species habitat associations are summarized in the Conservation Strategy for Landbirds in the Columbia Plateau of Eastern Oregon and Washington (Columbia Basin Plan, 2001), and these associations can be used to reliably predict species occurrence in Fields Basin Allotment. Most migratory bird species likely to be found in the Pass Creek project area are associated with the shrub-steppe plant community. These include Brewer's blackbird, sage thrasher, Brewer's sparrow, white-crowned sparrow, and American robin. The presence of riparian obligate species in the project area is limited by lack of vertical structure (e.g. trees, shrubs) that would provide nesting habitat. Riparian areas are considered to be priority habitats for landbird conservation efforts within the Columbia Plateau Bird Conservation Region (Altman 2000).

4. Water Quality

Current discussion and analysis of potential effects to water quality are tiered to the AMU/CMPA PRMP/FEIS (August 2004), and relevant information contained in the following sections is incorporated by reference: Sections 3.3.1, p. 3-3 and 4.3, p. 4-6.

Pass Creek becomes intermittent shortly after exiting O’Keefe Seeding Pasture. It is not an Oregon DEQ 303(d) listed stream, not fish-bearing, does not receive any known public recreation use, and not a source for public drinking water. Primary known uses are as a water source for wildlife and livestock. The IDT’s determination the rangeland health standard for water quality was not met was based solely on observations of a lack of vegetative shading and potential for bank instability in the riparian area (from PFC assessment).

5. Special Status Species – Fauna

Current discussion and analysis of potential effects to special status species animals are tiered to the AMU/CMPA PRMP/FEIS (August 2004), and relevant information contained in the following sections is incorporated by reference: Sections 3.7.2., p. 3-26 and 4.7.2, p. 4-98.

Greater Sage-Grouse: Prior to 1999, the project area was classified as sage-grouse habitat (BLM Geographic Information System [GIS] Layer 2004¹) with season of use uncertain. Due to a rehabilitation project that followed a 1999 wildfire, crested wheatgrass was seeded in O’Keefe Seeding Pasture to prevent spread of cheatgrass in some of the burned area. Consequently, the area was classified as altered sage-grouse habitat with potential to be habitat. Approximately two miles to the west, the habitat was classified as yearlong, while the rest of the area around the burn was classified as sage-grouse habitat with season of use uncertain. A second wildfire occurred in 2006 that burned O’Keefe Seeding Pasture and surrounding areas, and again returned vegetation to an early-successional plant community (largely grasses and forbs). The new habitat determination is altered sage-grouse habitat with potential to be habitat (this has not yet been changed in the BLM GIS layer).

No breeding, brood-rearing, or winter habitat use within the project area was known to occur prior to the 1999 wildfire. The nearest greater sage-grouse lek is approximately 3 miles (4.8 km) away from the proposed Pass Creek Riparian Pasture. No recent field observations have indicated sage-grouse use in sagebrush areas that remain within the burned area.

6. Special Status Species – Flora

¹ The Sage Grouse habitat layer was created as a result of a collaborative effort between BLM and Oregon Department of Fish and Wildlife biologists. The layer was updated annually through 2004. The 2006 fire modified the habitat determination made in 2004.

Current discussion and analysis of potential effects to special status species plants are tiered to the AMU/CMPA PRMP/FEIS (August 2004), and relevant information contained in the following sections is incorporated by reference: Sections 3.7.1., p. 3-23 and 4.7.1, p. 4-90.

One special status plant species may occur within the project area. A plant suspected to be Raven's lomatium (*Lomatium ravenii*) was discovered during the rare plant inventory along the proposed fence line. Raven's lomatium is a Bureau Assessment species (species not presently eligible for official Federal or State status but are of concern in Oregon and need protection from BLM activities). The taxonomy question of the specimens discovered along the fence line is unresolved; the plants are either Raven's lomatium or a more common species Nevada lomatium (*Lomatium nevadense*), which is not a BLM special status species. The two species are very difficult to distinguish from each other, but specimens from similar habitat on the east side of Steens Mountain and just north of the proposed fence were determined to be Nevada lomatium. A specimen determined to be Raven's lomatium was discovered in Catlow Valley. Surveys are planned in late April and early May 2007 (during the flowering period) to resolve the taxonomy of the lomatium species present. Effects resulting from the Proposed Action would be the same for either species.

C. Noncritical Elements

1. Grazing Management

Current discussion and analysis of potential effects to grazing management are tiered to the AMU/CMPA PRMP/FEIS (August 2004), and relevant information contained in the following sections is incorporated by reference: Sections 3.15., p. 3-48 and 4.7.2, p. 4-15, p.4-183.

The current permittees are two individuals (one permit) and Stafford Ranches (one permit). Current active authorized grazing use is 327 AUMs for the first permittee and 3,179 AUMs for Stafford Ranches in Fields Basin Allotment. Based on actual use reports from 2003-2006, stocking levels have ranged from 872-1,038 AUMs in O'Keefe Seeding Pasture. At present, livestock graze O'Keefe Seeding Pasture approximately April 1 to June 15; during alternate years livestock use the pasture approximately August 15 to October 30. There are 4,453 acres in O'Keefe Seeding Pasture. This includes a 2,800-acre crested wheatgrass seeding which is in excellent condition (AMU RMP/ROD, Appendix J-38.). Based on annual allotment summaries, utilization along Pass Creek has been moderate to heavy, and slight to light in uplands away from Pass Creek. This indicates unused forage is available in the uplands, which could accommodate AUMs reduced from the proposed Pass Creek Riparian Pasture.

2. Soils/Biotic Crusts

Current discussion and analysis of potential effects to soils and biological crusts are tiered to the AMU/CMPA PRMP/FEIS (August 2004), and relevant information contained in the following sections is incorporated by reference: Sections 3.4., p. 3-7 and 4.4, p. 4-21.

Soils in the project area are composed of two general types. The Ninemile-Westbutte-Carryback is characterized by moderately deep, well-drained clays on gentle slopes. These soils have low potential for wind or water erosion. The Raz-Brace-Anawalt type is characterized by shallow to moderately deep, well-drained silty clays on gentle slopes. These soils also have low potential for wind or water erosion.

Biological soil crusts are not a common feature of the soil surface in the project area. Soil crust communities within the pasture and allotment are likely to be most developed in the rockiest, most unproductive (for vascular plants) areas on north and east aspects, with shallow soils (AMU/CMPA PRMP/FEIS, p. 3-8). None were observed during an inventory of the project area.

In general, biological soil crust data specific to the northern Great Basin has been lacking in the past. Preliminary field observations in 2002 and 2003 indicate the project area contains primarily perimorphic and secondarily hypermorphic biological soil crusts. Hypermorphic biological soil crusts are found primarily on more stable soils and are generally the most susceptible to disturbance. Perimorphic biological soil crusts, which are the dominant form in the AMU, occur both above and below the soil surface and are intermediate in their tolerance of disturbance. Cryptomorph biological soil crusts are the most difficult to observe and occur to a lesser known extent within the AMU. This group of microbiota is the most tolerant to disturbance (Evans and Johansen 1999).

3. Upland Vegetation

Current discussion and analysis of potential effects to upland vegetation are tiered to the AMU/CMPA PRMP/FEIS (August 2004), and relevant information contained in the following sections is incorporated by reference: Sections 3.5.4., p. 3-14 and 4.5.5, p. 4-52.

Native vegetation communities on slopes in Pass Creek Pasture are composed primarily of Wyoming big sagebrush (*Artemisia tridentate wyomingensis*), low sage (*Artemisia arbuscula*), antelope bitterbrush (*Purshia tridentata*), bluebunch wheatgrass (*Pseudoregneria spicata*), and Idaho fescue (*festuca idahoensis*). In flatter areas along Pass Creek, basin wildrye (*Leymus cinereus*) is common. Most of the western portion of the pasture burned in a 1999 wildfire, after which it was seeded to crested wheatgrass (native vegetation is now a minor component of the seeding area). Scotch thistle and cheatgrass have become well-established here as well.

Native upland vegetation within the pasture was generally determined to be in an advanced seral stage (mature communities that include most or all potential species). The crested wheatgrass seeding was determined to be in excellent condition (vigorous and producing seed) under the currently authorized grazing plan (rangeland health standard for uplands was achieved).

4. Visual Resources

Current discussion and analysis of potential effects to visual resources are tiered to the AMU/CMPA PRMP/FEIS (August 2004), and relevant information contained in the following sections is incorporated by reference: Sections 3.11., p. 3-38 and 4.11, p. 4-149.

The proposed project is in a Class III Visual Resource Management (VRM) category. Objectives of this category are to partially retain the existing character of the landscape. Level of change to the characteristic landscape should be moderate. Management activities may attract attention but should not dominate the view of the casual observer. The general landscape view from Harney County Road 202 consists of steep to gentle rolling hills mainly golden-yellow in fall and green in spring. Pass Creek cannot be seen from the highway, but the draw that Pass Creek drains into can be seen.

5. Wildlife/Locally Important Species and Habitat

Current discussion and analysis of potential effects to wildlife/locally important species and habitat are tiered to the AMU/CMPA PRMP/FEIS (August 2004), and relevant information contained in the following sections is incorporated by reference: Sections 3.6.2, p. 3-20, and 4.6.2, p. 4-76.

Fields Basin Allotment allocates 49 AUMs for mule deer and seven AUMs for pronghorn (AMU/CMPA RMP/ROD, Appendix J-38). The project area provides summer range for pronghorn and mule deer, and is also within a spring/fall migration corridor for mule deer. Occasional sightings of elk occur west of the subject area. A variety of species of nongame and upland game occur in the proposed project area including mourning doves, chukar, ground squirrels, rabbits, and other rodents.

6. Social and Economic Values

Current discussion and analysis of potential effects to social and economic values are tiered to the AMU/CMPA PRMP/FEIS (August 2004), and relevant information contained in the following sections is incorporated by reference: Sections 3.12, p. 3-38, and 4.12, p. 4-156.

Harney County, located in the Boise trade center, is an area of low economic and

social resiliency. This determination is based on the county's dependence on public land timber and forage and the fact 21 percent of the county budget is derived from Federal land payments. Harney County was found to have a medium to high agricultural employment specialization. The BLM and other public land management agencies often make commodities available for use by the private sector. The BLM makes rangelands available to private ranching concerns on a renewable permit basis. Agricultural activities in Harney County are not considered highly labor-intensive and are limited primarily to production of hay, forage, and livestock. The highest individual agricultural sales revenue in Harney County is derived from cattle ranching, which is inextricably linked to the commodity value of public rangelands (AMU/CMPA Draft RMP/EIS, p. 3-37).

The permittees have paid \$4,217.90 in livestock fees for use of O'Keefe Seeding Pasture during the last three years. No other specific social and economic values have been identified for the project area other than its intrinsic value as part of a larger, recreational use area.

Funds are available as distributions from Federal grazing receipts to the BLM grazing districts where grazing occurs as range improvement funds. Burns District BLM has an annual range improvement fund of approximately \$100,000 each year. Harney County also received funds for range improvements as a distribution from Federal grazing receipts in an amount of approximately \$45,000 each year. Range improvement funds are made available specifically to provide for projects that support public land grazing opportunities.

CHAPTER IV: ENVIRONMENTAL CONSEQUENCES, INCLUDING CUMULATIVE EFFECTS

This section presents potential changes to the environment due to implementation of alternatives. Cumulative effects are incorporated into the effects analysis for each relevant resource.

A. Effects to Critical Elements

1. Wetlands and Riparian Zones

General discussion

Uninterrupted growth and expansion of riparian vegetation would occur during the post-fire recovery period, including possible expansion of willow species from the seed source identified elsewhere along Pass Creek. Rate of expansion and vigor of riparian plant communities are dependent upon a range of factors beyond management control, in addition to effects of livestock grazing. Length of the effective growing season is affected by amount and season of precipitation

and periods of extreme high and low temperatures. Vigor can be affected by insects, herbivory by native animals, and plant pathogens. Therefore, due to the dynamic nature of the area and potential outside forces at work, the time period required to recruit willows to new areas is not known, and the rate of riparian vegetation development within any period of time is difficult to predict. This must be estimated based on IDT professional judgment and experience with similar riparian areas in Alvord Basin.

In general, BLM staff observations and management experience elsewhere in Andrews Resource Area indicate reducing livestock numbers during any season of use, or reducing the time a given number of livestock spend in a riparian area, would direct some upward trend from existing condition in any riparian pasture. Season of use also plays a major role in effects livestock grazing has on riparian vegetation. Early season use has the following advantages over summer and fall grazing seasons (BLM Technical Report 1737-20, 2006, p. 41):

- Availability of palatable herbaceous plants reduces pressure on woody plant species;
- riparian vegetation by livestock is reduced because upland plants have similar or higher nutritional content than riparian forage;
- cooler temperatures in uplands negate the desire of animals to stay near riparian areas to avoid hot temperatures;
- regrowth of plants would occur if animals are removed before suitable growing conditions end, especially for willows or other woody shrubs. This helps to maintain plant vigor and growth.

For these reasons, spring grazing is less likely to inhibit riparian vegetative vigor, productivity, and recruitment than summer and fall grazing, especially when an objective is to encourage growth and expansion of willows and other woody shrubs.

Late summer and fall grazing has less impact on productivity of riparian areas composed entirely of grasses, sedges, rushes and herbaceous species. However, livestock are more likely to browse woody species, which can limit recruitment and vigor. In general, riparian plant communities are capable of maintaining vigor and productivity if level of grazing is prescribed that is appropriate for resource objectives, tailored to site-specific conditions, and monitored for effect (BLM Technical Report 1737-20, 2006, summarized from Chapter III).

No Action

Utilization objectives for upland and riparian vegetation within O'Keefe Seeding Pasture are managed together under the current grazing plan. Livestock grazing in both seasons with currently authorized livestock numbers would be likely to maintain the FAR, static trend in productivity and continue to limit recruitment of desirable riparian plant species. Sedges and rushes would continue to expand

slowly, requiring a longer period (10-20 years) to express a clear upward trend to support and maintain PFC. Since late summer and fall season livestock grazing with current numbers has apparently inhibited recruitment of willows from the seed source in the system, willows would probably take decades to expand, reach escapement height (from browsing by wild and domestic herbivores), and provide additional bank stability and shade so PFC could be achieved.

Proposed Action

The Proposed Action would physically separate Pass Creek riparian area from the majority of uplands in O'Keefe Seeding Pasture and reduce effects of grazing from approximately 950 AUMs in alternate spring and late summer/fall seasons to maximum spring use of 125 AUMs and maximum late summer/fall use of 50 AUMs. This would facilitate management for riparian function objectives in the riparian area and allow for better utilization of uplands. No late summer/fall livestock grazing would occur for three, full growing seasons, (until 2010, after the fire recovery period plus one spring-use only year); the IDT expects enhanced recovery of riparian vegetation would occur.

Based on experience with changes in grazing management elsewhere in Andrews Resource Area, after spring grazing is resumed with reduced livestock numbers, residual stubble height of key riparian sedges and rushes at close of the grazing season would be greater than under previous stocking levels. Since additional resources would be available for the next season's growth, these key species would likely expand and increase in vigor more rapidly than before. This would improve bank stabilization and overall physical integrity of the riparian area, especially where willows expand and become established in entrenched reaches of the stream. Monitoring at the mid-point of the later grazing season and removal of livestock as necessary are expected to reduce or eliminate potential suppression of recruitment and vigor of woody species resulting from late summer/fall grazing.

Although pace of recruitment of willows or other woody vegetation and increase in vigor of sedges and rushes is not predictable, the IDT expects a clear qualitative upward trend in riparian functioning condition would be recognized by monitoring efforts after six growing seasons. The Proposed Action would not contribute to cumulative effects to the PFC of riparian habitats within the Alvord Basin because these effects would be local in scope by nature, and limited to Pass Creek within the new riparian pasture.

Alternative 1 (Herding)

Since number and kind of livestock, seasons of use, and utilization objectives would be the same, effects resulting from the Herding Alternative would be essentially the same as the Proposed Action. Recruitment and vigor of riparian vegetation would be expected to respond to effects of reduced grazing in the

riparian area at a pace approximately the same as the Proposed Action. The amount of time livestock would actually be permitted to graze during alternate late summer/fall grazing seasons would depend upon: 1) degree to which riders can successfully limit the amount of time animals spend in the riparian area stream during the late summer/fall season, and 2) the degree to which riders can keep livestock from repeatedly concentrating on specific portions of the riparian area. Failure to achieve any of these day-to-day objectives may reduce the number of days livestock graze in Pass Creek Riparian Pasture during that season. Since livestock would be removed when change-of-preference has been observed, the likelihood of success in achieving PFC within six years should be substantially the same as with the Proposed Action.

Alternative 2 (Complete Livestock Removal)

Since livestock grazing would need to be phased-out in O'Keefe Seeding Pasture over five years (refer to Chapter 2), effects to riparian vegetation would be substantially the same as the No Action Alternative until 2013, the first year in which livestock would no longer have any influence on annual recruitment or vigor of riparian plants. Willows may not expand much or become established in entrenched reaches of the stream until after all livestock grazing has ended. Once all livestock grazing has ended recruitment of willows or other woody vegetation recruitment and canopy development would continue without the influence of any annual browse from livestock. Since stocking levels would not be reduced as quickly as under the Proposed Action, willows would probably reach escapement height (from browsing by wild herbivores) at approximately the same time as under limited livestock grazing/browsing, or slightly later.

In the long term (after 2013), development of riparian vegetation would be more rapid than with reduced grazing in alternate seasons. However, based on comparisons of grazing systems in BLM Tech Ref. 1737-20 (p. 36-62), the difference may not be dramatic. Effects of reduced stocking levels in spring, when livestock are more likely to graze succulent vegetation in uplands, is likely to leave sedges and rushes along Pass Creek lightly used (and willows unbrowsed), and regrowth would be uninterrupted for a full growing season through the following year. Since cattle would be removed when change of preference to willows is observed, effects from alternate-year late summer/fall grazing may have barely measurable effects on willows, especially those that have reached escapement height (from browsing). Therefore, riparian PFC is likely to be in a substantially similar trend without livestock grazing as with reduced livestock grazing with essentially the same community composition.

Development of bank stability and overall physical integrity of the riparian area would accelerate after the last season of livestock use. After this time, the rested area may attract more wildlife, and resulting utilization of riparian vegetation has the potential to offset some short-term gains obtained by removing livestock.

2. Noxious Weeds

No Action

After the fire recovery period, livestock grazing at current numbers and seasons would resume. This would very likely maintain the stagnant growth and development of the riparian plant community, which would continue to provide opportunities (by lack of competition) for thistle growth and/or expansion within the riparian area from the identified seed source on private land. There would be no additional change in the likelihood of noxious weed introduction or spread due to selection of the No Action Alternative.

Proposed Action

Enhancement and accelerated growth of riparian vegetation would increase competition for plant resources, and is likely to reduce the extent and vigor of the thistle infestation within the riparian area. This may reduce the need for herbicide treatments as the vigor and extent of the riparian plant community increases.

The Proposed Action would likely not contribute to the cumulative expansion of invasive non-native plants within Fields Basin Allotment or Pueblo Mountains because acceleration of growth and expansion of riparian vegetation within Pass Creek Riparian Pasture are expected to result in the reduction of the weed population already present. When this effect is considered in combination with post-fire rehabilitation seeding and programmatic weed control efforts occurring within the allotment and elsewhere in Pueblo Mountains, cumulative effect is expected to be a reduction in weed populations (especially thistles) within the allotment.

Alternative 1 (Herding)

Since effects to riparian vegetation resulting from the Herding Alternative would be substantially the same as the Proposed Action, effects to weeds (resulting from competition from vigorous riparian vegetation) would be the same as the Proposed Action, as would assessment of the potential for cumulative effects.

Alternative 2 (Complete Livestock Removal)

Effects would be substantially the same as the No Action Alternative until livestock are completely removed in 2013. Native plant competition with thistles would progress rapidly after this point in time. This may reduce the need for herbicide treatments as the vigor and extent of the riparian plant community expands with the same cumulative effects.

3. Migratory Birds

No Action

There would be no immediate disturbance to migratory birds since the fence would not be constructed. No new singing or territorial display perches (fence wire and fence posts) would be available. Since livestock grazing would continue during the currently authorized seasons and in the same numbers, the riparian area along Pass Creek would develop a woody component (primarily willows) slowly over a decade or several decades. The landbird species composition of the riparian area would respond at a similar pace.

Common to all Action Alternatives

Effects to riparian shrub-nesting, riparian-associated bird communities would reflect the development of willow communities (See Wetlands and Riparian Zones discussion) As vertical structure (e.g. trees, shrubs) becomes available to provide nesting habitat, riparian species would become established in the project area, including (but not limited to) yellow warbler, warbling vireo, lazuli bunting, spotted towhee and willow flycatcher. The species composition that would use the enhanced riparian habitat would be the same under all action alternatives. The potential number of nesting pairs (or number of migrants that may stop-over) would be determined by amount of shrub cover at any point in time. Therefore, the difference in effects between action alternatives is a reflection of amount of riparian shrub habitat available for birds.

Proposed Action

Some disturbance (interruption of feeding and nesting behavior) to ground-nesting and shrub-nesting birds could occur in the immediate vicinity of fence-building operations in the two-month time period during which construction would be authorized. Generally, two miles of fence can be constructed in one to two weeks, effectively limiting the actual duration of disturbance. After initial disturbance of fence-building, the fence would provide additional singing and resting perches for migratory songbirds, but may also provide additional vantage points for nest predators and nest parasites such as brown-headed cowbirds.

Accelerated growth of riparian vegetation would result from reduced livestock numbers in the riparian area, and would provide additional habitat sooner for riparian, shrub-nesting species such as yellow warbler, warbling vireo, lazuli bunting, and willow flycatcher effectively expanding bird species diversity within the riparian pasture. Some suitable shrub habitat could be available as soon as six years, but a decade or more may be required to establish the potential riparian landbird community (See effects common to all action alternatives).

The Proposed Action would contribute to slight but measurable cumulative effects to migratory and resident bird habitat within Fields Basin Allotment and Pueblo Mountains because: 1) the change in number of livestock during the

authorized season of use in Pass Creek Riparian Pasture would be expected to enhance landbird species diversity over years to decades (pace of development of riparian shrub vegetation), and 2) when effects of this project are evaluated together with future riparian enhancement projects within Fields Basin Allotment or Pueblo Mountains, the cumulative effect would be to expand and enhance distribution of (especially shrub-dependent) riparian landbird species and improve connectivity between habitat patches.

Alternative 1 (Herding)

Since effects to riparian vegetation resulting from the Herding Alternative would be substantially the same as the Proposed Action, effects to landbird species composition (including cumulative effects) would be expected to develop at approximately the same pace. No temporary disturbance to ground-nesting and shrub-nesting birds could occur as a result of fence-building operations. However, no additional singing and resting perches and no additional vantage points for nest predators and nest parasites would be available. Riders and dogs would be present after the nesting season has concluded for ground and shrub-nesting species, so no effects to nest success would likely occur from additional human presence.

Alternative 2 (Complete Livestock Removal)

Vigorous riparian vegetation may not expand and develop as much during the first five years (2007-2012) than under the Proposed Action, but would develop quickly without the influence of annual livestock grazing after 2013. Some suitable shrub habitat could be available within five years, but eight to ten years may be required to establish annual nesting by riparian, shrub-associated species. Cumulative effects would be the same as the Proposed Action.

4. Water Quality

No Action

Livestock grazing in the fall with currently authorized livestock numbers would continue. Elements of water quality associated with increased shade and bank stability would be expected to improve slowly (over decades), if at all.

Common to all Action Alternatives

Since shade from shrubs and cover of riparian plant species provides a major contribution to moderating stream temperature, and bank stability is an important influence on stream sediment balance, effects to water quality from increased shade and improved bank stability would reflect development of riparian plant communities (See Wetlands and Riparian Zones discussion). Accelerated recruitment and growth of riparian plants are expected to occur during the two-

year fire recovery period. Since Pass Creek is intermittent below the project area and does not contribute flows to any fish-bearing stream or drinking water source, effects to water quality, positive or negative, are contained within Pass Creek, and therefore do not contribute to cumulative effects to water quality within Alvord Basin.

Proposed Action

Close monitoring of preference change to willows in the late summer/fall grazing period and subsequent livestock removal are expected to maintain accelerated recruitment and growth of riparian vegetation and provide additional shade (which would reduce stream temperatures) and bank stability (which would decrease the potential for excessive erosion and sediment input) to the stream within six to ten growing seasons. The pace of water quality improvements can only be based on speculation, but could approach site potential within a decade, or slightly longer as riparian vegetation develops.

Alternative 1 (Herding)

Since effects to riparian vegetation resulting from the Herding Alternative would be substantially the same as the Proposed Action, effects to water temperature and bank stability (including cumulative effects) would be expected to develop at approximately the same pace.

Alternative 2 (Complete Livestock Removal)

Vigorous riparian vegetation may not expand and develop as much as with the Proposed Action during the three years following fire recovery, but would develop quickly without the annual influence of livestock after 2013. Since woody shrubs would reach stature that would shade the stream channel at approximately the same time or slightly later, water temperature would decrease and approach site potential in approximately the same number of growing seasons as under the Proposed Action.

5. Special Status Species – Fauna (Greater Sage-Grouse)

No Action

Although no sage-grouse are known to use the project area now, the development of vigorous low riparian vegetation around seeps, springs and riparian meadows is beneficial to greater sage-grouse. As upland vegetation becomes desiccated in summer and fall, and especially in dry years, sage-grouse move to these areas in search of more palatable vegetation (BLM National Sage-Grouse Habitat Conservation Strategy, 2004, p. 10). Upper reaches of Pass Creek include small habitat patches that could be used by sage-grouse during this time. Since the No Action alternative would continue the slight upward or static trend in

development of riparian vegetation, quality and quantity of summer and fall forage habitat for sage-grouse would develop slowly over decades, if at all.

Common to all Action Alternatives

Although there is no evidence of sage-grouse use now, accelerated development of riparian vegetation would provide enhanced forage opportunities for sage-grouse, especially in summer and fall, and especially in dry years. The action alternatives would not contribute to cumulative effects to greater sage-grouse habitat because fires in 1999 and 2006 provided major influences in the pattern and distribution of sage-grouse habitat within the allotment and in the northern Pueblo Mountains. All Action Alternatives would result only in local habitat changes, and would not alter the pattern and distribution of sage-grouse habitat beyond the project area.

Proposed Action

Since there are no leks within near the proposed fence line, no increased collision hazards to flying birds or predation from raptors is likely to occur (BLM National Sage-Grouse Habitat Conservation Strategy, 2004, p. 20)

Alternative 1 (Herding)

Since effects to riparian vegetation resulting from the Herding Alternative would be substantially the same as the Proposed Action, effects to greater sage-grouse habitat would be the same as the Proposed Action. However, presence of riders and dogs while late summer and fall grazing occurs would discourage sage-grouse use of the riparian area when riders are present, and use of upland areas later in the day.

Alternative 2 (Complete Livestock Removal)

Development of enhanced forage opportunities for sage-grouse would be substantially the same as the No Action alternative at the end of five growing seasons, but would likely develop more rapidly after livestock have been removed from the pasture.

6. Special Status Species – Flora (Raven's lomatium)

No Action Alternative

Raven's lomatium (and the similar Nevada lomatium) flowers early in the spring and is not affected by grazing under the currently authorized grazing system or natural fire events. The No Action Alternative would have no effect to the species.

Proposed Action

Neither species of lomatium would be affected during the construction process because construction would be done after plants are dormant. Some plants along the fence line could be affected by livestock trailing after construction; however, this would be difficult to predict until actual animal movement patterns are observed.

Alternative 1 (Herding)

Since neither lomatium species would be affected by grazing, effects would be the same as the No Action Alternative. No other effects would occur, since the fence would not be built, and the possibility of trailing would be eliminated.

Alternative 2 (Complete Livestock Removal)

Since neither lomatium species would be affected by grazing, effects would be the same as Alternative 1.

B. Effects to Noncritical Elements

1. Grazing Management

No Action

There would be no change to the number of animals and seasons of use as authorized under the current term grazing permit. Following rest from the 2006 fire, authorized livestock grazing would continue in O'Keefe Seeding Pasture and in Pass Creek riparian area.

Proposed Action

There would be no change to the number of animals and season of use as authorized for the Fields Basin allotment under the current term grazing permit. Creation of Pass Creek Riparian Pasture would have an associated and more limited number of animals and season of use than for the remaining portion of O'Keefe Pasture. With a fence in place, permittees would be able to manage late summer and fall livestock in O'Keefe Seeding and Pass Creek Pastures without the need for riders and dogs to move cattle out of the riparian area on a daily basis. If or when utilization targets have been achieved in the late summer and fall grazing season in Pass Creek Pasture, cattle removed from Pass Creek Pasture would remain in O'Keefe Seeding for the balance of the authorized season.

There would be no effect to authorized use within the allotment, since forage in the remainder of O'Keefe Seeding Pasture is adequate to absorb the AUMs that

would be removed from Pass Creek Pasture under the Proposed Action. Since livestock would no longer be able to congregate along Pass Creek, utilization of uplands in the reconfigured O'Keefe Seeding Pasture would increase from slight to light to moderate. Since cattle would not be permitted to remain in the riparian area and consume vegetation there, utilization of upland (crested wheatgrass) forage west of Pass Creek would increase. Cattle would be unable to utilize upland vegetation east of Pass Creek for the balance of the authorized season, regardless of available upland forage.

The Proposed Action would not contribute to any cumulative effects to grazing management because no changes in the number or kind of livestock would occur within Fields Basin Allotment or is known or reasonably foreseeable to occur elsewhere in the AMU.

Alternative 1 (Herding)

There would be no change to the number of animals and season of use as authorized under the current term grazing permit. Permittees would be required to move livestock out of O'Keefe Seeding Pasture early if riparian utilization targets have been reached before the one-month late summer/fall grazing period has ended. This would result in additional costs to the permittee to replace unused forage left in the upland portion of the pasture.

Alternative 2 (Complete Livestock Removal)

The authorized number of AUMs for Fields Basin Allotment would be reduced by approximately 950, based on average actual use of O'Keefe Seeding Pasture from 2004-2006. Since the changes would not have to be made before five years (other alternatives could result in significant progress toward achieving the rangeland health standard for riparian function) and the change in active use would be greater than ten percent (a reduction of at least 950 AUMs out of a permit total of 3,325), reduction in livestock use would have to be phased over five years without agreement of the permittees (Refer to Chapter 2). Crested wheatgrass seeded in the uplands would not be utilized at all. The permittees would have to replace these AUMS outside of Fields Basin Allotment if current stocking levels are to be maintained.

2. Soils

General Discussion

Soil and biological soil crust resources are dependent on condition of other resources, primarily upland and riparian vegetation. Management actions that affect condition of these resources would also affect soils and biological soil crusts. Any activities that disturb soils where biological soil crust communities have developed, could deplete soil productivity and increase potential for noxious

weeds and other invasive species to degrade the site. Grazing management practices, including proper stocking rates for livestock, rotation of grazing, and periodic rest from grazing, should limit adverse effects to soils and biological soil crust (Evans and Johanson 1999, p. 67).

In order for any changes to soil resources and biological crusts resulting from the action alternatives to contribute to cumulative effects, these effects would need to be measurable, and act in concert with effects from other projects or activities to affect another resource (such as changes to wildlife species distribution when vegetative communities are altered). Visible soil movement (from erosion) is occurring in Fields Basin Allotment as a result of 2006 wildfire and to a lesser extent from rehabilitation activities. Since any effects resulting from implementation of the action alternatives are unlikely to be measurable, action alternatives are unlikely to contribute to adverse cumulative effects to soil resources and biological crusts.

No Action

After the fire recovery period, soil compaction and bank trampling in riparian areas resulting from annual livestock grazing would return to pre-fire levels under the currently authorized grazing plan. This would likely maintain the static trend for riparian vegetation and consequently for soils and biological crusts. Since soils in the proposed pasture are clays and silt-clays, impacts to any crusts present would generally be greater during the spring-use period when soils are wetter and decline as soils surface dries (BLM Tech. Ref. 1737-20). Since cattle tend to spend less time around riparian areas during spring (when temperatures are cooler, and forage is more palatable in the uplands), this pattern of use would lessen impacts to these particular soil types.

Proposed Action

Since livestock numbers and duration of use would be reduced in the riparian pasture (including adjacent uplands), effects to soil compaction and bank trampling in riparian areas from hoof impact would also be reduced. Soils could be compacted in localized areas from mechanized equipment used to carry fence material to the site. However, rubber-tired vehicles would ease amount of compaction disturbance, and this would not be expected to affect plant productivity or recruitment by the following one- to two-growing seasons. There is potential for livestock to create a trail along the fence after construction, which could lead to compaction and erosion in localized areas. Since the proposed fence line has little or no direct hydrologic connectivity (via rills or gullies) to Pass Creek, any erosion that occurs would not be expected to contribute to a failure to attain riparian rangeland health standards in Pass Creek Riparian Pasture.

Alternative 1 (Herding)

Livestock use of the riparian area would be limited as in the Proposed Action. Effects to riparian areas from hoof action would occur over the same time frame. Soils would not be compacted in localized areas from mechanized equipment used to carry fence material to the site. No new livestock trails along fence lines would be created.

Alternative 2 (Complete Livestock Removal)

Since livestock use of the riparian area would be eliminated after the five-year phase-out period and no riders would be present, all effects to soil compaction and soil crust communities from hoof action would be eliminated. The local effects to soil compaction from fence-building, fence maintenance, and livestock trailing would also be eliminated.

3. Upland Vegetation

No Action

Livestock grazing of upland vegetation within O'Keefe Seeding Pasture would resume after the fire-recovery period (2010). It is likely livestock would continue to graze the pasture in the late summer/fall period in a manner similar to the way it was grazed before the fire, heavier use closer to Pass Creek and around troughs, and lighter use (or non-utilization) further away from the stream and troughs. This is likely to result in relative reduced vigor and recruitment of upland species closer to water sources, especially near Pass Creek, and possible plant decadence further away from water sources as non-living stems are carried through winter becoming oxidized and suppressing growth during later seasons. Effects to plant vigor from uneven livestock distribution are likely to be most obvious in areas seeded to crested wheatgrass (on both sides of Pass Creek and western side of the pasture), and least obvious to the native plant community at the (unburned) eastern edge of the pasture. Basic plant communities and plant community seral stages are unlikely to change.

Proposed Action

Livestock grazing of upland vegetation in Pass Creek Riparian Pasture and O'Keefe Seeding Pasture would resume (in 2010) after the fire-recovery period. Although livestock may continue to graze in Pass Creek Riparian Pasture in the late summer/fall period in a pattern similar to the way it was grazed before the fire, lighter stocking and less time in the area would reduce amount of material removed after seed-set. Basic plant communities and plant community seral stages are unlikely to change.

Some vegetation would be crushed in an area no more than 15 feet wide along the entire length of the fence as a result of vehicle traffic during survey and construction of the project. Because blading of the fence line would not be

allowed, the disturbed area would naturally revegetate in two or three growing seasons. Occasional (usually once per year) use of the two-track trail for fence maintenance would leave evidence of passage, but would not eliminate vegetation from the trail.

The Proposed Action would not contribute to cumulative effects to vegetation as a resource because effects would be limited to the project area, and would not result in any measurable change in arrangement or distribution of vegetation communities within the allotment or Alvord Basin.

Alternative 1 (Herding)

Effects to upland vegetation resulting from fence-building and fence-maintenance would not occur. Otherwise, effects would be substantially the same as the Proposed Action, since utilization of uplands west of Pass Creek in Pass Creek Riparian Pasture would be approximately the same, and utilization in O'Keefe Seeding would be more consistent.

Alternative 2 (Complete Livestock Removal)

Without livestock grazing to remove previous year's growth, bunchgrasses (native and seeded) would have the potential to become "wooly" (previous years' growth deteriorates on the crown, suppressing new growth), and recruitment and vigor could decline. This could result in replacement of perennial grasses with sagebrush or other shrub species if no other disturbance occurs to remove decadent or oxidized residual vegetation. This is a natural feature of plant succession in areas with little disturbance. In this area, most natural disturbance to upland vegetation, other than limited grazing by wildlife, occurs by wildfire.

4. Visual Resources

No Action

Class III VRM objectives would continue to be achieved. No additional impacts to visual resources would be expected.

Proposed Action

The proposed fence would introduce a human-made linear feature into the landscape. Though some fence would be visible from Harney County Road 202, it would not dominate the view as seen from the road by the casual observer; therefore, Class III VRM objectives would continue to be met.

Alternative 1 (Herding)

Since no new fence would be constructed, effects to visual resources would be the

same as the No Action Alternative.

Alternative 2 (Complete Livestock Removal)

Since no new fence would be constructed, effects to visual resources would be the same as the No Action Alternative.

5. Wildlife/Locally Important Species and Habitat

No Action

No additional fence would be constructed within the project area; therefore, no new potential barriers to mule deer and pronghorn movement would be present. Under the currently authorized grazing plan, forage and cover opportunities within the riparian area for deer and pronghorn would improve slowly, if at all.

Proposed Action

Constructing new fence within the project area could affect movement of deer and pronghorn. However, all fence construction would comply with the BLM's Project Design Features, which are intended to accommodate passage of animals. Deep snow that would impede passage of pronghorn under the lowest wire (Montana BLM Riparian Technical Bulletin #4, 1998) is rare at this elevation in Alvord Basin. Therefore, no measurable impacts to wildlife movements would be expected. Forage and cover opportunities within the riparian area for deer and pronghorn would increase in a shorter period of time as development of riparian vegetation is accelerated.

Fires have shaped vegetative communities within the project area, and wildlife species have and will continue to respond to these changes. Any individual effects resulting from the new fence and establishment of the new riparian pasture to distribution, movement, migration of terrestrial wildlife species would not be distinguishable from effects of recent wildfire, or rehabilitation efforts that are under way within the burned area. Therefore, no cumulative effects to wildlife from the new fence are expected.

Alternative 1 (Herding)

Animal movement through Pass Creek riparian area would not be affected by a fence. However, presence of riders and dogs would likely discourage wildlife presence near Pass Creek during rider presence. Since response of riparian vegetation would be essentially the same as the Proposed Actions, effects to availability and condition of forage and cover opportunities for mule deer and pronghorn would be approximately the same as well.

Alternative 2 (Complete Livestock Removal)

Effects would be substantially the same as the No Action alternative until livestock have been removed after which forage and cover opportunities for mule deer and pronghorn would develop quickly (within three growing seasons).

6. Social and Economic Values

No Action

No investment of public funds to build the fence would occur. The Federal government would continue to collect grazing permit fees from the two permittees at approximately the current annual rate. This commodity use on public lands would continue to generate revenues for the Federal government and private economy activity in the local, regional, national, and in some cases international economies.

At the same time, public lands in and around the project area would also continue to contribute environmental amenities such as open space, scenic quality and recreational opportunities (including hunting, birdwatching, sightseeing, hiking, and off-highway vehicle use) as part of the larger Alvord Basin. These amenities enhance local communities and tourism, though specific contribution of the project area is not known.

Proposed Action

A one time investment of public funds of approximately \$10,000 would be required to build the fence, providing economic opportunities for local fence contractors and suppliers. The permittees may incur some small costs for annual fence maintenance. Collection of grazing permit fees would not differ from the No Action alternative. The area's intrinsic value as part of a larger recreational use area would be maintained.

Alternative 1 (Herding)

No economic opportunities for fence-building contractors would be realized. Herding would require daily presence by permittees to manage livestock use in the riparian area, and this would result in additional costs to permittees during years when late summer/fall use occurs. The cost for one rider for each day of the late summer/fall grazing period would be approximately \$100. Number of riders required to ensure progress was made toward attaining project objectives on Pass Creek is unknown. If the number of riders was one and seasons were 75 days each (August 15 to October 30), it would cost the livestock operator \$7,500 per season of use. If the riders required become more than one, the cost would go up proportional to the number of days a second rider was required. Collection of grazing permit fees would not differ from the No Action Alternative. The area's intrinsic value as part of a larger recreational use area would be maintained.

Alternative 2 (Complete Livestock Removal)

No economic opportunities for fence-building contractors would be realized. Collection of grazing fees would be reduced by at least \$1,283.00 annually (based on the legal minimum cost per AUM) as a result of a reduction of approximately 950 AUMs for Fields Basin Allotment. Based on current rates reported by permittees, cost to livestock operators to find alternate forage is estimated at \$12-\$16 per AUM to place livestock on private pasture, which does not include labor/fuel/equipment for hauling livestock if only distant pasture is available. Cost of providing hay is variable, based upon annual supply and demand, but is likely to be much higher than pasture. Based on average stocking levels for the period, replacement forage for the entire one-month late summer/fall grazing season in O'Keefe Seeding Pasture is estimated to range from \$11,400 to 15,200, or \$380 to \$507 per day. The area's intrinsic value as part of a larger recreational use area would be maintained.

C. Cumulative Effects Analysis

As the Council on Environmental Quality (CEQ), in guidance issued on June 24, 2005, points out, the "environmental analysis required under NEPA is forward-looking," and review of past actions is required only "to the extent that this review informs agency decision-making regarding the proposed action." Use of information on the effects on past action may be useful in two ways according to the CEQ guidance. One is for consideration of the proposed action's cumulative effects, and secondly as a basis for identifying the proposed action's effects.

The CEQ stated in this guidance that "[g]enerally, agencies can conduct an adequate cumulative effects analysis by focusing on the current aggregate effects of past actions without delving into the historical details of individual past actions." This is because a description of the current state of the environment inherently includes the effects of past actions. The CEQ guidance specifies that the "CEQ regulations do not require the consideration of the individual effects of all past actions to determine the present effects of past actions." Our information on the current environmental condition is more comprehensive and more accurate for establishing a useful starting point for a cumulative effects analysis, than attempting to establish such a starting point by adding up the described effects of individual past actions to some environmental baseline condition in the past that, unlike current conditions, can no longer be verified by direct examination.

The second area in which the CEQ guidance states that information on past actions may be useful is in "illuminating or predicting the direct and indirect effects of a proposed action." The usefulness of such information is limited by the fact that it is anecdotal only, and extrapolation of data from such singular experiences is not generally accepted as a reliable predictor of effects.

In this analysis, cumulative effects are incorporated into the effects analysis for each

relevant resource.

CHAPTER V: CONSULTATION AND COORDINATION

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B. Persons, Groups, or Agencies Consulted

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C. References Cited

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