STONEHOUSE ALLOTMENT MANAGEMENT PLAN

AND

ENVIRONMENTAL ASSESSMENT

(OR-026-99-47)

USDI, Bureau of Land Management
Burns District
Hines, Oregon 97738

Finding of No Significant Impact
for
Stonehouse Allotment Management Plan

EA-026-99-47

This proposal is in conformance with objectives and land use plan allocations in the 1982 Andrews Management Framework Plan (MFP) and the 1983 Andrews Grazing Management Final Environmental Impact Statement (EIS). The proposed action is in conformance with objectives of, and would help achieve standards for, rangeland health identified August 12, 1997, in Standards for Rangeland Health and Guidelines for Livestock Management for Public Land Administered by the Bureau of Land Management (BLM) in the States of Oregon and Washington. It is also consistent with the objectives for all alternatives of the "draft" Southeastern Oregon Resource Management Plan (SEORMP)/EIS and is in conformance with the 1989 Final Oregon Wilderness EIS.

Based on the analysis of potential environmental impacts contained in the attached Environmental Assessment (EA) and all other available information, I have determined that the proposal and alternatives analyzed do not constitute a major Federal action that would adversely impact the quality of the human environment. Therefore, an EIS is unnecessary and will not be prepared. This determination is based on the following factors:

1. Beneficial, adverse, direct, indirect, and cumulative environmental impacts discussed in the EA have been disclosed. Analysis indicated no significant impacts on society as a whole, the affected region, the affected interests, or the locality. The physical and biological effects are limited to the Burns District, Andrews Resource Area and adjacent land.

2. Public health and safety would not be adversely impacted. There are no known or anticipated concerns with project waste or hazardous materials.

3. There would be no adverse impacts to prime or unique farmlands, known paleontological resources on public land within the area, wetlands, floodplains, areas with unique characteristics, ecologically critical areas or designated Areas of Critical Environmental Concern. Floodplains, wetlands, riparian habitat, and water quality would be protected and enhanced.

   As described in the attached EA, air quality would be affected during actual burning; however, Parts Per Million (PPM) of particulate matter would be under acceptable levels. This, added to prevailing wind patterns away from population centers, would have little to no detrimental impacts.

4. There are no highly controversial effects on the environment.

5. There are no effects that are highly uncertain or involve unique or unknown risk. Sufficient information on risk is available based on information in the EA and other past actions of a similar nature.

6. This alternative does not set a precedent for other projects that may be implemented in the future to meet the goals and objectives of adopted Federal, State, or local natural resource-related plans, policies, or programs. It does not preclude consideration or adoption of various alternatives in the ongoing SEORMP, which will supersede the Andrews MFP.

7. No cumulative impacts related to other actions that would have a significant adverse impact were identified or are anticipated.

8. Based on previous and ongoing cultural resource surveys, and through mitigation by avoidance or other means, no adverse impacts to significant cultural resources were identified or anticipated. There are no known American Indian religious concerns or use areas or persons or groups who might be disproportionately and adversely affected as anticipated by the Environmental Justice policy.

9. No adverse impacts were identified to any threatened or endangered species or their habitat that was determined to be critical under the Endangered Species Act.

10. Wildlife habitat would improve.

11. The natural function of fire would be reintroduced to create a mosaic of plant communities and seral stages resulting in a more diverse landscape, increasing structural, biological, and habitat diversity.

12. The proposed action would enhance and protect the integrity of watershed function, improve watershed stability, and decrease accelerating erosion by reestablishing diverse plant communities. It would also increase vegetation cover and litter, and reduce the amount of exposed soil.

13. Riparian condition would be improved. Stream functionality would be improved by increasing hydric herbaceous and deciduous riparian woody species vegetation cover and improving bank stability. Wetland meadows would be improved by increasing hydric species vegetation cover and improving the functionality of these headwater meadows.

14. The scenic quality of the Stonehouse area would be enhanced by the diverse landscape resulting from fire reintroduction. Improved grazing management opportunities would have a significant beneficial effect on overall visual quality as

management actions improve vegetation communities.

15. Recreation opportunities would be enhanced as the overall health of the land improves.

16. This proposed action is in compliance with relevant Federal, State, and local laws, regulations, and requirements for the protection of the environment.

17. All actions are in accordance with the Interim Management Policy for Wilderness Study Areas and would not have any negative impacts on potential wilderness values.

_____ _____

Miles R. Brown Date
Andrews Resource Area Field Manager

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STONEHOUSE ALLOTMENT MANAGEMENT PLAN
AND
ENVIRONMENTAL ASSESSMENT
(EA-OR-026-99-47)

I. INTRODUCTION

A. Purpose and Need

An evaluation of rangeland monitoring data for Stonehouse Allotment was completed by a Bureau of Land Management (BLM) Interdisciplinary (ID) Team in April 1999, and approved by the Andrews Resource Area Field Manager on April 29, 1999. This evaluation determined that the Standards for Rangeland Health and Guidelines for Livestock Grazing Management for Public Lands Administered by the BLM in Oregon and Washington (August 12, 1997) were not being met (see Appendix E). Specifically, the watershed function of riparian/wetlands was not achieved, standards for watershed function of uplands (5,408 acres) were determined to be at-risk, functioning of ecological processes was also determined to be at-risk, and the standard for water quality and locally important species (redband trout) were not achieved. Livestock were determined to be a causal factor for not achieving the standards for watershed function of riparian/wetlands, water quality and for locally important species. Additionally, current management is not in conformance with Guidelines 1 and 6 which are:

1. The season, timing, frequency, duration, and intensity of livestock grazing use should be based on physical and biological characteristics of the site and management unit.

6. Provide periodic rest from grazing for rangeland vegetation during critical growth periods to promote plant vigor, reproduction, and productivity.

This document will analyze alternatives for management identified by the BLM ID Team. These alternatives will be analyzed for conformance with Guidelines for Livestock Grazing Management, achievement of the Standards for Rangeland Health, and accomplishment of allotment-specific objectives.

B. Background

The Stonehouse Allotment is located 62.00 miles southeast of Burns, Oregon. The grazing permit is controlled by Tom Davis Livestock, Inc. (see location map Appendix A).

This allotment contains one pasture of 10,391 acres of public land managed by the BLM and 442 acres of private land. Currently, it is grazed by approximately 700 cow/calf pairs and bulls from June 16 to September 15; with 52 AUMs of exchange-of-use from private land within the allotment.

Stonehouse Allotment was a pasture in Alvord Allotment until 1995, at which time through agreement with the permittee, the Stonehouse Pasture was withdrawn from the Alvord Allotment and designated a separate allotment. The Alvord Allotment Management Plan (AMP) did not adequately address management of the Stonehouse Pasture. The Stonehouse Allotment, which is at 6,000 to 7,000-foot elevation on Steens Mountain, is physically separated from Alvord Allotment and has always been managed separately. The Stonehouse Allotment encompasses the headwaters of several streams including Stonehouse, Little Stonehouse, Deep, Coyote, and Riddle Creeks. Riddle Creek provides habitat for native redband trout, a BLM sensitive species.

The Stonehouse Allotment supports a diversity of wildlife including deer, elk, bighorn sheep, sage grouse, various songbirds, small mammals, amphibians, reptiles, and redband trout.

The allotment adjoins a wild horse Herd Management Area (HMA), but is outside its boundary. There are portions of two Wilderness Study Areas (WSAs) the Stonehouse WSA (2-23L) and Lower Stonehouse WSA (2-23M) within Stonehouse Allotment.

C. Conformance

This AMP/EA is in accordance with the 1982 Andrews Management Framework Plan (MFP), the 1983 Andrews Grazing Management Final Environmental Impact Statement (EIS), the 1989 Final Oregon Wilderness EIS, and the Draft Southeastern Oregon Resource Management Plan (SEORMP)/EIS, October 1998. This document analyzes management alternatives for conformance with Standards for Rangeland Health and Guidelines for Livestock Grazing Management for Public Lands Administered by the BLM in the States of Oregon and Washington.

D. Goals and Allotment Objectives

The following goals and objectives were developed by the BLM ID Team as part of the 1999 evaluation and analysis of Stonehouse Allotment. The monitoring outlined in this document is also designed by the BLM ID Team to measure the achievement of allotment objectives and is included in all alternatives analyzed in this assessment.

1. Water Resources and Riparian Wetlands

Goal:

Ensure that surface waters influenced by BLM activities comply with or are making progress toward achieving State of Oregon water quality standards for beneficial uses as established per stream by the Oregon Department of Environmental Quality (DEQ).

Restore, maintain, or improve riparian vegetation, habitat diversity, and associated watershed function to achieve healthy and productive riparian areas and wetlands.

Allotment Objective:

Within 5 years achieve a minimum 10 percent increase (from baseline greenline transects 1999-2000) in the herbaceous hydric (moisture loving) community cover types for Riddle Creek and Paddle Meadows. Effectiveness of the grazing strategies to achieve this objective will be measured by greenline studies conducted every 3 to 5 years and Proper Functioning Condition (PFC) assessments conducted every 3 to 5 years. Implementation of the grazing strategies are expected to result in an increase in residual cover which will be monitored by annual end of growing season stubble height measurements in riparian communities.

On Riddle Creek the objective is within 5 years to achieve a minimum 10+ percent increase in the herbaceous hydric community cover types, adequate willow recruitment to replace existing willows, establishment of willows on one-half the point bars on the lower 1.50 miles of Riddle Creek within the allotment, and a minimum 10 percent increase in bank stability. Effectiveness of the grazing strategies will be measured by greenline studies conducted every 3 to 5 years. Implementation of the grazing strategies are expected to result in an increase in residual vegetation cover which will be monitored by annual end of the growing season stubble height measurements in the riparian communities.

On Stonehouse Creek, the objective is to maintain PFC and within 5 years reduce unstable banks to less than 20 percent and increase the herbaceous hydric community type by a minimum of 5 percent. Effectiveness of management will be measured by greenline studies and PFC assessment conducted every 3 to 5 years with baseline studies in 1999 and 2000.

a. This allotment objective addresses the following resource concerns:

Riddle Creek is functioning at-risk with a plant composition and vegetative cover which should have a higher percent of hydric species and deciduous woody species cover. Bank instability and width:depth ratio exceed what would be expected in PFC for the stream, as measured by baseline PFC and greenline studies. In the lower reach of Stonehouse Creek as determined by baseline PFC assessment, there is some bank instability and there should be a higher percentage of hydric vegetation cover. Paddle Meadows and Riddle Creek Meadows are lacking in hydric species in the composition. These meadows are also lacking hydric vegetation cover, i.e., sedges, rushes as determined by baseline PFC assessment, rangeland trend studies, and greenline studies.

b. This objective promotes the achievement of the following Oregon/Washington (OR/WA) Rangeland Standards:

2) Watershed Function - Riparian/Wetland Areas

3) Ecological Processes

4) Water Quality

5) Native, T&E, Special Status, and Locally Important Species

c. Monitoring needs and schedule:

There are two greenline transects on Riddle Creek. One on the meadow reach and the other below the meadows. The baseline data was collected in 1999. It will be repeated in 2004. The 3x3 photo point trend on Riddle Creek Meadows will be continued with step point transect. This study was read in 1999 and will be repeated in 2004. All riparian photo points will be photographed annually.

On the lower reach of Stonehouse Creek, the greenline transect baseline will be established in 2000 and reread in 2004. The ID Team will repeat a functionality assessment of Riddle Creek and Stonehouse Creek after 5 years of implementation (before formal evaluation). The ID Team will also complete a functionality assessment on Paddle Meadows (baseline 2000) and repeat this assessment after 5 years of implementation (before formal evaluation).

The 3x3 photo trend on meadows will be continued with a step point transect to be done 2000 and 2004. The area will be managed to increase residual cover by implementation of recommended management alternatives. The existing utilization studies will be continued.

Measurement of median stubble height of key riparian herbaceous species will be recorded at each key area at the end of each growing season.

Soil compaction in the wetland meadows will be monitored, and compared to similar meadows on Steens Mountain which are determined by the ID Team to be functional. Appropriate soil descriptions and analysis will be completed to ensure comparable sites. Measurement is with a metered probe which measures relative density of the soil. This data will assist in making the determination that progress is being made toward the capture, storage, and safe release of water.

2. Upland Vegetation

Goal:

To maintain or improve the ecological status of the vegetation of the upland watershed.

Allotment Objective:

To improve plant species diversity and community structure on deep loamy, subalpine slopes, stony loam, and swale ecological sites as measured by baseline monitoring. Also, to create a mosaic of seral stages on these sites, increasing the herbaceous component from 5 percent or less to 15 percent of composition (measured by frequency of occurrence), and

reducing the western juniper by 70 percent as measured by belt transects. This would be accomplished on 35 percent of the allotment within 3 years.

a. This allotment objective addresses the following resource concerns:

The loss of plant species diversity and diversity of community structure and the lack of habitat mosaic due to the dominance of western juniper and the decadent mountain sagebrush on these ecological sites.

b. This objective achieves the following OR/WA Rangeland Standards:

1) Watershed Function - Uplands

3) Ecological Processes

c. Monitoring needs and schedule:

The 3x3 photo point trend studies will be located on two of the deep soil, mountain sagebrush ecological sites in key areas with baseline data collected before the prescribed burn, and 2 and 5 years following burning. A step point transect will accompany this study at the same interval. A line intercept transect, with a shrub and tree belt transect, will be completed at the same intervals as the other trend studies (Burns District prescribed burn methodology 1996) to assess herbaceous, shrub, and tree cover, and shrub and tree density. Areas prescribed burned will be mapped with a Global Positioning System (GPS) to record size and location of the burn areas.

3. Wildlife and Wildlife Habitat

Goal:

Maintain, restore or enhance riparian areas and wetlands so they provide diverse and healthy habitat conditions for wildlife.

Manage upland habitats so that the forage, water, cover, structure, and security necessary for wildlife are available on public land. Habitat requirements for Special Status species such as bighorn sheep and sage grouse will be met.

Allotment Objective:

Increase the residual vegetation cover on Riddle Creek, Riddle Creek Meadows, and Paddle Meadows with the implementation of management. Increase by 10 percent the composition (by frequency of occurrence) of hydric species on meadows and Riddle Creek within 5 years and accomplish all allotment riparian objectives.

Within 5 years, improve community structure and increase hydric vegetation cover by 10 percent along Riddle Creek riparian zone. Create a mosaic of plant communities and diversity of habitats through the reintroduction of fire on the following ecological sites - stony loam, deep loamy, subalpine slopes, and swales.

a. This allotment objective addresses the following resource concerns:

The lack of residual cover on wetland meadows and within riparian zones. The composition and cover of hydric species and the community structure along Riddle Creek riparian zone and Riddle Creek and Paddle Meadows is below acceptable levels.

There is a lack of diversity in habitat and community structure on the upland ecological sites of stony loam, deep loamy, subalpine slopes and swales.

b. This objective achieves the following OR/WA Rangeland Standards:

1) Watershed Function - Uplands

2) Watershed Function - Riparian/Wetland Areas

3) Ecological Processes

4) Water Quality

5) Native, T&E, Special Status, and Locally Important Species

c. Monitoring needs and schedule:

The monitoring studies and schedule would be as described for Water Resources and Riparian Wetlands and Upland Vegetation.

4. Fish and Aquatic Resources

Goal:

To restore and improve habitat to provide for diverse and self-sustaining population of fishes and other aquatic organisms.

Allotment Objective:

Improve fish and aquatic habitat on Riddle Creek within 5 years. The indicator measured is water temperatures during the hot season. This should show a lowering trend in summer water temperatures moving toward Oregon State standards. Achieve a riparian vegetation community appropriate to stream reach and channel type, as described in the section for Water Resources and Riparian Wetlands. It is expected that the water quality will be reflective of these improvements through cooler summer water temperatures over time.

a. This allotment objective addresses the following resource concerns:

Fish and aquatic habitat is below potential based on PFC assessment, observations, and temperature data. Riddle Creek is water quality limited DEQ (303d) listed due to temperature.

b. This objective achieves the following OR/WA Rangeland Standards:

4) Water Quality

5) Native, T&E, Special Status, and Locally Important Species

c. Monitoring needs and schedule:

Same as D.1. Water Resources and Riparian Wetlands. In addition, water temperature monitoring will be reestablished for Riddle Creek and water temperature will be taken at the Leppy Spring with a thermometer by both the permittee and BLM when the site is visited.

5. Rangeland/Grazing Use Management

Goal:

Provide for a sustained level of livestock grazing consistent with other resource objectives and public land use allocations.

Allotment Objective:

Implement adaptive management with current livestock AUM allocation while achieving previously identified resource objectives.

Increase percent composition by frequency by 10 percent and cover of hydric herbaceous species by 10 percent on Riddle Creek riparian and Riddle Creek and Paddle Meadows after 5 years of adaptive management. Increase mosaic of plant communities for swales, stony loam, deep loamy and subalpine slopes ecological sites through the reintroduction of fire. Maintain low sagebrush communities with composition by frequency as shown by current step point transects. Increase native herbaceous species (grasses and forbs) to 20 percent of composition (by frequency of occurrence) on approximately 3,500 acres within 3 years through the reintroduction of fire.

a. This allotment objective addresses the following resource concerns:

Providing adequate forage for permitted AUMs on Stonehouse Allotment.

Livestock management that will accomplish the resource objectives outlined for Stonehouse Allotment.

b. This objective achieves the following OR/WA Rangeland Standards:

All five standards as listed under D.3.b.

c. Monitoring needs and schedule:

All monitoring studies outlined in D.1 and D.2.

Continue existing utilization studies as described for the current monitoring period.

6. Watershed Stability

Goal:

To prevent accelerated erosion within the Stonehouse Allotment.

Allotment Objective:

Scattered throughout the meadow headwaters of Riddle Creek and Deep Creek (Paddle Meadows) are areas of soil and vegetation degradation. These areas are associated with springs, overland flow, saturated soils, and possibly with past salting areas. They are depicted by a) soil hummocks and/or b) denuded vertical cuts ranging from several inches to an excess of 2 feet in height and are several feet in length.

On the sites where soil hummocking is prevalent, the objective is to increase the hydric species by 10 percent of the composition (measured by frequency of occurrence) after 5 years of adaptive management. An increase in hydric species would indicate that overland flow between the hummocks is decreased and vertical displacement of the hummocks is becoming less distinguishable.

On the sites with denuded vertical cuts, the objective is to establish perennial native vegetation cover on 10 to 20 percent of each site during the 3 years of initial rest. As the vegetation cover increases, compaction should decrease and soil moisture should increase, promoting further plant recruitment. When grazing resumes, the objective is to retain the vegetation cover established during the initial rest period and to establish perennial native vegetation cover to total 30 to 50 percent of each site after 5 years of adaptive management. The long-term objective (10 to 15 years) on these sites is to have the vertical edges become inclined and to have all sites revegetated with a plant composition and density comparable to the functional portions of these ecological sites.

Reduce the amount of unstable or actively eroding banks on Riddle Creek (as identified by greenline transects) to 20 percent or less within 5 years.

Prescribed burns will be completed in a mosaic pattern of burned and unburned areas to ensure the minimum possibility for accelerated erosion.

a. This allotment objective addresses the following resource concerns:

Wetland meadow degradation on Riddle Creek Meadows and Paddle Meadows and bank stability along Riddle Creek. Ensure upland site stability.

b. This objective achieves the following OR/WA Rangeland Standards:

1) Watershed Function - Uplands

2) Watershed Function - Riparian/Wetland Areas

c. Monitoring needs and schedule:

Provide prescribed burn monitoring (Burns District methodology 1996), at each site (two sites monitored). Continue erosion studies on meadows and complete Riddle Creek functionality reassessment in 5 years. Continue greenline studies on Riddle Creek. Identify Soil Surface Factors (SSFs) for upland monitoring sites and monitor 2 years and 5 years following burning.

7. WSA and Recreation Management

Goal:

Manage WSAs under the Interim Management Policy Guidelines (IMP). Maintain naturalness, solitude, and primitive recreation opportunities within Stonehouse and Lower Stonehouse WSAs. Maintain recreational access up Stonehouse Canyon (access road which forms the boundary between two WSAs) to support a variety of recreation opportunities.

Allotment Objective:

Keep Stonehouse Road maintained and open to motorized vehicles. Manage for quality recreational opportunities. Establish an upward trend in condition on Paddle Meadows and increase lower Stonehouse Creek hydric vegetation cover by 10 percent within 5 years. Paddle Meadows and the lower reach of Stonehouse Creek will be assessed for PFC within 10 years.

Improve the diversity of habitats on the deep loamy, subalpine slopes, swales, and stony loam upland ecological sites moving toward a more natural landscape through the reintroduction of fire within this fire-dependent ecosystem.

a. This allotment objective addresses the following resource concerns:

Natural diversity within the ecosystem.

Opportunities for undeveloped recreation.

b. This objective achieves the following OR/WA Rangeland Standards:

3) Ecological processes

C. Monitoring needs and schedule:

Monitor recreational use. Continue WSA surveillance as outlined by current policy.

8. Visual Resource Management

Goal:

Maintain or improve the scenic quality of the area.

Allotment Objective:

Establish an upward trend in vegetative condition throughout the allotment.

Improve the diversity of habitat throughout the allotment by utilizing a variety of management tools.

a. This allotment objective addresses the following resource concerns:

The current status of riparian and upland plant communities in Stonehouse Allotment is unsatisfactory.

b. This objective achieves the following OR/WA Rangeland Standards:

All standards for rangeland health.

c. Monitoring needs and schedule:

Determinations of monitoring for water resources and riparian wetlands and the ecological status of upland vegetation will provide the basis for Visual Resource Management (VRM) monitoring.

9. Native, T&E, Special Status, and Locally Important Species

Goal:

Provide habitat to support healthy, productive, and diverse populations and communities of native plants and animals (including Special Status species and species of local importance) appropriate to soil, climate, and landform.

Allotment Objective:

Provide habitat to sustain viable populations of the following species known to exist on Stonehouse Allotment.

Steens Mountain paintbrush
Redband trout
Sage grouse
California bighorn sheep
Bald eagle
American peregrine falcon

a. This allotment objective addresses the following resource concerns:

Current BLM monitoring studies indicate habitat for redband trout is below potential. Observations and vegetation data indicate the habitat diversity for sage grouse and California bighorn sheep are also below potential.

b. This objective achieves the following OR/WA Rangeland Standards:

5) Native, T&E, Special Status, and Locally Important Species

c. Monitoring needs and schedule

The same monitoring studies and schedule would be used as outlined for Water Resources and Riparian Wetlands, Upland Vegetation, and Fish and Aquatic Resources.

II. EXISTING ENVIRONMENT

A. Vegetation

There are two dominant upland vegetation communities within the Stonehouse Allotment, the first of which is low sagebrush, Idaho fescue with associated forbs located on gravelly soils on the ridges. The second major upland plant community is mountain big sagebrush, Idaho fescue, and mountain brome with associated forbs. This community is located in swales, subalpine slopes, and bottoms with deep to moderately deep soils typically gravelly to stony. Many of these communities have been encroached by juniper and are in the early stage of woodland development.

Aspen communities exist in small pockets scattered on the north and east aspects. These communities developed on moderately deep to deep loamy soils in areas where snow accumulates. The understory species of this community is similar to the mountain big sagebrush communities but with a greater diversity of forbs. Many of the aspen stands are encroached by western juniper.

There are approximately 700 acres of wet meadows, mainly in the headwater meadows of Riddle Creek and Deep Creek. These meadows are dominated by mountain big sagebrush, silver sagebrush, bluegrasses, redtop, sedges, rushes, dandelions, clover, yarrow, and various other forbs. The major streams include Stonehouse and Little Stonehouse which support a deciduous woody overstory and a diverse herbaceous understory. Riddle Creek supports a mixed herbaceous community of bluegrasses, redtop, various forbs, sedges, and rushes with only a scattered mature, single-age class of willow.

B. Special Status Species

There is one Special Status plant species known to exist on the Stonehouse Allotment, *Castilleja pilosa var. steenensis*, commonly known as the Steens Mountain paintbrush. This species is associated with the low sagebrush-bunchgrass communities found on gravelly windswept ridges.

Redband trout are found in Riddle Creek, which is the only stream within the allotment that has a fishery. California bighorn sheep are found mostly on the east face along the steep slopes and along the east rim portion of the allotment. Occasionally, these animals are found west of the rim within the allotment. The allotment is late spring, summer, and fall habitat for sage grouse. Currently, there is no direct monitoring by BLM for these species. Oregon Department of Fish and Wildlife (ODFW) conducts annual bighorn sheep counts and sage grouse brood counts in and adjacent to the allotment.

C. Wildlife

The allotment is late spring, summer, and fall range for mule deer, elk, and antelope. Upland game birds include mourning doves in the spring and summer. Chukars are abundant in the lower slopes and within Stonehouse Canyon. Valley quail are also found in Stonehouse Canyon and lower elevations within the allotment. Common snipe inhabit areas around springs, wet meadows, and riparian areas.

Many raptors are found within the area such as bald eagles, peregrine falcons, golden eagles, prairie falcons, red-tailed hawks, kestrels, and great horned owls. The area also provides habitat for many other bird species and a myriad of small mammals as well as badgers, cougars, bobcats, and coyotes.

D. Riparian and Wetland Areas

The Stonehouse Allotment contains approximately 4.00 miles of perennial streams and 13.00 miles of ephemeral or intermittent channels. The perennial streams include Riddle, Stonehouse, and Little Stonehouse Creeks, as well as scattered tributaries flowing from springs. There are also approximately 700 acres of wet meadow areas in the upper reaches of both Riddle and Deep Creeks (Paddle Meadows).

The upper reach of Riddle Creek is a low gradient stream with an associated wet meadow. In 1998, this stream segment was rated by an ID Team as functioning at-risk with a stable trend. The 1999 greenline data indicates that the riparian plant communities lack the diversity of herbaceous hydric species which would be expected in a properly functioning system.

The remainder of Riddle Creek is a moderate gradient stream with a cobble substrate which is rated as functioning at-risk with an upward trend. The greenline data again indicates that the riparian vegetation lacks the cover and diversity of herbaceous hydric and deciduous woody species expected in a properly functioning system. The Riddle Creek Meadows and Deep Creek (Paddle Meadows) lack the cover of herbaceous hydric species expected in properly functioning meadows. Although hydrologic monitoring indicates these meadow systems are reduced in potential acreage, water storage capacity, and have accelerated erosion; rangeland monitoring indicates a stable trend in condition.

Stonehouse and Little Stonehouse Creeks are high gradient streams with a cobble/boulder substrate. They are rated in PFC. The diversity of riparian overstory vegetation includes willow, dogwood, elderberry, and chokecherry. Riparian herbaceous plants exist in scattered areas where there are fine soil deposits and sufficient sunlight is allowed through the overstory vegetation. These streams resist degradation through their well-armored streambed and banks. There are a few segments with reduced slope which lack woody vegetation, have a higher width:depth ratio than optimal, and exhibit some bank damage. Below the road cut, along Stonehouse Creek, there are some raw erosive slopes which add sediment during rainfall or snowmelt events. These problems are infrequent and do not alter the streams' functionality rating.

A 1987 riparian habitat inventory of upper Stonehouse Creek rates the habitat quality as fair with 80 percent of plant succession as static and 20 percent as downward. Bank and slope erosion are also noted on 5 to 10 percent of the stream, occurring where cattle can easily access the creek.

E. Water Quality

During 1995, water temperature was monitored at a site immediately downstream of the allotment on Riddle Creek. Water temperature did not meet the State of Oregon water quality standard (17.8 °C maximum 7-day rolling average of the daily maxima). The 7-day average of the daily maximum water temperature was 23.61 °C during the time measured. This site was again monitored in 1999, having a maximum 7-day rolling average of the maximum daily water temperatures of 21.98 °C in the last week of July. In 1996, the stream reaches of Riddle Creek within Stonehouse Allotment were placed on the State 303d water quality limited list due to temperature. The main contributors to the elevated water temperatures are surmised to be a lack of deciduous woody riparian vegetation and excessive bank erosion that has resulted in insufficient shade, low flows, and a wide, shallow channel.

No water quality data has been collected for either Stonehouse or Little Stonehouse Creeks.

F. WSA/Recreation

The Stonehouse WSA (2-23L) contains 21,325 acres, of which 1,099 acres are within Stonehouse Allotment. The Lower Stonehouse WSA (2-23M) contains 8,090 acres, of which 2,551 acres are within Stonehouse Allotment (see map for WSA boundaries within the allotment).

Wilderness values associated with both WSAs include scenic quality and a variety of botanical and wildlife species. Stonehouse WSA has intermittent lakes and critical deer winter range which have been identified as special features. These values associated with the WSAs can be site-specific and may or may not be found within Stonehouse Allotment.

More detailed information may be obtained in the Oregon Wilderness Study Report, Volume 1, October 1991 (BLM-OR-EA-91-43-8561.6).

Stonehouse Canyon is an important public access road to the northeast part of Steens Mountain. The area offers outstanding recreational opportunities. The access road bisects the two WSAs and offers some of the best scenic views in the area.

Recreational opportunities include driving for pleasure, hunting, fishing, backpacking, and horseback riding. Opportunities for primitive recreation and solitude are also outstanding within the area.

Observation of traffic patterns on the Stonehouse Canyon access road and vehicular ways has indicated an increase in recreational use over the past several years.

G. Juniper Invasion

Due to human interruption of the natural fire frequency, past grazing practices, and possible changes in the climate, western juniper has encroached into much of the Stonehouse Allotment (Mehringer and Winyard, 1990; Johnsen, 1962; Burkhardt and Tisdale, 1976; Shinn, 1980; Miller, R.F. and Rose, J.A. 1995; Miller, R.F. and Wigard, P.E. 1994; Miller, Richard F. and Rose, J.A. 1999). As these trees increase in size and density, plant species diversity and plant community structure declines. Such plants as aspen, mountain big sagebrush, snowberry, serviceberry, bitterbrush, Idaho fescue, bluebunch wheatgrass, Thurber needlegrass, various lupines, and Indian paintbrush are reduced in number. Additionally, as juniper density and cover increases the amount of bare ground also increases as the understory plants are reduced (Burkhardt and Tisdale, 1976; Miller, R.F., Svejcar, T.J., and Rose, J.A. 2000; Bates, J.D., Miller R.F., and Svejcar, T. 1998). More surface soil movement has been observed in dense western juniper stands where understory plants have been reduced (Davenport, D.W., Breshears, D.D., Wilcox, B.P, and Allen, C., 1998; Buckhouse, J.C. and Maitison, 1980).

H. Grazing History and Current Livestock Management

In 1902, David Griffiths published a report for the U.S. Department of Agriculture on forage conditions on the northern border of the Great Basin. In this report, he relates information and photographs of grazing use on Steens Mountain based on his observations during a field study completed in 1901.

Mr. Griffiths states, "The most closely pastured region visited was Steins (Steens) Mountains. On the whole trip of three days we found no good feed, except in very steep ravines, until we reached the vicinity of Teger (Kiger) Gorge."

Griffiths (1902) made a conservative estimate of 182,500 sheep summering on Steens Mountain. There is no recorded number of cattle on Steens Mountain, but it is generally accepted that cattle use was much higher than at present. During the first 35 years of this century, domestic livestock would follow the snowline up the mountain and be driven off the mountain in the fall by snowstorms.

By 1936, 2 years after passage of the Taylor Grazing Act, the transient sheep outfits (those without base property to support their flocks during the winter) were forced off the mountain (Bill Bradeen, 1972).

This area was part of the Alvord individual allotment included within the Diamond adjudication unit in 1965 and 1966. The Stonehouse area was encompassed in the Alvord individual AMP which was implemented in 1967. At this time, the area was grazed in a deferred rotation system of June 15 to August 30 one year and July 30 to August 30 the next. Because much of the private rangeland to the south and west of the current boundary was included with the Alvord individual allotment, comparisons of stocking levels between then to today are not possible.

In 1970, the current Alvord Allotment boundaries were developed from transfers from the Mann Lake Ranch. At this time, the current permittee acquired the Federal grazing permit for the Alvord Allotment which included the Stonehouse Pasture. In 1985, the Alvord AMP was rewritten and approved. This document described the use for Stonehouse Pasture as 700 cattle July 1 to September 15 equaling1,772 AUMs in what was described as a deferred grazing use.

In 1995, through agreement with the permittee, the Stonehouse Pasture was withdrawn from the Alvord Allotment and designated as a separate allotment. The Alvord AMP did not adequately address management of Stonehouse Pasture which is at 6,000 to 7,000 feet elevation, physically separated from Alvord Allotment and has always been managed separately.

The current grazing permit is for 700 cattle June 15 to September 15 which equals 2,117 AUMs. There are 53 AUMs allowed for exchange-of-use of private land within the allotment. The allotment is an Improve (I) category allotment for the following reasons:

1. Range condition is not satisfactory
2. Forage production potential is high and present production is moderate
3. Present management is unsatisfactory
4. Resource use conflicts and controversy exist
5. Riparian/wet meadow condition and trend are unsatisfactory

The ranking by management category was completed when Stonehouse was a pasture of Alvord Allotment, which was ranked as Number 5 in priority for allocation of funding and planning to improve management.

Currently, Stonehouse Allotment does not have a grazing system, it is grazed by 700 cattle June 15 to September 15 on a continuous seasonal basis. Timing of grazing is often within 1-month or less of key plant species maturity on upland sites and, therefore, in past management and planning documents it was referred to as a deferred pasture.

The Stonehouse Allotment had an evaluation completed in 1999, a summary of the results of this evaluation is in Appendix E. Appendix E also contains the Analysis of Rangeland Standards and Guidelines for Livestock Management which was completed by the BLM ID Team as part of the evaluation.

III. DESCRIPTION OF THE PROPOSED ACTION (Two Pasture Early-Deferred Rotational Grazing)

A. General Description

The allotment would be divided into two pastures with two exclosures (see proposed alternative map for allotment boundaries with proposed pasture and exclosure fences). Stonehouse Canyon would be excluded from livestock grazing. Cattle would be allowed to trail through this excluded area when going to and from the allotment. Trailing is expected to take 2 days moving up the mountain and 2 days coming off.

The Stonehouse Canyon exclosure fence would have two locations analyzed due to WSA considerations on the north boundary of the exclosure (Alternative A and Alternative B).

Alternative A would require 1.60 miles of fencing on the northern boundary, of which 1.50 miles would be within the Stonehouse WSA (2-23L) and .10-mile would be outside the WSA. The western boundary would have 1.50 miles of fence outside of WSAs and the southern boundary would have .40-mile of fence within the Lower Stonehouse WSA and .10-mile of fence outside of the WSAs. In total, this alternative would require 1.70 miles of fence outside WSAs and 1.90 miles of fence within WSAs for a total of 3.60 miles. This would exclude 440 acres of Stonehouse WSA and 1,600 acres of Lower Stonehouse WSA from livestock grazing.

Alternative B would require 2.50 miles of fencing on the northern boundary outside of the WSA. The western boundary would have 1.50 miles of fence outside of WSAs and the southern boundary would have .40-mile of fence within Lower Stonehouse WSA and .10-mile of fence outside of WSAs. In total, this alternative would require 4.10 miles of fence outside of WSAs and .40-mile within WSAs for a total of 4.50 miles. This would exclude livestock grazing from 880 acres of Stonehouse WSA and 1,600 acres within the Lower Stonehouse WSA.

There would be two 14-foot cattleguards installed where fences cross roads or ways (which are outside WSAs) (see proposed alternative map). Also, under the proposed action 2.75 miles of existing fence would be removed from within Lower Stonehouse WSA and an additional 2 miles of fence would be removed outside of WSAs (see map for proposed action for location of fences to be removed).

The proposed action would also encompass excluding livestock from Riddle Creek by constructing an exclosure the length of the stream on public land (approximately 1.90 miles per side for a total of 3.80 miles) within the Stonehouse Allotment. Leppy Springs and Charles Kuhl Springs would be within this exclosure. Both springs would have water piped out to a trough to provide livestock water. The exclosure width and exact location would be determined by the ID Team with input from the livestock permittee. The exclosure would include the entire lateral width of the riparian zone at a minimum. These exclosures, troughs, and pipe are outside of any WSAs.

The exclosure fences would be 4-strand barbed wire fence with the bottom strand smooth. The spacing of the wire would be 16 inches above ground level for the lowest strand, 22 inches for the second, the third would be 36 inches, and the top strand 42 inches. There would be two wooden stays equally spaced and wired between fenceposts. Both exclosures would require approximately 7.10 or 8.30 miles of fence, depending on which alternative for Stonehouse exclosure is selected. The BLM would construct the exclosures and the BLM grazing permittee would be assigned the maintenance of these exclosures (see map for proposed alternative).

There would be an additional 1.20 miles of fence required to separate the two pastures that would be grazed.

The general season of use would be June 8 to September 8 with licensed use for 700 cattle 2.5 months during this general season. The early use pasture would have a general season of June 8 to July 15. However, the early season may be extended up to 2 weeks by the authorized officer depending on key plant species phenology, growing season conditions (cool wet season, late snow conditions), current utilization levels, and when grazing begins. The general season for late use would be July 16 to September 8. The two pastures (Ward and South) that would be grazed under this alternative would be grazed in the following sequence on a 3-year cycle.

	Ward Pasture	South Pasture
Year 1	Late	Early
Year 2	Late	Early
Year 3	Early	Late

When a 3-year cycle is completed, the cycle sequence would begin again. Management must be adaptive (able to change quickly to respond to monitoring data) with consideration given to past seasons' monitoring results as well as preseason monitoring and current climatic conditions, such as late snowmelt, cold early season which delays plant phenology stages or earlier phenological development resulting from warm early growth conditions. This may result in pasture season changes, timing of grazing changes or additional rest or other modifications to the general schedule to attain management objectives. All changes and/or modifications to the general schedule would be documented in the BLM allotment file with rationale for modifications.

The proposed action would also include the reintroduction of fire on approximately 35 percent of the allotment which is 3,600 acres (see proposed prescribed burn boundaries map). The northeast area proposed for fire reintroduction is mostly mountain sagebrush-bunchgrass communities in an early transition state to juniper woodlands. The burn implementation objective for this area is to achieve between 55 to 70 percent of the area actually burned in a landscape mosaic of burned and unburned area.

The western area proposed for fire reintroduction has less of the mountain sagebrush-bunchgrass communities in transition to juniper woodlands. In those portions of this unit that do not have juniper encroachment within the mountain sagebrush-bunchgrass plant communities, the objective for actual burn would be a mosaic landscape burn with 40 percent or less of these communities burned. Those portions of this unit having juniper encroachment would have the same objective for the amount of area burned as described for the northeast unit (a landscape mosaic between 55 to 70 percent of the area actually burned).

The wetland meadows on the south end would be burned after the upland burns with the objective of creating a mosaic of burned and unburned meadow communities to ensure a diversity of habitat and adequate cover for dependent wildlife species.

There would be no mechanical cat lines used to control the scope of these burns. The methods used to achieve the landscape mosaic burns described above include but are not limited to the following: Burning during September or October when the burning period is typically shorter; control time of ignition (burning later in the day when less percentage of burn is desired which uses nighttime humidity to extinguish the fire); burning black lines at night to control boundaries of daytime ignition; using roads, topographical features, trails and sparse vegetation to control the scope of the fire; using weather forecasts, on-site weather readings as well as monitoring fuel moisture on-site to determine when to start ignition.

The reintroduction of fire would require 3 years of rest from livestock grazing, 1-year preburn to ensure adequate fine fuels, and 2 years following the burn to ensure plant community development following the fire. There are approximately 100 acres of small aspen stands scattered throughout the allotment which would require cutting of juniper to enable the reintroduction of fire into these stands. Many of these stands would have temporary protective fencing (from deer, elk, and cattle) following burning with field fence approximately 8 feet in height. These fences would be in place until average sapling height is 7 feet and above.

This proposed action would also provide for two spring developments, 2.30 miles of pipeline, and four troughs within the Ward Pasture to provide adequate water for deferred grazing. The springs would be developed so only part of the flow was diverted into pipelines. Float valves would be used on all troughs and the water would be shut off at the spring source when not in use by livestock. These structures would be outside of WSAs (see map for location). Maintenance of five existing reservoirs would also be completed. The AMP would be a term and condition of the 10-year grazing permit. Billing would be based on the actual use report which would be submitted to BLM within 15 days of the last day of use. Flexibility in licensing and management would be as described under adaptive management.

IV. DESCRIPTION OF ALTERNATIVE PLANS

A. Alternative I - Three Pasture Adaptive Rotational Grazing

The allotment would be divided into three pastures that would be grazed (Riddle Creek, Ward, and South). Stonehouse Canyon would be excluded from livestock grazing as described in the proposed action. Cattle would be trailed up and down the mountain through this exclusion area only. Trailing is expected to take 2 days moving up and 2 days when coming off the mountain. Fencing of this exclosure would also be as described in the proposed action.

The general season of use would be June 8 to September 8 with licensed use to be 700 cattle for 2.5 months during this general season. When a pasture is designated for early use, the general season would be June 8 to July 15. However, the early season may be extended up to 2 weeks by the authorized officer depending on key plant species phenology, growing season conditions (cool wet season, late snow conditions), current utilization levels and when grazing begins. When late season is designated the general season would be July 16 to September 8. The three pastures would be grazed and rested in the following sequence on a 4-year cycle.

	Riddle Creek	Ward	South
Year 1	Rest	Late	Early
Year 2	Early	Rest	Late
Year 3	Early	Late	Rest
Year 4	Rest	Late	Early

When a 4-year cycle is completed, the cycle sequence would begin again. Management must be adaptive (able to change quickly to respond to monitoring data) with consideration given to past seasons' monitoring results as well as preseason monitoring and current climatic conditions, such as late snowmelt, cold early season which delays plant phenology stages or earlier phenological development resulting from warm early growth conditions. This may result in pasture season changes, timing of grazing changes or additional rest or other modifications to the general schedule to attain management objectives.
All changes and/or modifications to the general schedule would be documented in the BLM allotment file with rationale for modifications. This alternative would require approximately 1.25 miles of pasture fences on public land in addition to the Stonehouse exclosure fence (see Alternative I map). Cattleguards would be installed at the two locations where the proposed fences cross the road (see Alternative I map).

Under this alternative there would be no exclosure of Riddle Creek. Grazing would be managed by controlling timing of grazing (early season) and providing periodic rest. There also would be no spring development or troughs needed on Leppy and Charles Kuhl Springs.

This alternative would encompass the prescribed burns, juniper cutting within aspen stands (with temporary protection fencing), pipelines and troughs for Ward Pasture, reservoir maintenance, and the removal of existing fence within Stonehouse WSA as described under the proposed action.

The AMP would be a term and condition of the 10-year grazing permit. Billing would be based on the actual use report which would be submitted to BLM within 15 days of the last day of use. Flexibility in licensing and management would be as described under adaptive management.

Alternatives A and B for fencing the northern boundary of the Stonehouse exclosure would remain as options as described under the proposed alternative.

B. Alternative II - Early Season Use Only

The allotment would have no new fencing or water developments. The general season of use would be June 1 to July 15 with no change in the permitted AUMs. However, the early season may be extended up to 2 weeks by the authorized officer depending on key plant species phenology, growing season conditions (cool wet season, late snow conditions), current utilization levels, and when grazing begins. Prescribed fire and juniper cutting within aspen stands with temporary fencing would be the same as the proposed action and Alternative I. Fences which were described to be removed under the proposed action both inside and outside of the WSAs would also be removed under this alternative. Management must be adaptive (able to change quickly to respond to monitoring data) with consideration given to past seasons' monitoring results as well as preseason monitoring and current climatic conditions, such as late snowmelt, cold early season which delays plant phenological development or development is accelerated due to warm early growth conditions. This may result in timing of grazing changes, season of use changes, rest or other modifications to the general schedule to attain management objectives. All changes and modifications to the general schedule would be documented in the BLM allotment file with rationale for modifications. As with other alternatives, billing would be based on actual grazing use and the AMP would become a term and condition of the 10-year permit.

C. Alternative III - No Action

Under this alternative, livestock use would continue as currently permitted, that is for 700 cattle June 15 to September 15 equaling 2,117 AUMs. There would be no changes in management, no reintroduction of fire, no juniper cutting and temporary fencing of aspen stands, no water developments, and no pasture fencing or exclosures.

V. ENVIRONMENTAL CONSEQUENCES

A. Proposed Action - Two Pasture Early-Deferred Rotational Grazing

1. Anticipated Impacts

a. To Vegetation (Uplands)

Under this proposed action, the Stonehouse Canyon grazing exclusion area would not have cattle grazing except that which would occur during trailing. Those areas within the canyon where cattle currently concentrate throughout the season of use would improve. Under this proposed action, all plants in the excluded area would be able to complete their reproductive cycle when moisture is adequate.

The proposed management would increase grazing use by livestock on much of the upland plant communities. Utilization levels would be expected to be light to moderate and management would limit utilization of key species to 50 percent.

Upland plant communities within the Ward Pasture would be grazed when most plant species are in critical growth stages 1 out of 3 years. This would allow 2 out of 3 years when uplands are grazed in partial deferment, allowing for most upland herbaceous plants to complete their reproductive cycle if soil moisture is adequate.

Upland plant communities within the South Pasture would be grazed when most plant species are in critical growth stages 2 out of 3 years. This would allow 1 out of 3 years when uplands are grazed in partial deferment allowing for most upland herbaceous plants to complete their reproductive cycles if soil moisture is adequate.

The duration of use would be reduced from the current 10 to 12 weeks to approximately 5 weeks within a pasture. This will decrease the frequency of repeat defoliation of desired livestock forage species. This will allow adequate regrowth when plants are grazed early and for grazed plants to regrow and complete their reproductive cycle if soil moisture is adequate.

The changing of timing of grazing also changes plant species palatability for livestock, i.e., cattle will use more browse during the late season, and less in early season. The amount of time spent in plant community types varies by season, i.e., livestock need for shading in aspen communities increases with late season. This animal behavior will allow rest from grazing for desired forage plants by changing timing of use. The grazing management outlined in the proposed action would allow upland plant communities to function and provide for plant community health.

The reintroduction of fire would have the least impact on the low sagebrush-Idaho fescue plant communities. Approximately 5-10 percent of these plant communities would have fire reintroduced. Fire would increase herbaceous species and create a mosaic of seral stages providing plant species diversity, structural diversity, and varied habitat for dependent wildlife species.

The mountain sagebrush-Idaho fescue-mountain brome plant community types would improve in watershed function with the reintroduction of fire. Many of the ecological sites in this community type (approximately 30 percent of the proposed burn area) are currently dominated by decadent mountain sagebrush with a suppressed herbaceous understory. Other ecological sites within this community type are in the early stages of development toward a juniper woodland community (approximately 60 to 65 percent of the proposed burn area). The historical fire frequency for these sites is approximately 10 to 15 years. Most of these sites have been without fire for 25 to 60+ years (Aging of sagebrush within stands, Buchanan 1998 and 1999). The release of herbaceous understory will increase the efficiency of water use on the site, reducing overland flow and erosion potential. An increase in plant species and structural diversity would result from the reintroduction of fire. A mosaic of seral stages with older shrub-dominated communities, and herbaceous-dominated communities would result in improving watershed function and increasing habitat diversity for wildlife. Mountain sagebrush would reestablish on burned sites within 2 to 3 years and provide significant canopy cover (10 to15 percent) within 8 to 10 years.

The aspen plant communities are declining in health, developing toward juniper woodlands due to the removal of fire from the ecosystem and some impacts from seasonlong grazing. Many of these stands would require the juniper be cut to allow adequate ladder fuels for fire to reenter. Aspen clones would be stimulated by fire to root sprout. These young plants will increase stand density, restore stand health, and allow these plant communities to perpetuate. Some stands will require temporary fencing to allow root suckers to get ample height before browsing by elk, deer, and livestock.

The three consecutive years of rest, 1-year prior to and 2 years after the burn, would allow for maximum reestablishment of upland plant communities.

The development of water would allow livestock to distribute more evenly, thereby controlling levels of utilization. These water sources, along with fencing, are needed to provide the critical growing stage rest for desired forage plants, control duration and timing, and intensity of use to manage for healthy rangelands.

b. To Riparian and Wetland Areas

Under the proposed action riparian habitat would improve. The perennial streams, Riddle Creek, Stonehouse Creek, and Little Stonehouse Creek would be excluded from livestock grazing on public land. Exclusion from livestock grazing would allow riparian plant communities to progress toward later seral stages. Willow communities would establish on some point bars, and varied age classes would develop in existing willow communities on Riddle Creek. Improvements in riparian plant communities would lead to improved channel morphology and hydrologic processes.

Stonehouse and Lower Stonehouse Creeks are currently in PFC. Only short segments of these riparian plant communities (.20-mile or less) would have increases in hydric herbaceous species, with few changes expected in the deciduous woody overstory. Some improvement in bank stability would occur on portions of these streams.

The proposed grazing management would improve the wetland meadows within the allotment. The pasture fencing would be designed so that the Riddle Creek Meadows and Deep Creek Meadows (Paddle Meadows) would be in the South Pasture. The 1999 allotment evaluation identified most of the livestock use was seasonlong on these meadows. The proposed action would implement an early season of use (June 8 to July 15) in the South pasture 2 out of 3 years. The remaining year the pasture would be grazed approximately July 16 to September 8. The early use would encourage livestock use on the uplands because the upland grasses are highly palatable during this season. The proposed fencing would improve livestock distribution which would provide a more even utilization pattern between plant communities. Decreasing duration of use from 10 to 12 weeks to 5 to 6 weeks under the proposed action will reduce instances of repeat defoliation of plants by livestock grazing, allowing grazed plants opportunities for regrowth. This regrowth would provide for wildlife habitat needs and watershed function. During the early season of grazing, wetlands would have adequate moisture in most years to allow regrowth of hydric species that are grazed, allowing these plants to complete their reproductive cycle. When the South Pasture is grazed late there should be adequate median stubble height of key species (3 inches) to allow meadows to function and continue to improve.

Fire would be reintroduced to portions of these meadows which are dominated by xeric (drier site) plant species. Following burning, 2 years of total rest would be provided to accelerate recovery of hydric plant species on these meadows.

The Stonehouse Canyon exclosure fence on the north boundary in Alternative B would cross above a perennial spring and through the riparian plant community above the spring. This would cause cattle to concentrate near the fence and result in degradation of the small meadow and the spring. This fence proposal would also exclude grazing from one spring on public land. The location of Alternative A fence would prevent cattle concentration and allow management of the spring and small meadows to improve riparian habitat.

c. To Hydrology/Water Quality/Air Quality

The changes in plant community diversity, structure, and cover resulting from the reintroduction of fire and improved grazing management on the uplands and wetland meadows would ensure proper watershed function. With reduced livestock trampling, soil compaction and hummocking in the meadows are expected to decrease. A healthy hydric vegetation community and uncompacted soils will allow these areas to capture, store, and safely release water.

As the riparian condition in Riddle Creek improves, the stream channel would narrow and deepen, and the shade from woody species would moderate the effects of solar radiation on water temperatures. Improved floodplain morphology would reduce sedimentation and spawning gravel embeddedness.

As described earlier, Stonehouse and little Stonehouse Creeks are in PFC with only low gradient reaches expected to improve.

The proposed action would ensure that surface water influenced by activities on public land would comply with or make progress toward achieving State of Oregon water quality standards for beneficial uses.

Air quality would be affected during actual burning; however, Parts Per Million (PPM) of particulate matter would be under acceptable levels. The prevailing wind patterns are away from population centers so no detrimental impacts would occur.

d. To Wildlife and Fisheries

Under the proposed action, Stonehouse Canyon 2,040 acres (Alternative A) to 2,480 acres (Alternative B) would be excluded from livestock grazing. There are no known negative impacts to wildlife species in this area from the exclusion of livestock grazing. However, fencing to exclude this area and pasture fencing would create a slight hazard to elk, deer, antelope, and bighorn sheep.

The Alternative B proposed north boundary fence location would cross wildlife trails which are heavily used by deer and elk coming in and out of Stonehouse Canyon. This fence location may allow additional predation as animals cross the fence and would create a possible hazard. Alternative A fence location is south of wildlife trails into the canyon and would not create as much of a hazard to wildlife.

All fencing would be constructed to BLM standards to facilitate use by these species.

Wildlife species would benefit from the additional water sources provided by the spring developments and pipelines. The earlier season of use and the reduced duration of use in each area would provide less opportunity for repeated defoliation of plants by domestic livestock. The residual herbaceous cover on uplands and wetlands would provide improved habitat conditions for most wildlife species. Key among habitat conditions that would improve are increased forage supply and protective cover.
The improved conditions in the uplands and wetlands would provide improved habitat for sage grouse and bighorn sheep as well as a myriad of other wildlife species.

The effects of prescribed burns in the short term would be to remove cover on which certain species of wildlife are dependent. This would apply to sage grouse, sage sparrows, and other sagebrush dependent species. Since this burn would occur in September or October, most of these species, especially neotropical migratory birds should have migrated out of the area. Sage grouse may still be using the area at this time since it is classified as a brooding/late summer area. The sage grouse should move to other available habitat during this disturbance.
The reduction in mountain big sagebrush cover would meet requirements for sage grouse the following summer with the mosaic of unburned and burned sagebrush-bunchgrass communities which would exist.

Western sage grouse would benefit from prescribed fire in these mid-elevation areas in the long term because of the increase in diversity of habitat, additional forb species, and herbaceous cover, and the increase in insect production. This is summer and fall habitat for this species, a time in which chicks are dependent on insects and forbs to provide protein in their diets (Crawford, J.A., McDowell, M.D., January 1999 Sage Grouse Habitat and Sage Grouse Response to Prescribed Burning in Oregon, Page 233, Pages 17 to 30).

Canopy cover of mountain big sagebrush is expected to return to 10 to 15 percent in the burn 8 to 10 years post-burn. Sage grouse should use this area as in pre-burn conditions at this time.

The reintroduction of fire into the Stonehouse ecosystem would increase plant diversity by providing varied seral stages of plant communities. The resulting mosaic of vegetation associations is expected to improve habitat for most wildlife species. Fire has been a natural component of the evolution of plant and animal communities: its reintroduction would enhance continued natural ecological evolution (Houston, 1973; Wright and Bailey, 1982; Miller and Rose, 1999). However, impacts on wildlife in areas following burning cannot be generalized (Lyon, 1979, as cited in BLM, 1989). Ream (1981) reviewed 237 references on the effects of burning on small mammals and songbirds and found variable responses.

All riparian habitat is expected to improve with implementation of the proposed action. The wetlands would increase in hydric plant species and soil water retention thereby providing a more reliable lotic habitat. Increased standing vegetation will improve food and cover for many birds including sage grouse and small mammals and provide increased forage for elk, deer, and antelope.

Within an overstory of shrubs, increased herbaceous cover would hold snow and soils in place, improve infiltration of snowmelt and rain, and allow more regulated runoff affecting timing and duration of stream flow. This balance is needed for the proper function of lotic riparian areas and aquatic habitats. This would then improve habitat for riparian and aquatic dependent species such as the inland redband trout and macroinvertebrates.

Under the proposed action, livestock grazing would be excluded from public land riparian communities of Riddle Creek. Riddle Creek has the only fishery in the Stonehouse Allotment.

Riparian vegetation condition and bank stability are expected to improve. Enhanced fish habitat characteristics would include rootwad and root mass cover, overhanging vegetation cover, terrestrial and aquatic insect production, increased frequency of undercut banks and pool habitat. Water temperatures may lower over time and there would be less opportunity for sedimentation in spawning gravels. Over time, there may be opportunity for increased fish use as fish habitat improves within the allotment.

e. To Wilderness and Recreation Values

Alternative A of the proposed action identifies constructing two fences totaling 1.90 miles within WSAs and placement of two 14-foot cattleguards on the boundary road where the new fences would cross. The proposed action also addresses the reintroduction of fire into a fire-dependent landscape. The 1.90 miles of fence would be within a portion of two WSAs, to exclude livestock from Stonehouse Canyon, Stonehouse and Little Stonehouse Creeks. This exclosure would total approximately 1,920 acres within the WSAs.

Overall naturalness, vegetation and wildlife values, scenic quality, solitude, and primitive and unconfined types of recreation would be enhanced through improved management of livestock grazing and the exclusion of livestock.

Approximately 85 percent of the prescribed fire would occur outside the WSAs. There are two areas that are targeted within the WSAs which total approximately 500 acres. Impact to solitude and naturalness would be minimal and short term. Positive effects would occur in the following growing season with long-term benefits in vegetative diversity enhancing the naturalness of the area.

With the overall improved ecological condition of the area, enhancing the naturalness within the WSAs would allow for a better recreational/wilderness experience for the visitor.

Construction of the new fence would add to the existing human-made developments within the WSAs of the 1.90 miles of new fence. There would be 1.50 miles of the northern boundary of the exclosure in the Stonehouse WSA (2-23L). Approximately .40-mile of fence would be in the Lower Stonehouse WSA (2-23M).

The addition of the fence would have an impact on the naturalness of the area, however, the removal of an equal amount of existing nonfunctional fence would result in no net increase of fence within the WSAs. Better location of the new fence and the placement of the two cattleguards would allow for improved management of the area, especially when livestock are using the area. It would also benefit the recreational user by not having to open and close gates.

During the time of construction, impacts would occur to the visiting wilderness/recreationist. These impacts would be short term and take 1 to 2 weeks to complete. Annually, fence maintenance would occur and should only take a day or two to complete. Maintenance of the cattleguards may occur once every 3 to 5 years.

The cumulative results of the proposed projects within the WSAs would be an overall improvement of the ecological conditions within the area, improving the naturalness and the quality of the wilderness/recreational visitor's experience.

Alternative B of the proposed action identifies construction of 2.50 additional miles of new fence and the placement of two 14-foot cattleguards. One cattleguard would be placed on the southern boundary road, in the same location as described in Alternative A. The other one would be located on the two-track road which leads to the Ward place. The .40-mile of fence would still be located within the Lower Stonehouse WSA as described under Alternative A. The 1.50 miles of fence that were proposed under Alternative A within the Stonehouse WSA would not be constructed under this alternative.

Alternative B would also exclude livestock from Stonehouse Canyon, Stonehouse and Little Stonehouse Creeks. This exclosure would total approximately 2,480 acres within the WSA.

The impacts/benefits on wilderness and recreational values for the livestock exclosure, the prescribed fire, and the .40-mile of fence within Lower Stonehouse WSA, would be the same as described in Alternative A.

There would be an additional 440 acres added to the exclosure within Stonehouse WSA, enhancing the overall naturalness of the area. Vegetation and wildlife values, scenic quality, solitude, and primitive and unconfined types of recreation would also benefit, within the 440 acres.

f. To Visual Resource Management

Alternative A of the proposed action is within VRM Class II where the changes to the landscape should not be evident to the casual observer.

The construction of the new fence and the placement of the two cattleguards would have a slight visual impact to the visitor, although only when they are within the immediate area of the road which forms the west boundary of the WSA. The fence and cattleguards would only be seen along two sections of the road. One section would be located south of the Stonehouse Canyon access road toward Paddle Meadows and the other section would be located north toward the Ward place. This distance covers about 1.00-mile of proposed fence to be located adjacent to the road which is the northern boundary of Stonehouse WSA. The majority of this fence which would be visible to the public is located outside the WSA.

The most direct visual impact to the visitor as a result of the proposed fences, would be along Riddle Creek. Approximately 4.00 miles of fence would be constructed outside of WSAs within a narrow corridor forming a linear exclosure. The visual impacts would last for 2 to 4 years, until woody species grow tall enough to help screen the new fence.

Because of vegetative and topographic screening found throughout the area, the remainder of the new fences would not be seen by the casual observer. This area has rolling topography on top with a steep mountainous escarpment on the east face which has a variety of woody species such as juniper, aspen, mountain mahogany, and bitter cherry providing natural screening.

The other improvements are four water troughs with approximately 3.25 miles of buried pipe. The impact to burying the pipe would be immediate, though, short term. By the next growing season visitors would not be able to see the line of disturbance caused from burying the pipe, due to vegetation regrowth. These developments are outside of WSAs.

The area right next to the watering troughs would be impacted by livestock. The vegetation would be degraded due to trampling.

Short-term visual impacts would occur to the vegetative communities as a result of the reintroduction of fire. Positive effects would be seen the following growing season with a diversity of plant growth. A mosaic pattern of burn and unburned vegetation would allow for a variety of landscape patterns. Improved livestock management and prescribed fire would have long-term benefits for the ecological condition of the area.

The overall visual impact to the WSAs and the remainder of the Stonehouse Allotment, as a result of all developments, is insignificant. This is due to the size of the area in relationship to the entire WSA, the removal of the same amount of old fence, the vegetative and topographic screening, and the increase in plant diversity as a result of improved management.

Mitigating measures include using solid green fenceposts, green cattleguards, and brown or green water troughs to minimize visual impacts, by blending into the environment. There would be no blading of the fenceline and vehicle use to construct the projects would be kept to a minimum.

Alternative B of the proposed action with mitigating measures would be the same as described in Alternative A for all fence construction, cattleguards, prescribe fire, and the buried pipelines with troughs.

The additional fencing not included in Alternative A would be 2.50 miles of fence outside the WSA along the north boundary road (see map). This section of fence replaces the 1.50 miles of fence proposed in Alternative A inside the WSA.

This 2.50 miles of fence would be highly visible to visitors using the road and from the northern portion of Stonehouse WSA because of its close proximity to the road, gently sloping topography and the low sagebrush-bunchgrass plant community in which it would be constructed. These factors would provide no visual screening of this fence. There would also be some visual impacts from livestock pushing up against this section of new fence because of its close proximity to the spring.

The overall visual impact to the scenic quality of Stonehouse WSA and the Stonehouse Allotment would be less from Alternative A when taking into consideration the size of the area, the diverse topography, and vegetative screening.

g. To Cultural Resources

Cultural inventories are needed to identify any flammable historic structures, artifacts and features (e.g., scribed aspens); any prehistoric sites (e.g., rock art); and paleontological sites that would be susceptible to fire damage. Areas considered for ground disturbing activities, i.e., fences, pipelines, troughs and juniper cuttings, would also need to be inventoried. American Indian traditional use areas, if any, would need to be identified. Mitigation measures for significant sites, features, and use areas may include, but are not limited to, avoidance, data collection, and monitoring.

2. Mitigating Measures

a. Special Status species and cultural and historic surveys would be completed on sites prior to construction of structures or reintroduction of fire. Any possible impacts to these values would be mitigated.

b. Rangeland monitoring studies would be reviewed annually with the grazing permittee and adjustments in management would be made, as needed, to ensure allotment management objectives are met.

c. After two cycles of grazing (6 years) according to the proposed grazing management, rangeland monitoring studies would be formally evaluated. At this time, adjustments necessary to meet management objectives that were not made under yearly review would be implemented. This would be done through cooperation and consultation with the grazing permittee. If changes needed to reach objectives cannot be attained through agreement, a formal decision would be issued.

d. Materials used in fencing would include such things as fenceposts painted with colors designed to reduce visibility of the fence.

e. All water troughs would be equipped with wildlife escape ramps to ensure small animals do not drown.

f. Spacing of wire for all exclosures would be, starting from the ground up: first strand 16 inches, second strand 22 inches, third strand 36 inches, and the top strand 42 inches with two wooden stays evenly spaced and wired between fenceposts.

3. Cumulative Impacts

The cumulative impacts of the proposed action would be the achievement of the management objectives outlined for the allotment and achievement of the Standards and Guidelines for Rangeland Health for Oregon and Washington. Specifically, those guidelines and standards identified as not in conformance or not achieved by the 1999 BLM allotment analysis and evaluations are summarized below.

a. Guidelines

1) The season, timing, frequency, duration, and intensity of livestock grazing use should be based on physical and biological characteristics of the site and management unit.

The proposed action would change the season, timing, frequency, and duration of use and adjust the intensity of grazing based on the physical and biological characteristics of the site.

2) Provide periodic rest from grazing for rangeland vegetation during critical growth periods to promote plant vigor, reproduction, and productivity.

The proposed action provides for partial deferment for uplands, early use, and a combination of partial deferment on the wetland meadows and exclusion from livestock grazing in riparian communities on Riddle Creek, Stonehouse, and Little Stonehouse Creeks.

b. Rangeland Health Standards

1) Watershed Function - Uplands

The mountain sagebrush-bunchgrass ecological sites were determined to be functioning at-risk due to plant composition, community structure, and lack of direct ground cover. Livestock was not a causal factor. The proposed action would reintroduce fire to these sites which would restore plant species diversity, community structure by providing varied seral stages of plant communities and increase ground cover. The proposed livestock management would maintain this diversity, structure, and ground cover.

2) Watershed Function - Riparian/Wetland Areas

Riddle Creek is identified as functioning at-risk with livestock as a causal factor. Indicators are a less than potential deciduous woody species cover and a lack of varied age classes. The herbaceous community is lacking hydric species cover. The width:depth ratio, sinuosity, bank stability, and floodplain accessibility were also determined to be below potential for this type of stream. Under the proposed action, an exclosure would be constructed to exclude livestock from Riddle Creek riparian zone on public land. This exclusion would allow for recovery of this stream to a minimum of PFC. All indicators of functionality deficiencies would improve.

Stonehouse and Little Stonehouse Creeks were identified as being in PFC, however, the lower reaches have some bank instability and hydric herbaceous vegetation cover is expected to increase as the stream progresses toward potential. Bank structure would also improve in these lower reaches. These streams would be excluded from livestock grazing under the proposed action.

The lack of standing vegetation following grazing on wetland meadows was identified in the evaluation as affecting wildlife habitat and the capture, storage, and safe release of water. There was also accelerated erosion noted on portions of the wetlands.

The proposed action would increase hydric species diversity, increase hydric vegetation ground cover, and decrease soil compaction. Paddle Meadows and Riddle Creek Meadows were identified as functioning at-risk due to a lack of hydric vegetation and an invading xeric plant community.

The proposed action would provide an early and a partially deferred season of use with a reduced duration of use. These management actions would improve hydric species cover.

The proposed action would also encompass prescribed burning on portions of the wetlands to accelerate recovery toward more hydric plant communities. The proposed action would include 3 years of initial rest from grazing to expedite initial plant community recovery.

3) Ecological Processes

The ecological processes are functioning but may be at-risk on wetlands and mountain sagebrush communities with livestock possibly being a causal factor. Indicators are current plant composition, community structure, and plant species diversity.

The proposed action would provide an earlier season of use, shorten the duration of use in each area, provide for partial deferment, reintroduce fire with 3 years of initial rest from grazing (1-year prefire and 2 years post fire) and provide for no livestock grazing in excluded areas. Trailing would be allowed within Stonehouse exclosure. These management actions are expected to increase plant species diversity, plant community structure, and improve plant composition. The plant community changes would ensure the functioning of ecological processes.

4) Water Quality

This standard was not achieved in Riddle Creek due to water temperatures, with livestock determined to be a causal factor. The indicator used is a temperature greater than 17.8 °C for a 7-day rolling average. The proposed action would exclude livestock grazing within the riparian communities of Riddle Creek on public land. This would minimize any possible effects from livestock to the attainability of the State of Oregon water quality standards.

5) Native, Special Status, and Locally Important Species

This standard was not achieved for redband trout which are only found in Riddle Creek within the Stonehouse Allotment. Livestock were determined to be a causal factor. The indicators used for this determination were water temperature, bank stability. Indirect indicators of habitat quality are riparian plant species composition, canopy cover, and hydric herbaceous cover. As described earlier, the proposed action would exclude livestock from grazing in the Riddle Creek riparian communities on public land. This would allow an increase in hydric herbaceous plant cover, increase deciduous woody canopy cover, and establish more than one age class of woody species as well as improve streambank stability. Livestock would no longer be a causal factor.

4. Residual Impacts

There are no residual impacts identified under the proposed action.

B. <u>Alternative I - Three Pasture Adaptive Rotational Grazing</u>

1. Anticipated Impacts

a. To Vegetation (Uplands)

This alternative also provides for exclusion of grazing for the Stonehouse Canyon and surrounding area, as described in the proposed action. The impacts on upland vegetation of the reintroduction of fire, water developments, and pipelines are as described under the proposed action.

This alternative would increase utilization levels within low sagebrush communities. Utilization on all upland plant communities may increase. Utilization levels within the mountain sagebrush-bunchgrass communities in the Ward Pasture (grazed late 3 out of 4 years) may increase significantly.

However, in these years, grasses would have matured (completed reproductive cycle). Dietary preference toward browse would increase, especially in drier years. Grazing use would be expected to increase within aspen communities and/or other preferred browse.

As described under the proposed action, duration of use in each area would be reduced from 10 to 12 weeks currently to 5 to 6 weeks, resulting in a decrease in the frequency of repeat defoliation of desirable forage plants with an opportunity of regrowth and completion of the reproductive cycle. Under this alternative, all grazed pastures would have periodic rest. Riddle Creek Pasture would be rested 2 out of 4 years, Ward Pasture 1 out of 4 years, and the South Pasture 1 out of 4 years.

During the rest years, plant vigor would be provided for as well as all plants completing their reproductive cycle.

This alternative also provides partial deferment 1 out of 4 years in the South Pasture and 3 out of 4 years in the Ward Pasture. During the years of partial deferment, most desirable forage plants would complete their reproductive cycle.

This alternative would provide for watershed function of uplands and accomplish the allotment-specific objectives for upland vegetation. Having three pastures allows for more flexibility in adaptive rotational grazing to attain the allotment-specific objectives.

b. To Riparian and Wetland Areas

As with the proposed action, Stonehouse Creek and Little Stonehouse Creek would be excluded from grazing with impacts being as described under the proposed action. The impacts of the exclosure fence of Alternatives A and B would be as described under the proposed action.

Under this alternative, Riddle Creek would be in a riparian pasture which would have 2 years of early grazing (general season June 8 to July 15) and 2 years of rest from grazing. This management would allow deciduous woody plants to establish where potential exists and allow the release of plants dwarfed by late season grazing. It would also provide for increased hydric herbaceous species in those portions of the riparian community lacking these species. This management would promote bank stability and provide for a proper functioning stream. The duration of use would be approximately 5 to 6 weeks during the general season of use. The recovery of the stream would be as described under the proposed action, except this management allows grazing and is dependent on human management of livestock and the proposed action depends on structures (fencing) to exclude use.

The management of the Riddle Creek wetland meadows would be as described above. This would provide rest 2 years out of 4 and early use the other 2 years. This management would provide for rapid improvement of the Riddle Creek wetland meadows. During early use, duration of use would be approximately 5 to 6 weeks when the uplands are most palatable. Much of the use would be on upland plant species. During the 2 years these meadows would be grazed, the meadows would have adequate moisture (most years) to allow hydric species that are grazed to regrow, complete their reproductive cycle, and provide adequate cover for watershed functionality and dependent wildlife cover.

Paddle Meadows (Deep Creek), which would be located in the South Pasture, would be grazed 2 years early, 1-year late, and 1-year out of 4 rested. This management would provide opportunity in 3 out of 4 years for hydric species to complete the reproductive cycle. The management of meadows under this alternative would provide for upward trend with 10+ percent increase in hydric species composition as outlined in allotment-specific objectives.

c. To Hydrology/Water Quality/Air Quality

The impacts to hydrology, water quality, and air quality would be as described under the proposed action.

d. To Wildlife and Fisheries

Impacts to wildlife and fish of the reintroduction of fire, water developments, pipelines, fencing, and exclusion of livestock in the Stonehouse Canyon area would be as described for the proposed action. The management outlined in this alternative would provide improved upland habitat conditions in the South and Riddle Creek Pastures. The incorporation of rest from grazing into management of all pastures would ensure improved upland habitat with adequate forage and cover.

The Ward Pasture would have late grazing 3 out of 4 years and would be rested 1-year out of 4. If utilization levels exceed moderate, or dietary preference of cattle increases use of browse, there is potential for habitat conflicts with deer, elk, small mammals, and birds within this pasture.

The wetland meadows would improve as described for the proposed action. This alternative would provide rest from livestock grazing 1-year out of 4 on Paddle Meadows, which would provide additional opportunities for hydric species recovery and for overall improvement of the meadows.

The Riddle Creek Meadows would have 2 years out of 4 years of rest from grazing and early season grazing the other 2 years. This management would assure achievement of standards for rangeland health and accomplishment of allotment-specific objectives. This would accelerate the habitat improvements outlined in the proposed action for all wetland meadows.

The improvements outlined for riparian vegetation communities and bank stability outlined in the proposed action would be attained at a similar rate under this alternative.

The enhanced fish habitat characteristics including rootwad and root mass cover, overhanging vegetation cover, terrestrial and aquatic insect production, increased frequency of undercut banks and pool habitat also would be obtained under this alternative. Water temperatures may also lower with less possibility of silt in spawning gravel. Although this alternative has the potential for as rapid recovery of fishery habitat as the proposed action (livestock exclusion), there is more potential for human error which could slow the recovery process.

e. To Wilderness and Recreation Values

Impacts to wilderness/recreation would be as described under both alternatives of the proposed action except with less fence being constructed. The exclosure fence along Riddle Creek would not be constructed. The impacts to the overall naturalness of the area will not be as great as described in both alternatives of the proposed action.

f. To Visual Resource Management

Impacts to VRM will be as described under both alternatives of the proposed action except that less fence is being proposed to be constructed under this alternative. There would be no long corridor exclosure constructed along Riddle Creek.

As a result of having less fence developed, impacts to the visual resources would be less than described in both alternatives of the proposed action.

g. To Cultural Resources

Impacts to cultural resources would be as described under the proposed action.

2. Mitigating Measures

The following mitigating measures outlined under the proposed action would be applicable under this Alternative: a, b, d, e, and f. In addition, the mitigating measures listed below would also be required:

a. After one grazing cycle (4 years) as outlined under this alternative, rangeland monitoring studies would be formally evaluated. At this time, adjustments necessary to meet objectives that were not made under yearly review would be implemented. This would be done through cooperation and consultation with the grazing permittee. If changes needed to reach objectives cannot be attained through agreement, a formal decision would be issued.

b. Utilization limits of upland key forage grasses of 50 percent and 50 percent on key browse species within the Ward Pasture would be implemented for late season grazing within this pasture.

3. The cumulative impacts would be as outlined for the proposed action.

4. There are no residual impacts identified for this alternative.

C. Alternative II - Early Season of Use Change (June 1 to July 15)

1. Anticipated Impacts

a. To Vegetation (Uplands)

The impacts from the reintroduction of fire, water developments with the pipelines and troughs would be as described under the proposed action. There would be no fencing in this alternative except the temporary fencing for aspen stands.

The increased numbers of livestock and the shortened early season of use would provide for improved distribution of animals within the uplands. This season of use would promote upland grazing use because upland grasses are generally more palatable than riparian or wetlands hydric species during early season. Additionally, the shortened season of use from 10 to 12 weeks to 6 weeks would decrease the frequency of repeat defoliation from grazing, allowing some of the grazed plants opportunity for regrowth. At this time, upland forage species are actively growing prior to seed ripe (July 30 to August 15) so plants are highly palatable. Also, this is typically prior to maximum daily temperatures when livestock tend to spend more time grazing and shading in the riparian communities and wetlands. Grazing each year would be during critical growth for upland grasses and forbs, with no opportunity for rest. This would result in declining upland range condition over time. It is anticipated that increased grazing pressure would occur in Stonehouse Canyon which would increase utilization on the lower portions of the canyon. Animals would tend to concentrate in these areas during early season storms and as the season progressed. This would result in declining range condition in these areas.

b. To Riparian and Wetland Areas

The riparian and wetland plant communities would improve as outlined for the proposed action and Alternative I. However, with the larger numbers of animals, bank shearing may occur on some stream reaches.

The reaches of Stonehouse and Little Stonehouse Creeks currently impacted by livestock would still be impacted under this alternative. The increased numbers of cattle within Stonehouse Canyon may impact additional reaches of these streams. When cattle enter the canyon from the upper portions of the allotment, they seldom trail back up because of the steepness of slope. This would require increased livestock management to maintain the current riparian condition on these streams.

c. To Hydrology/Water Quality/Air Quality

The increased utilization levels during critical growth periods for upland plants, with no periodic rest, would cause upland plant communities to decline in health. This could reduce vegetation and ground cover; thereby increasing the potential for accelerated erosion. This would have a negative impact on water quality, particularly turbidity. However, improved riparian and wetland conditions would increase the possibility of achievement of water quality objectives as outlined in the proposed action and Alternative I.

The impacts to air quality would be as described in the proposed action.

d. To Wildlife and Fisheries

The effects from reintroduction of fire, water developments, and pipelines would be as described for the proposed action and Alternative I. There would be no new fencing under this alternative, which would eliminate any possible hazards of additional fencing to wildlife. The impacts described for upland vegetation such as reduced vegetative cover and ground cover and accelerated erosion would have negative impacts on habitat for deer, elk, bighorn sheep, antelope, sage grouse, small mammals, and species of songbirds.

Riddle Creek has the only fishery in the Stonehouse Allotment. Habitat for redband trout should improve at a similar or slower rate, as described for the proposed action and Alternative I.

However, there is potential for increased siltation from upland erosion which would negatively impact this fish. There are also possible impacts from hoof action, mainly bank shearing, which would reduce the percentage of overhanging banks and reduce bank stability.

e. To Wilderness and Recreation Values

Under this alternative no fences would be constructed within WSAs so there would be no direct impacts to the naturalness of the area from fencing. However, without fencing there are possible impacts to ecological values and naturalness as the upland vegetation communities decline in condition. There are also potential impacts to some reaches of Stonehouse and Little Stonehouse Creeks under this alternative. The main access to the area for the wilderness/recreational visitor is the Stonehouse Canyon Road. Little change would occur in the riparian condition which would impact naturalness and the quality of the wilderness/recreational experience.

f. To Visual Resource Management

As a result of no fencing under this alternative, a slight impact to the overall visual quality to the upland vegetation may occur.

Due to a concentration of livestock use, most impacts to the visual quality are expected to occur along the reaches of Stonehouse and Little Stonehouse Canyons. The wilderness/recreational user would be impacted as a result of the concentration of livestock within the area, along with the decline of visual quality as a result of no improvement in vegetation. However, as a whole, the overall scenic quality of the area would be maintained.

g. To Cultural Resources

Same as described for the proposed action and Alternative I.

2. Mitigating Measures

Mitigating Measures a and b of the proposed action would be included in this alternative.

3. Cumulative Impacts

The cumulative impacts of this alternative would be to not achieve some of the allotment-specific objectives as outlined below.

This alternative may not increase bank stability by 10+ percent on Riddle Creek. It would not improve the lower reach of Stonehouse Creek. Uplands would not be managed so that forage, water, cover, structure, and security necessary for wildlife are available on public land. Habitat for Special Status species such as bighorn sheep and sage grouse may not be maintained. This alternative may not have potential of moving toward achieving State water quality standards. This may have a negative impact on the redband trout fishery.

If bank stability is not improved along reaches of Riddle Creek, increased silt content in the substrate of the stream may have a negative impact on redband trout redds. Poor bank stability also hinders the stream's ability to decrease the width:depth ratio, to increase sinuosity, and to form a functional floodplain.

The grazing management outlined in this alternative would provide for accomplishment of objectives identified for the wetland meadows. The riparian vegetation objectives on Riddle, Stonehouse, and Little Stonehouse may be accomplished. Bank stability and channel recovery objectives may not be accomplished or accomplished at a slower rate than the other alternatives.

Grazing management of the uplands would be continuous seasonal during critical growth periods which, as described above, would not accomplish the objectives for uplands.

This alternative would not conform to the Guidelines for Livestock Management for Public Lands Administered by the BLM in the States of Oregon and Washington. Specifically Guidelines 1 and 6.

The grazing management outlined in this alternative would also not achieve and/or maintain the Standards for Rangeland Health for Public Lands Administered by BLM in the States of Oregon and Washington. These standards are:

1. Watershed Function - Uplands

4. Water Quality

5. Native, Special Status, and Locally Important Species: redband trout, sage grouse, deer, and elk

4. Residual Impacts

Residual impacts would primarily be seen through the reintroduction of fire creating a mosaic of seral stages of plant communities which would provide for a diversity of plant species, plant communities, and structure. This would provide for watershed function and habitat for dependent wildlife species. The grazing management outlined in this alternative would not allow maintenance of the upland vegetation communities following the reintroduction of fire and would result in at-risk watershed function and habitat diversity.

D. Alternative III - No Action

1. Anticipated Impacts

a. To Vegetation (Uplands)

The allotment evaluation completed in 1999 determined that watershed functionality was at-risk due to plant composition, plant community structure, and lack of direct ground cover within the mountain sagebrush-bunchgrass plant communities. These communities also had slight accelerated erosion. Livestock were determined not to be a causal factor. The causal factor was determined to be fire exclusion from a fire-dependent ecosystem.

The low sagebrush-bunchgrass plant communities were functioning, with structural and species diversity which provides adequate ground cover to protect the soil surface. Without the reintroduction of fire, the mountain sagebrush-bunchgrass communities would increase in bare ground and decrease in herbaceous plant cover. Species diversity would possibly decline. The loss of ground cover, species, and structural diversity may result in a nonfunctioning watershed which provides limited habitat for dependent wildlife species.

b. To Riparian and Wetland Areas

Riddle Creek, within Stonehouse Allotment, is determined to be functioning at-risk. Plant composition, plant community structure, point bars not revegetating, channel width:depth ratio, and channel sinuosity were determined to be below potential for this type of stream. The percentage of unstable streambanks also exceeded what would be expected for a proper functioning stream of this channel type. Current livestock management was determined to be a causal factor.

Stonehouse and Little Stonehouse Creeks are properly functioning with the lower .20-mile having bank stability and hydric species vegetation cover below potential. Livestock was determined to be a causal factor.

Plant composition in Paddle Meadows and Riddle Creek Meadows have a reduced percentage of composition of hydric species and expressions of more xeric communities with some accelerated erosion. These meadows are functioning at-risk with livestock determined to be a causal factor,

Under current management, improvement to the riparian and possibly wetlands would be minimal, leading to further decline in watershed function.

c. To Hydrology/Water Quality/Air Quality

Water quality is unknown on Stonehouse Creek and Little Stonehouse Creek and their tributaries. Riddle Creek does not meet the State standard for water quality due to water temperatures being greater than 17.8 °C for a 7-day rolling average. As a result of these temperatures, this stream is on the State 303d list of water quality limited streams. Livestock are determined to be a causal factor in the limiting of water quality according to the 1999 Stonehouse Allotment evaluation. Water temperatures are not expected to improve under current livestock management.

There would be no impacts to air quality under the no action alternative.

d. To Wildlife and Fisheries

Current utilization from livestock in Riddle Creek riparian communities, Riddle Creek Meadows, and Paddle Meadows is continuous seasonal at a level that does not allow palatable plants regrowth or to complete their reproductive cycle. This type of use facilitates a more xeric plant community and allows less than 3 inches of standing vegetation. All of these factors provide unsatisfactory habitat conditions for most dependent wildlife species.

The 1999 allotment evaluation determined that Riddle Creek redband fishery habitat is unsatisfactory due to high water temperatures. Also indirect indicators of unsatisfactory habitat identified in this evaluation are riparian plant community structure, lack of hydric species cover, unstable banks and mechanical bank damage. These conditions would not be expected to improve under current management.

e. To Wilderness and Recreation Values

There are no direct impacts to the naturalness of the area because no new human-made developments would be constructed. However, impacts to the ecological values under the current management would result in the loss of plant community diversity within areas where fire is being excluded from the landscape. Ecological values in the lower reaches of Stonehouse and Little Stonehouse Creeks would continue to be impacted. These areas are lacking some herbaceous hydric species and have bank instability higher than potential for the stream reaches. Also Paddle Meadows lacks hydric plant species diversity and habitat requirements for dependent wildlife species. These impacts to the ecological values have a negative impact on the overall naturalness of the area.

f. To Visual Resource Management

The scenic quality of the area would remain static as a result of this alternative and the continued current management within the area.

g. To Cultural Resources

There is no known impact to cultural resources.

2. Mitigating Measures

There are no mitigating measures for the no action alternative.

3. Cumulative Impacts

The 1999 allotment evaluation identifies that current livestock management is not in conformance with Oregon and Washington guidelines for livestock management on public lands, specifically Guidelines 1 and 6. This evaluation further identifies nonachievement of the Standards for Rangeland Health of which Standard 2 - Watershed Function Riparian/Wetland Areas; Standard 4 - Water Quality; and Standard 5 - Native, Special Status and Locally Important Species (redband trout). The evaluation determined that current livestock management is a causal factor. Also, Standard 3 - Ecological Processes is functionally at-risk and livestock may be a causal factor.

Furthermore, allotment-specific objectives for water resources riparian/wetlands, wildlife and wildlife habitat, fish and aquatic, native, Special Status, and locally important species (redband trout) and to prevent accelerated erosion will not be accomplished without changes in livestock management.

4. Residual Impacts

The residual impacts under current management are upland plant communities which lack species, structural, and habitat diversity. Riddle Creek is functioning at-risk and providing inadequate habitat for redband trout. Wetland meadows are functioning at-risk due to increased xeric plant species, lacking hydric plant species cover and diminished structural diversity. These plant community conditions do not provide for any proper hydrologic function or adequate cover and forage for wildlife species.

VI. CONSULTATION AND COORDINATION

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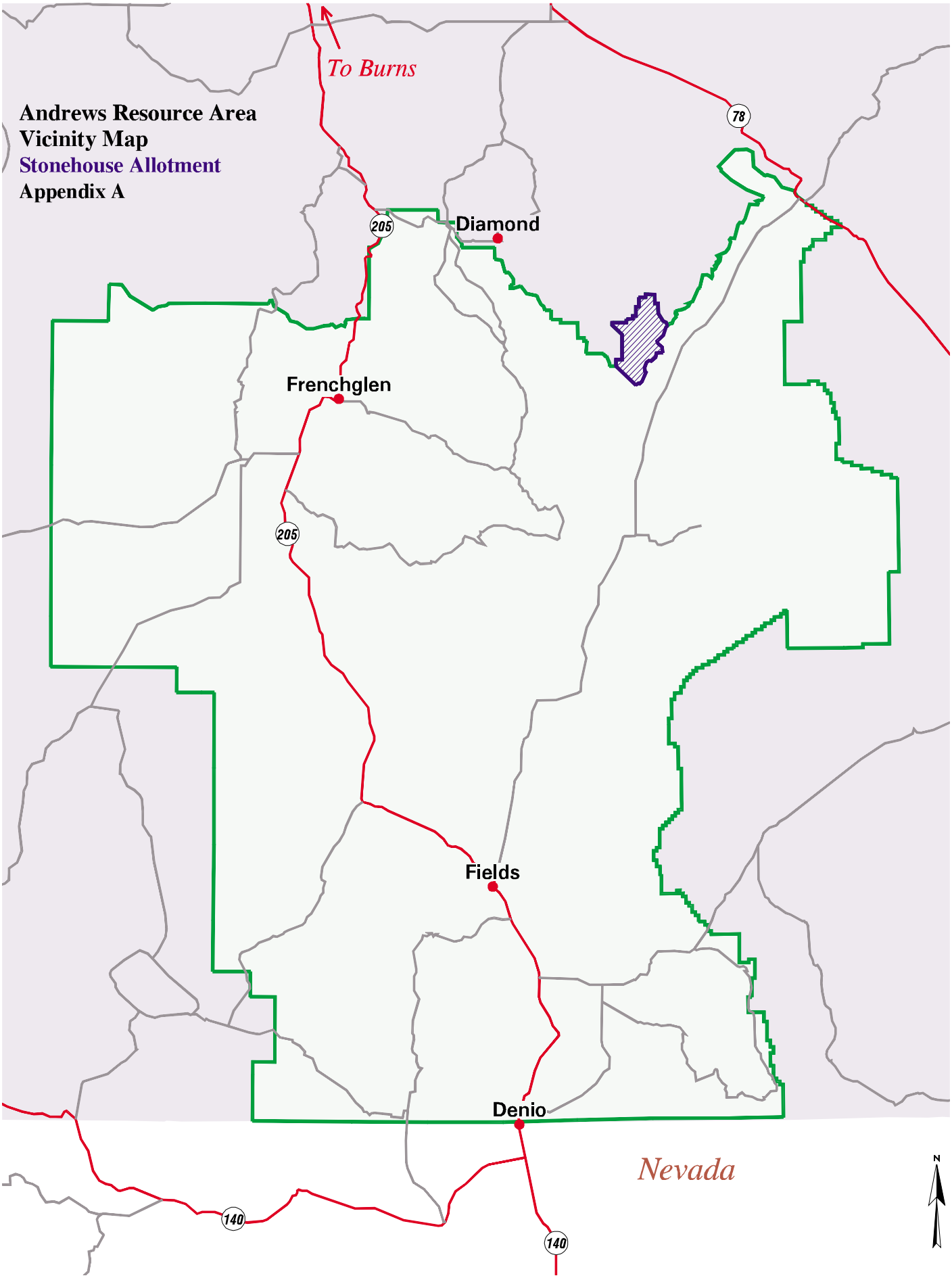
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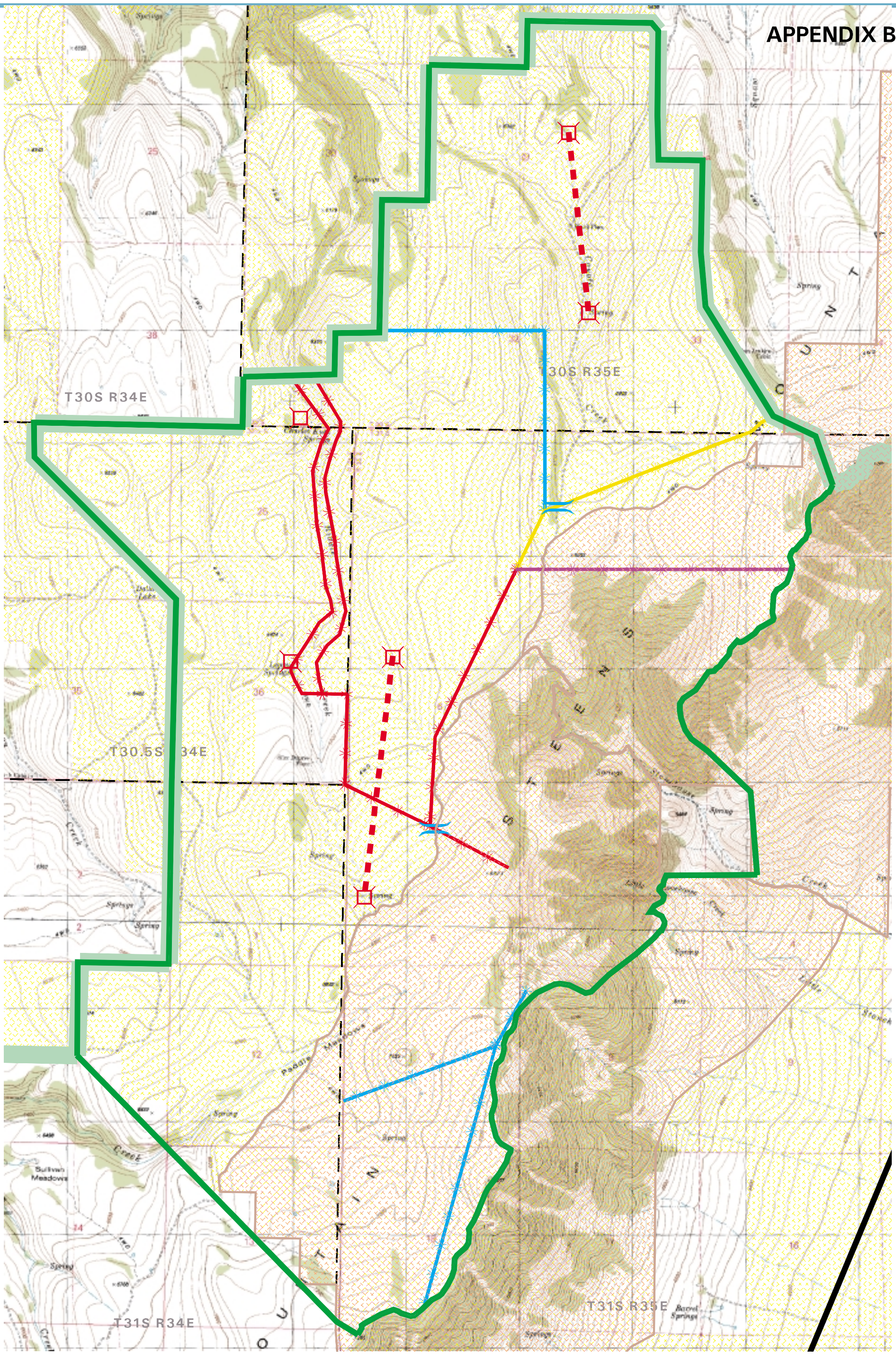
APPENDIX B



Proposed Alternative - 2 pastures

- Allotment 6040 Boundary
- Resource Area Boundary
- Proposed Action
- Proposed Remove Fences
- Alternative A
- Alternative B
- Proposed Structural Improvement - Pipeline

- BLM Lands
- Private Land - not shaded
- Wilderness Study Areas

- Proposed Structural Improvement - Trough
- Proposed Structural Improvement - Cattle Guard

1.8974 miles fence to be removed OUT of WSA

2.7113 miles fence to be removed IN of WSA

US DEPARTMENT OF THE INTERIOR
Bureau of Land Management
Burns District, Oregon

Date: 03-MAY-2000
$BURN/stonehouse/fencepaweb.aml
Burns BLM GIS, Kelly Hazen

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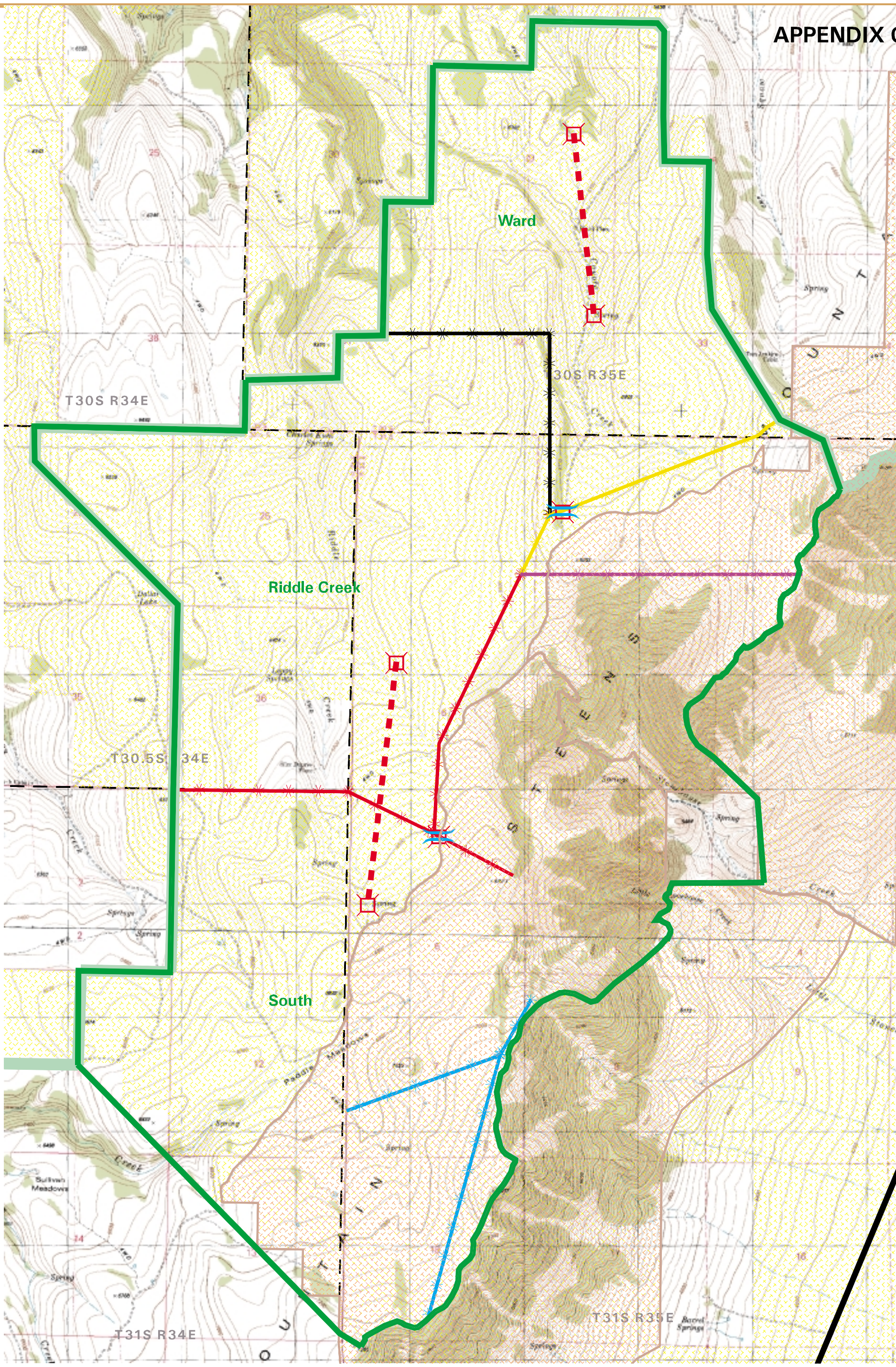
APPENDIX C



Alternative 1 - 3 pastures

- Allotment 6040 Boundary
- Resource Area Boundary
- Alternative 1
- Existing Fence
- Existing fence to be removed
- Alternative A
- Alternative B
- Proposed Structural Improvement - Pipeline
- BLM Lands
- Private Land - not shaded
- Wilderness Study Areas
- Proposed Structural Improvement - Trough
- Proposed Structural Improvement - Cattle Guard

Alternative A 1.5317 miles fence in WSA

2.7113 miles fence to be removed IN of WSA

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Burns District, Oregon

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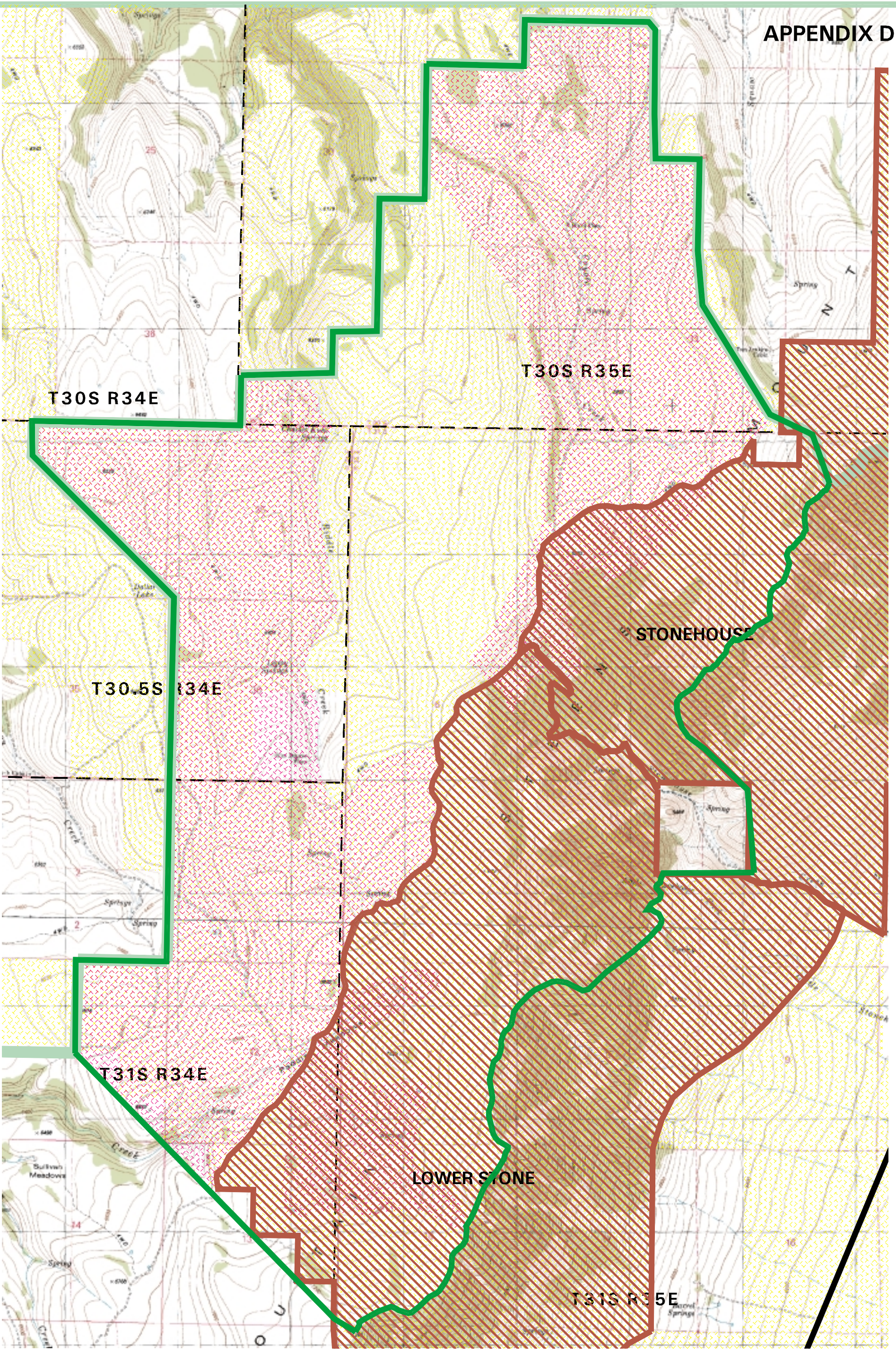
APPENDIX D



Proposed Prescribed Burn Boundaries

- Range and Townships
- Allotment 6040 Boundary
- Major Roads
- Resource Area Boundary
- Wilderness Study Area Boundary

- BLM Lands
- Private Land - not shaded
- Wilderness Study Areas
- Proposed Presprbed Burn Area In Andrews Resource Area

US DEPARTMENT OF THE INTERIOR
Bureau of Land Management
Burns District, Oregon

Date: 03-MAY-2000
$BURN/stonehouse/pipelineweb.aml
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APPENDIX E

Allotment Evaluation Results

In April 1999, a formal evaluation of the Stonehouse Allotment was completed by an Andrews Resource Area ID Team which included summary, analysis, and interpretation of all available rangeland monitoring. A summary of data from this evaluation is as follows:

Key plant species with target utilization are as follows:

Key Species	Utilization Target
Idaho fescue	50%
Nebraska sedge	45%
Baltic rush	45%
Kentucky bluegrass	50%

In 1983 and 1984, an Ecological Site Inventory (ESI) was completed for the allotment which identified ecological status as:

Ecological Status	Acres
Early seral	0
Late seral	4,085
Mid-seral	5,913
Potential natural community	0
Not rated	393

This inventory did not identify the wetlands or riparian ecological sites, which were mapped as inclusions with uplands sites. There is no current assessment of range condition.

Average actual use for livestock for the years 1993 to 1998 was 1,667 AUMs and in 1992 the allotment was rested. The current permitted use is 2,117 AUMs. The potential livestock stocking level as calculated based on 1993 to 1998 monitoring data is 2,285 AUMs. Average utilization during this period (1993 to 1998) was 32 percent for uplands and 71 percent for riparian and wetlands. This monitoring period evaluated had above average precipitation except for 1994 which lacked moisture during the growing season. Rangeland trend is stable on the uplands and the meadows. The meadows (approximately 700 acres) are mid-seral ecological status with hydric species representing 36 percent of the composition (by frequency of occurrence) which in a later seral stage 60 percent + of hydric species would be expected on these wetland meadows. Ground cover is adequate to ensure stability of the site, however, the effective capture and release of water in these headwater meadows is not near its potential.

There are no monitoring sites which represent the deep loamy subalpine slopes, loamy 16 to 25-inch precipitation, stony loam and swales ecological sites (approximately 5,408 acres) which apparent trend indicates as stable to slightly downward. These ecological sites have juniper encroachment that is stressing mountain sagebrush on some areas, while on other sites the mountain sagebrush communities are mature and decadent, limiting herbaceous understory development.

Most of the low sagebrush gravelly ridge ecological sites are currently near site potential, with a stable trend (approximately 4,085 acres within the allotment).

Riparian functionality is thoroughly discussed in the following section. This evaluation provided the following analysis of the Standards for Rangeland Health developed for Oregon and Washington.

ANALYSIS OF RANGELAND HEALTH STANDARDS AND GUIDELINES FOR LIVESTOCK MANAGEMENT

A. Analysis of Rangeland Health Standards

1. Watershed Function - Uplands

This standard was achieved, however, the watershed's functionality is at-risk due to plant composition, community structure, and lack of direct ground cover on the deep loamy subalpine slopes, stony loam and swale ecological sites. The current livestock grazing practices are determined not to be a causal factor. The causal factors were determined to be disruption of the historical fire frequency which provides for juniper invasion and woody species dominance of these ecological sites. Historical livestock grazing was a contributing factor to this process.

a. The indicators used on deep loamy subalpine slopes, stony loam and swale ecological sites:

1) No recruitment of seedlings or young plants.

2) Shrub and tree dominated communities are losing herbaceous species.

3) Existing herbaceous species exhibit poor vigor.

4) The mountain sagebrush overstory is decadent and the density of young juniper is increasing.

5) There is a lack of litter and ground cover to protect the soil surface.

6) Slight accelerated erosion is occurring.

b. The indicators used on mountain gravelly ridge ecological sites.

1) The mountain gravelly ridges' ecological sites have plant composition and community structure that provides for functional uplands.

2) No upland accelerated erosion was detected on the mountain gravelly ridges' ecological site.

3) The amount and distribution of plant cover protects the soil surface.

4) There is adequate plant litter and residual cover to protect soil surface and to provide for nutrient cycling.

5) The current communities on these sites provide for nutrient cycling.

2. Watershed Function - Riparian/Wetland Areas

This standard was not achieved for all lentic or lotic systems. The current livestock grazing practices are determined to be a causal factor.

a. The indicators used are:

On Riddle Creek:

1) Some point bars are not revegetating.

2) Low channel width:depth ratio.

3) Low channel sinuosity.

d. Active floodplain is limited or not accessible by average flood events.

e. Lack of young willow age class.

On Wetland Meadows:

1) Lack of hydric species in the plant composition.

2) Encroachment of xeric species into the meadows.

3) Soil hummocking and vertical denuded cuts on portions of the meadows.

3. Ecological Processes

These processes are achieved but are functioning at-risk. The current livestock grazing practices may be a causal factor.

a. The indicators used are:

1) Existing plant composition.

2) Plant community structure.

3) Plant species diversity. This is on mountain sagebrush ecological sites. The decline of these indicators are due to a fire-dependent ecosystem in which fire has been removed through grazing practices (removal of fine fuels changing fire frequency) and fire suppression practices. This is also true on portions of the wet meadows within the Stonehouse Allotment.

4. Water Quality

The water temperature standard is not achieved on Riddle Creek and the water temperature is unknown on Stonehouse and Little Stonehouse Creeks and their tributaries. The current livestock grazing practices are determined to be a causal factor.

a. The indicators used are:

1) Water temperature greater than 17.8 °C during a 7-day rolling average of the maximum water temperatures.

5. Native, Special Status, and Locally Important Species

The standard is not achieved for redband trout. The current livestock grazing practices are determined to be a causal factor.

a. The indicators used are:

1) High water temperature.

2) Bank instability.

3) Riparian plant species composition lacking hydric species.

4) Lack of deciduous woody species for shading.

B. Conformance with Guidelines

The evaluation further determined that current management is not in conformance with the guidelines for livestock grazing management on public lands in Oregon and Washington, specifically Guidelines 1 and 6 as explained below:

1. The season, timing, frequency, duration, and intensity of livestock grazing are not based on the physical and biological characteristics of the site and management unit.

6. Current management does not provide periodic rest from grazing for rangeland vegetation during critical growth periods to promote plant vigor, reproduction, and productivity.

APPENDIX F

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