

**UNITED STATES  
DEPARTMENT OF THE INTERIOR  
Bureau of Land Management  
Burns District Office  
Three Rivers Resource Area  
Finding of No Significant Impact**

**December 23, 2009  
Environmental Assessment  
DOI-BLM-OR-025-2009-0076-EA**

## **INTRODUCTION**

Three Rivers Resource Area, Burns District Bureau of Land Management, has prepared an Environmental Assessment (EA) to analyze the potential effects of a permittee's proposed partial livestock kind conversion of approximately 336 Animal Unit Months (AUMs) from cattle to sheep use within Skull Creek Allotment. Skull Creek Allotment is located 5 miles north of Burns, Oregon. Skull Creek Allotment consists of three pastures: Early Turnout, Boulder Springs, and Lake Creek with a total of 26,672 public land acres. Livestock use occurs from approximately April 21 to June 10 during the graze year (March 1 to February 28).

## **SUMMARY OF THE PROPOSED ACTION**

The Proposed Action is to allow sheep grazing for permit number 3600126 and a 10-year permit would be issued. Of the 571 AUMs permitted for cattle use, 235 AUMs would be made available for cattle under actual use and 336 AUMs for sheep. A full-time sheepherder would be required. If sheep do not graze, all 571 AUMs would be made available to cattle. This proposed conversion would not increase permitted AUMs in Skull Creek Allotment. Herding would be a key component in the success of sheep grazing management within the allotment to improve livestock distribution. Any supplemental feed used on public lands for horses or any livestock must be weed free.

Conversion of livestock kind from cattle to sheep would be allowed on a *1 cattle AUM: 5 sheep AUM* basis. One cow/calf pair is the equivalent to five sheep for the purpose of calculating AUMs (43 CFR 4130.8-1(c)). Grazing use dates and treatment would follow the 1999 Skull Creek Allotment Management Plan (AMP). The current AMP can be found in the Skull Creek Allotment file.

## **FINDING OF NO SIGNIFICANT IMPACT**

Consideration of the Council on Environmental Quality (CEQ) criteria for significance (40 CFR 1508.27), both with regard to context and intensity of impacts, is described below:

## Context

The Proposed Action would occur in Skull Creek Allotment and would have local impacts on affected interests, lands, and resources similar to and within the scope of those described and considered in the Three Rivers Proposed Resource Management Plan/Final Environmental Impact Statement (PRMP/FEIS). There would be no substantial broad societal or regional impacts not previously considered in the PRMP/FEIS. The actions described represent anticipated program adjustments complying with the Three Rivers RMP/Record of Decision (ROD), and implementing a change in livestock kind is within the scope and context of this document.

## Intensity

The CEQ's ten considerations for evaluating intensity (severity of effect):

1. *Impacts that may be both beneficial and adverse.* The EA considered potential beneficial and adverse effects. None of the effects are beyond the range of effects analyzed in the Three Rivers PRMP/FEIS, to which the EA is tiered.

Wetlands, Riparian Zones, Water Quality, and Fisheries: Herded sheep would spend less time in riparian zones and are prohibited from camping in these zones (term and condition of permit); therefore, sheep would utilize less of the key riparian species. Lower utilization would aid in streambank stabilization and reaching proper functioning condition.

Upland Vegetation: There would be more even utilization throughout Skull Creek Allotment, especially in areas historically grazed less intensively by cattle. The overall use patterns in the allotment would be more uniform when sheep are used. Reoccurring sheep grazing on forbs in Early Turnout Pasture could result in a decline in production of early developed forbs.

Noxious Weeds and Invasive Nonnative Plant Species: Sheep have a high preference for forbs, including many noxious weeds and would be inclined to consume them, especially in the springtime. Weed spread would be minimized as weeds would be consumed prior to seed development.

Livestock Grazing Management: Sheep grazing management would achieve more even utilization patterns in Boulder Springs and Lake Creek Pastures. Sheep would be herded the entire time they were on the allotment. They would be directed into areas receiving lighter cattle use, out of riparian areas, and into areas where sheep grazing preferences would help maintain or achieve desired vegetative conditions.

Wildlife: Wildlife not disturbed or displaced by cattle or sheep may be affected by continual presence of shepherds and dogs. All big game would likely avoid the area until sheep and shepherds are no longer in the adjacent area or pasture. Smaller, less vagile wildlife species may remain in close proximity to the flock, but avoid the area of disturbance near or around the flock. Forb and browse use during this time would overlap more with mule deer and pronghorn diets, and reductions in perennial forb cover may negatively affect their use of the allotment. Limiting time spent in areas and alternating rest of pastures is expected to maintain adequate forbs and other forage for pronghorn, mule deer and other wildlife.

Migratory Birds: Migratory birds not already disturbed or displaced by cattle or sheep, may be affected by continual presence of shepherds and dogs. Birds have different tolerances and flush distances depending on species affected and type of disturbance. Trampling risk would increase due to higher numbers of animals grazing (5:1 ratio for sheep to cow conversion). Limiting time spent in areas and alternating rest of pastures is expected to maintain adequate herbaceous and shrub cover for migratory birds and their prey.

Special Status Species: Skull Creek Allotment supports populations of special status species. The three pastures directly affected by the proposed conversion from cattle to sheep contain potential habitat for sage-grouse. Reductions in forbs may impact forage availability for sage-grouse hens and chicks through reduced forb cover and reduced insect production. Lake Creek and Boulder Spring Pastures would receive rest every other year, providing complete growing season rest and minimizing potential impacts on forbs and browse. Early Turnout Pasture is scheduled to be grazed early in the spring every year, which may affect availability of early growing forbs. Reductions in forbs may impact forage availability for sage-grouse hens and chicks through reduced forb cover.

Soils and Biological Crusts: Control of sheep distribution through herding would potentially reduce impacts to soil resources. Fewer cattle would be permitted, reducing compaction and other impacts by herbivory in current high use areas and allowing for recovery in areas previously experiencing spring use.

Recreation and Visual Resources: No changes to the types of recreation opportunities present in the project area would occur.

Social and Economic Values: Sheep grazing in combination with cattle grazing would provide for more even utilization patterns, which could maintain or increase forage quality and production for livestock and wildlife. Providing for sustainable grazing management that improves habitat conditions for wildlife would in turn increase economic opportunities and foster more desirable social opportunities such as hunting.

American Indian Traditional Practices: Nearly all of the target species used by the Burns Paiute people for medicine or food are forbs and would be affected to a greater extent by sheep grazing than cattle grazing. The rest-rotation for Boulder Springs and Lake Creek Pastures would provide an area for forb collection, while Early Turnout Pasture would be grazed at the beginning of the growing season. The early and short duration grazing use in Early Turnout Pasture should provide years (early versus late springs) of opportunity for forb growth and production.

2. *The degree to which the Proposed Action affects public health or safety.* No aspect of the Proposed Action or alternatives would have an effect on public health and safety.
3. *Unique characteristics of the geographic area such as proximity to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas.* There are no unique characteristics of the geographic area such as proximity to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas.
4. *The degree to which effects on the quality of the human environment are likely to be highly controversial.* Controversy in this context means disagreement about the nature of the effects, not expressions of opposition to the Proposed Action or preference among the alternatives. No unique or appreciable scientific controversy has been identified regarding the effects of the Proposed Action or alternatives.
5. *Degree to which possible effects on the human environment are highly uncertain or involve unique or unknown risks.* The analysis has not shown there would be any unique or unknown risks to the human environment nor were any identified in the Three Rivers PRMP/FEIS to which this proposal is tiered.
6. *Degree to which the action may establish a precedent for future actions with significant impacts or represents a decision in principle about a future consideration.* This project neither establishes a precedent nor represents a decision in principle about future actions.
7. *Whether the action is related to other actions with individually insignificant but cumulatively significant impacts.* The environmental analysis did not reveal any cumulative effects beyond those already analyzed in the Three Rivers PRMP/FEIS which encompasses Skull Creek Allotment. The EA described the current state of the environment (Affected Environment by resource, Chapter III) which included the effects of past actions. Continued livestock grazing, recreation activities including fishing and hunting, and the Slicear/Claw Creek Forest Restoration Project (EA OR-025-08-017) are known Reasonably Foreseeable Future Actions. Slicear/Claw Creek Forest Restoration Project will utilize various methods of prescribed fire and mechanical treatments to reduce western juniper and ponderosa pine densities in four dominant vegetative communities: forest areas (ponderosa pine stands), low/stiff sagebrush flats, mountain big sagebrush-bunchgrasses communities, and aspen stands. Mountain mahogany and bitterbrush communities are lumped in as inclusions with the mountain big sagebrush and ponderosa pine plant communities.

8. *Degree to which the action may adversely affect districts, sites, highways, structures or objects listed in or eligible for listing in the National Register of Historic Places.* There are no features within the project area listed or eligible for listing in the National Register of Historic Places.
9. *The degree to which the action may adversely affect a threatened or endangered species or its habitat.* There are no known threatened or endangered species or their habitat affected by the Proposed Action or alternatives (*or No Action Alternative*).
10. *Whether an action threatens a violation of Federal, State, or local law or requirements imposed for the protection of the environment.* The Proposed Action and alternatives do not threaten to violate any law. The Proposed Action is in compliance with the Three Rivers RMP, which provides direction for the protection of the environment on public lands.

On the basis of the information contained in the EA and all other information available to me, it is my determination that:

1. The implementation of the Proposed Action or alternatives will not have significant environmental impacts beyond those already addressed in the Three Rivers PRMP/FEIS (*September 1991*);
2. The Proposed Action and alternatives are in conformance with the Three Rivers RMP/ROD;
3. There would be no adverse societal or regional impacts and no adverse impacts to affected interests; and
4. The environmental effects against the tests of significance found at 40 CFR 1508.27 do not constitute a major Federal action having a significant effect on the human environment.

Therefore, an EIS is not necessary and will not be prepared.

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Richard Roy  
Three Rivers Resource Area Field Manager

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Date

SKULL CREEK  
ALLOTMENT LIVESTOCK  
KIND CONVERSION

ENVIRONMENTAL ASSESSMENT  
DOI-BLM-OR-025-2009-0076-EA

January 29, 2010

Bureau of Land Management  
Burns District Office  
28910 Hwy 20 West  
Hines, Oregon 97738

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Livestock Kind Conversion  
Environmental Assessment  
Harney County, Oregon  
DOI-BLM-OR-025-2009-0076-EA

CHAPTER I: INTRODUCTION; PURPOSE OF AND NEED FOR ACTION

A. Introduction

This Environmental Assessment (EA) analyzes the potential effects of a permittee's proposed livestock kind conversion of approximately 336 Animal Unit Months (AUMs) from cattle to sheep use within Skull Creek Allotment.

Skull Creek Allotment is located 5 miles north of Burns, Oregon (Map A). Within the allotment, 27,525 acres are Bureau of Land Management (BLM)-administered land and 368 acres are Forest Service-administered land. Three pastures are analyzed in this EA that include 26,672 acres of public land (Map B). Four term permits currently authorize a total of 1,959 AUMs of cattle use. The Boulder Springs and Lake Creek Pastures are managed under a rest-rotation system, with use occurring from approximately May 1 to June 10 during the graze year (March 1 to February 28). The Early Turnout Pasture is used every year from April 20 to May 5. All authorized livestock grazing is currently by cattle. Other forage allocations include 386 AUMs for wildlife. Skull Creek flows through 2.9 miles of the allotment.

In 1992, the Three Rivers Resource Management Plan (RMP) (Appendix 9, Pages 142 and 143) defined Skull Creek Allotment as a Management Category "I" (Improve) allotment due to unimproved riparian condition. The "Improve" category identifies allotments with management and resource concerns. These allotments receive priority for implementation, effectiveness, and performance monitoring.

In 2004, BLM formed an Interdisciplinary Team (IDT), which evaluated the objectives from the 1999 Skull Creek Allotment Management Plan (AMP) and published the following findings in the 2004 Allotment Evaluation. It was determined that three of the five Standards and Guidelines (S&Gs) were currently being met in Skull Creek Allotment.

Table 1: Standards for Rangeland Health and Guidelines for Grazing Administration

Standard	Met	Not Met	Livestock Factor	Comments/Actions Taken
1. Watershed Function – Uplands	X		N/A	N/A
2. Watershed Function – Riparian/Wetland Areas	X		N/A	N/A
3. Ecological Processes	X		N/A	N/A
4. Water Quality		X	N/A	Water temperatures exceed Oregon Department of Environmental Quality's (ODEQ's) water temperature standard for salmonid fish rearing.
5. Native, T&E, and Locally Important Species		X Redband Trout	N/A	Water temperatures exceed ODEQ's water temperature standard for salmonid fish rearing. Summer livestock use discontinued in 2004.

Data collected in 2009 indicate Skull Creek riparian conditions have improved with Greenline Stability rated as High, Successional Status rated as Late Seral, and Cross Section Successional Status rated as Potential Natural Community (PNC). Data collected from 2003 to 2009 show riparian vegetation trend has been up. This recent information reflects current conditions and management that has resulted in a shift from riparian and aquatic habitat in less than good habitat condition to riparian and aquatic habitat meeting S&Gs.

The EA would provide the decision maker, the Three Rivers Resource Area Field Manager, with descriptions, analysis, and decision criteria necessary to determine if there are significant impacts not already analyzed in the 1991 Three Rivers Proposed Resource Management Plan/Final Environmental Impact Statement (PRMP/FEIS), and whether or not a Finding of No Significant Impact would be appropriate.

B. Purpose and Need for Action

1. Purpose and Need

The purpose of the action is to authorize a proposal to convert 336 of the 571 permitted AUMs from cattle to sheep in the Skull Creek Allotment for permit number 3600216 and issue a 10-year term permit.

The need for action is the BLM's responsibility to respond in a manner consistent with grazing regulations at 43 Code of Federal Regulations (CFR) 4100, manage the public lands for multiple-use and sustained yield under the Taylor Grazing Act (43 U.S.C 315, 1934), the *Federal Land Policy and Management Act of 1976*, and the *Public Rangelands Improvement Act of 1978*, and the Three Rivers RMP. Livestock grazing is identified as a use of the public land and is to be conducted in a manner which will meet multiple-use and sustained yield objectives.

Specifically, the regulations implementing these Acts call for rangeland management strategies that provide forage for economic use as well as for maintenance or restoration of watershed function, nutrient cycling, water quality, and habitat quality for Special Status Species (SSS) and native plants and animals (43 CFR 4180.1). These management strategies have been supported and implemented by development of national policies and the *Fundamentals of Rangeland Health and Standards and Guidelines for Grazing Administration* (S&Gs).

The selected alternative must also achieve or comply with the Three Rivers RMP direction, including:

- Maintain or improve rangeland condition and productivity through a change in management practices and/or reductions in active use to address the current range condition, level, or pattern of utilization (Appendix 9. Allotment Management Summaries, 1992 RMP Page 142).
- Maintain, restore or enhance the diversity of plant communities and plant species in abundances and distributions, which prevent the loss of specific native plant community types or indigenous plant species (Vegetation Program, 1992 Three Rivers RMP Page 2-51).
- Maintain, restore, or enhance the habitat of sensitive species to maintain the populations at a level that will avoid endangering the species (SSS, Three Rivers RMP 2-57). Currently, sage-grouse and redband trout, or their habitat, are known to exist within the allotment (Appendix 9. Allotment Management Summaries, 1992 RMP Page 142).
- Implement a rotation or deferred grazing system on all allotments within big game ranges (Wildlife Habitat, Three Rivers RMP Page 2-66).
- Adjust overall grazing management practices as necessary to protect SSS and to maintain or enhance their habitat (Wildlife Habitat, Three Rivers RMP Page 2-75).
- Maintain browse on at least 85 percent of the acreage in winter ranges currently supporting browse (Wildlife Habitat, Three Rivers RMP Page 2-76).
- Maintain viable populations of native plants and animals well distributed throughout their geographic range (Biological Diversity, Three Rivers RMP Page 2-200).

- Provide for sustainable livestock grazing that meet allotment management (natural resource) objectives and the Standards for Rangeland Health and Guidelines for Livestock Grazing Management that coincided with the 1999 AMP and the Three Rivers RMP.

2. Decision to be Made

The BLM will decide whether or not to issue a new 10-year grazing permit to allow sheep grazing, and if so, under what terms and conditions.

C. Conformation with Land Use Plans, Laws, Regulations and Policy

The Proposed Action has been designed to conform to the following documents, which direct and provide the framework for management of BLM lands within the Burns District:

- Taylor Grazing Act (43 U.S.C 315, 1934)
- National Environmental Policy Act (42 U.S.C. 4321-4347, 1970)
- Federal Land Policy and Management Act (43 U.S.C. 1701, 1976)
- Public Rangelands Improvement Act (43 U.S.C. 1901, 1978)
- Standards for Rangeland Health and Guidelines for Livestock Grazing Management for Public Lands Administered by the Bureau of Land Management in the States of Oregon and Washington (1997)
- Greater Sage-Grouse and Sagebrush-Steppe Ecosystems Management Guidelines (Interagency - 2000)
- Oregon Department of Fish and Wildlife Greater Sage-Grouse Conservation Assessment and Strategy for Oregon: A Plan to Maintain and Enhance Populations and Habitat (2005)
- Bureau of Land Management National Sage-Grouse Habitat Conservation Strategy (2004)
- Local Integrated Noxious Weed Control Plan (2004)
- Three Rivers Resource Management Plan/Record of Decision (September 1992). Livestock grazing on the Skull Creek Allotment was analyzed in the 1991 EIS and authorized in the RMP. Applicable portions of that analysis are adopted in this EA.
- State, local, and Tribal laws, regulations, and land use plans
- 1999 Skull Creek Allotment Management Plan

D. Issues Considered but not Analyzed Further

The Oregon Natural Desert Association brought up wilderness in response to the draft EA. Wilderness will not be analyzed in this EA for two reasons:

1. In 2007 BLM received a citizens' Proposed Wilderness Study Area (PWSA) "Silvies River proposed WSA." In 2008 BLM did Wilderness Inventory Maintenance (WIM) on this area and determined that wilderness character was not present in the Project Area.

The BLM's 1980 wilderness inventory decision found wilderness character not present on BLM-administered lands within the Skull Creek Allotment. In September 2007, BLM received information for a citizens' PWSA indicating that they had found wilderness character present for a portion of the Project Area.

In August 2008, WIM assessment was completed by a BLM IDT that covered the Project Area. The IDT used current field data along with the citizens' PWSA data and determined that there was no wilderness character present in the Project Area.

The Skull Creek Allotment lies within two WIM units: Silvies River and Skull Creek WIM units. The Silvies River WIM unit met the sufficient size requirement (7,073 acres), but did not meet the naturalness condition. The unit as a whole is not natural due to human's imprint from the numerous developments, vegetative treatments, and interior routes spread through the entire unit including road maintenance on the Silvies River Road following the 2008 Silvies River wildfire and rehabilitation process.

The Skull Creek WIM unit met the sufficient size requirement (7,315 acres), but did not meet the naturalness condition. The unit as a whole is not natural due to human's imprint to the numerous developments, vegetative treatments, and interior routes spread through the entire unit.

2. None of the proposed alternatives in this EA would differentially impact the characteristics identified in the "Silvies River proposed WSA." The proposal identified several characteristics (Page 2): "The area consists of rolling hills, river bottoms, basalt flows, and native flora." Livestock management will not affect rolling hills, river bottoms, or basalt flows. Past and current livestock grazing management has influenced the native flora characteristic, which were identified in the citizens' proposal. Because BLM must meet the standards for rangeland health none of the alternatives would negatively impact the native flora characteristic. Continued livestock grazing would not detract from the characteristics identified in the citizens' PWSA.

CHAPTER II: ALTERNATIVES, INCLUDING THE PROPOSED ACTION

A. Alternative I: No Action

Under this alternative livestock management would continue as currently authorized. The four existing 10-year term permits would continue to be authorized in accordance with the current terms and conditions. Grazing permit number 3600216 would continue with the terms and conditions of the management described for 424 cattle with a season of use between April 21 to June 10 for 571 active AUM preference.

B. Alternative II: Partial Livestock Kind Conversion (Proposed Action)

Permit number 3600216 would be modified to allow sheep grazing, and a 10-year term permit would be issued. Of the 571 AUMs of permitted active use, 235 AUMs will be made available for cattle and 336 AUMs for sheep. The permittee owns white face sheep, which will be authorized on the allotment. A full-time shepherd would be provided by the permittee. If sheep do not graze, all 571 AUMs would be made available to cattle. This proposed conversion would not increase overall permitted AUMs in Skull Creek Allotment. Herding would be a key component in the success of sheep grazing management within the allotment to improve livestock distribution. Any supplemental feed used on public lands for camp/horses purposes must be weed free. This could be certified weed free hay or processed supplement such as pellets.

Conversion of livestock kind from cattle to sheep would be allowed on a *1 cattle AUM: 5 sheep AUM* basis. One cow/calf pair is the equivalent to five sheep for the purpose of calculating AUMs (43 CFR 4130.8-1(c)). Grazing use dates and treatment would follow the 1999 Skull Creek AMP as outlined in Table 2 below. The current AMP can be found in the Skull Creek Allotment file.

Table 2: Proposed Grazing Management

Year	Pasture	Livestock Numbers		Use Dates	Active AUMs		Grazing Treatment
		Cattle	Sheep		Cattle	Sheep	
1	(1) Early Turnout	140	1,000	04/21 to 05/05	69	99	Graze
1	(2) Lake Creek	140	1,000	05/06 to 06/10	166	237	Graze
1	(3) Boulder Spring	0	0	None	0	0	Rest
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2	(1) Early Turnout	140	1,000	04/21 to 05/05	69	99	Graze
2	(2) Lake Creek	0	0	None	0	0	Rest
2	(3) Boulder Spring	140	1,000	05/06 to 06/10	166	237	Graze

**Other Terms and Conditions**

*The permittee would be able to graze sheep and cattle or cattle up to 571 AUMs.*

*Sheep numbers would not exceed 1,000. Cattle numbers would not exceed 242 head, which would allow cattle to graze for a total of 1-month within the use dates.*

*The sheep would be herded in a "pass through" fashion utilizing steeper and historically underutilized terrain. There would be no camping in riparian areas (utilization not to exceed 50% on herbaceous and 10% on woody), on water, or in the same spot more than twice. Sheep would be herded in a manner to avoid visible areas of medusahead rye.*

*The season of use would be between April 21 and June 10. Flexibility with turnout dates and moving dates is required as a result of annual variables like range conditions, weather, numbers of livestock, kind of livestock, utilization patterns, etc.*

*If the 571 AUMs are not fully utilized then grazing by cattle can occur June 1 to June 10 not to exceed 100 AUMs in the Early Turnout Pasture.*

**C. Alternative III: Complete Livestock Kind Conversion**

Under this alternative all 571 AUMs allocated to permit number 3600216 would be converted from cattle to sheep, with the option of 571 AUMs available to cattle if sheep are not scheduled to use this allotment during that grazing year. Terms and conditions would be the same as Alternative II (Proposed Action) with the difference being a full sheep conversion in AUMs.

Table 3: Alternative Grazing Management

Year	Pasture	Sheep Numbers	Use Dates	Active AUMs	Grazing Treatment
1	(1) Early Turnout	1,700	04/21 to 05/05	168	Graze
1	(2) Lake Creek	1,700	05/06 to 06/10	402	Graze
1	(3) Boulder Spring	0	None	0	Rest
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2	(1) Early Turnout	1,700	04/21 to 05/05	168	Graze
2	(2) Lake Creek	0	None	0	Rest
2	(3) Boulder Spring	1,700	05/06 to 06/10	402	Graze

### Other Terms and Conditions

*Livestock numbers shown above are the maximum number authorized to be used.*

*If two bands of sheep were to graze in the allotment numbers would not exceed 2,000. Approximate use dates would be shortened so AUMs would not exceed 571.*

*The sheep would be herded in a "pass through" fashion utilizing steeper and historically underutilized terrain. There would be no camping in riparian areas (utilization not to exceed 50% on herbaceous and 10% on woody), on water, or in the same spot more than twice. Sheep would be herded in a manner to avoid visible areas of medusahead rye.*

*The season of use would be between April 21 and June 10. Flexibility with turnout dates and moving dates is required as a result of annual variables like range conditions, weather, numbers of livestock, kind of livestock, utilization patterns, etc.*

#### D. Alternative Considered but not Analyzed in Detail: No Grazing

Under this alternative, BLM would cancel grazing permit number 3600216. Under the No Grazing Alternative, the Three Rivers Resource Area Field Manager would not reissue the grazing permit and thus discontinue livestock grazing under this permit in Skull Creek Allotment. The No Grazing Alternative would not meet the purpose and need of responding to a request to change livestock kind and therefore is eliminated from analysis in detail.

#### E. Actions Common to All Alternatives

Grazing use dates and treatment would follow the 1999 Skull Creek AMP.

The allotment listed on this grazing application/license is subject to the requirements of 43 CFR Subpart 4180 - Fundamentals of Rangeland Health and Standards and Guidelines for Grazing Administration. The permit shall be modified, if necessary to meet these requirements, upon completion of a Standards and Guidelines Assessment and Determination as scheduled by the Authorized Officer.

Range improvements must be maintained, to Bureau standards, by the turnout date.

The grazing permit may be modified before the term expires should information collected at a time subsequent to the renewal indicate that changes in management are needed to ensure continued compliance in meeting rangeland health standards and conforming to guidelines. Any minor modification of the terms and conditions may occur when the need arises due primarily when it is critical for immediate resource management.

Any livestock use that has not been approved by the Authorized Officer would be in violation of the grazing permit and a trespass may be warranted.

## CHAPTER III: AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

### A. Elements of the Human Environment

The IDT reviewed the elements of the human environment required by law, regulation, Executive Order (EO) and policy to determine if they would be affected by the Proposed Action or alternatives. Table 4: Elements of the Human Environment summarizes the results of that review. Affected elements are bold. All entries apply to the action alternatives unless otherwise noted.

Table 4: Elements of the Human Environment

Elements of the Human Environment		Status	If Not Affected, Why? If Affected, Reference Applicable EA Section
Wetlands/Riparian Zones (EO 11990)		Affected	Chapter III section 1
Air Quality (Clean Air Act)		Not Affected	There would be no change in air quality as a result of a livestock type conversion.
American Indian Traditional Practices		Affected	Chapter III section 11
Areas of Critical Environmental Concern (ACECs)		Not Present	There are no ACECs near Skull Creek Allotment.
Cultural Resources		Not Present	Cultural resources are not present in Skull Creek Allotment.
Environmental Justice (EO 12898)		Not Affected	The Proposed Action is not expected to have disproportionately high and adverse human health or environmental effects on minority populations and low-income populations as such populations do not exist within the Project Area.
Flood Plains (EO 13112)		Not Present	The Proposed Action does not involve occupancy and modification of flood plains, and would not increase the risk of flood loss.
Hazardous or Solid Waste		Not Present	
Invasive Nonnative Species (EO 13112)		Affected	Chapter III section 3
Paleontological Resources		Not Present	
Prime or Unique Farmlands		Not Present	
Migratory Bird Treaty Act (EO 13186)		Affected	Chapter III section 6
Wildlife/ Threatened or Endangered (T/E) Species or Habitat	Fish	Not Present	No T/E fish species present or critical habitat present.
	Wildlife	Not Present	No T/E wildlife or Critical Habitat present.
	Plants	Not Present	No T/E flora or associated habitat are present.
Wildlife/BLM SSS and Habitat	Fish	Not Present	No SSS fish species present or critical habitat present.
	Wildlife	Affected	Chapter III section 6, 7
	Plants	Not Present	No SSS of flora or associated habitat are present.
Wild and Scenic Rivers		Not Present	
Wilderness		Not Present	
Grazing Management		Affected	Chapter III section 4
Recreation		Affected	Chapter III section 9
Soils/Biological Crusts		Affected	Chapter III section 8
Upland Vegetation		Affected	Chapter III section 2
Visual Resources		Affected	Chapter III section 9
Water Resources (303d listed streams, DEQ 3219 assessment, downstream beneficial uses)		Affected	Chapter III section 1

Elements of the Human Environment		Status	If Not Affected, Why? If Affected, Reference Applicable EA Section
Social and Economic Values		Affected	Chapter III section 10
Wilderness Characteristics		Not Present	Chapter I section D
Wildlife/Locally Important Species and Habitat	Fish	Affected	Chapter III section 1, redband trout are present in Skull and Emigrant Creeks.
	Wildlife	Affected	Chapter III section 5

1. Wetlands, Riparian Zones, Water Quality, and Fisheries

a. Affected Environment

Current discussion and analysis of potential effects to wetlands, riparian zones and water quality are tiered to the Three Rivers PRMP/FEIS (September 1991), and relevant information contained in the following sections is incorporated by reference: 3-2, 3-5, 3-7, and 3-15.

Permittee under permit 3600216 grazes livestock in Lake Creek and Boulder Spring Pastures; as such wetlands, riparian zones and water quality are only addressed within those pastures affected by all alternatives.

Skull Creek Allotment includes portions of Silvies Subbasin. Riparian conditions were analyzed at the 12<sup>th</sup> field Hydrologic Unit Code (HUC) or 12<sup>th</sup> level sub-watershed. There are portions of streams within six, 12<sup>th</sup> field HUCs in the area affected by the Proposed Action.

Analyses of stream conditions and water quality were based on a variety of assessments, including Proper Functioning Condition (PFC), photo monitoring, Streambank Stability Monitoring (Pace-Plot Method), stream temperature monitoring and site visits.

Skull Creek and Emigrant Creek are designated as fish bearing streams within the Proposed Action area, where redband trout are known to occur. This species prefers cold, clear, fast-flowing water with clean cobbles and gravels. The DEQ has set a 20.0 degrees Celsius (C) (68.0 degrees Fahrenheit (F)) water temperature standard for salmonid bearing streams.

However, these trout are adapted to the dry, hot summers of eastern Oregon and can withstand short periods of time at peak water temperatures of 24.0 to 27.0 degrees C (75.0 to 80.0 degrees F), which would be lethal to most other trout (Bowers et al. 1979). Temperature data have been collected on Skull Creek and Lake Creek within the Proposed Action area. Lake Creek is not designated as a fish bearing stream, however, it is a tributary to Silvies River which is fish bearing.

Below are brief descriptions of the current conditions of 12<sup>th</sup> level sub-watersheds within the allotment.

#### Skull Creek 12<sup>th</sup> Field HUC

Approximately 2.9 miles of Skull Creek identified as perennial are on BLM-managed land within the area affected by the Proposed Action. A PFC Assessment was conducted in 1997 on four reaches within this 2.9-mile section of Skull Creek. Approximately 2.5 miles of Skull Creek were rated as PFC, while 0.4-mile was rated as Functioning at Risk (FAR) with an upward trend. The primary reason for the FAR classification was due to an old roadbed which was filling the stream with debris causing the stream to run subterranean.

Baseline data for the riparian vegetation resources along Skull Creek were collected using Alma Winwards Greenline method on July 1, 2009. Community types along and perpendicular to the creek's edge were measured, ranked, and scored according to their successional status and their ability to stabilize the streambank. The Greenline stability was ranked at good (high) and Successional Status was ranked at PNC.

Temperature data were collected at two separate elevations along Skull Creek within the Project Area; 4,480 feet (2) and 4,560 feet (3). At site two, in the 3 years (1997, 2006, and 2007) where water temperatures were collected, only temperatures in July and early August ran above DEQ's 68 degree F for salmonid bearing streams in 1997 and 2006. At site three, temperatures remained well below the 68 degrees F, DEQ standard in all 4 years collected (1997, 2004, 2006, and 2007). Current livestock grazing management is allowing for good to excellent riparian condition and therefore is not a factor for water temperatures not meeting the DEQ standard.

Slickear Creek on BLM-managed land in this allotment is intermittent or ephemeral, and therefore, no monitoring has been collected on this drainage.

### Yellowjacket Creek – Emigrant Creek 12<sup>th</sup> Field HUC

Approximately 0.18-mile of Emigrant Creek is on BLM-managed land within the Project Area. Photo monitoring of this reach has occurred in 2003 and 2009 and show early to mid-seral hydric herbaceous species filling in along cutbanks and various age classes of willow and alder species. Additional formal monitoring has not occurred on this stretch.

### Thousand Spring Creek – Silvies River 12<sup>th</sup> Field HUC

Approximately 2.3 miles of Lake Creek is in the Project Area. Approximately 1.1 miles of Lake Creek is perennial within the area affected by the Proposed Action. Water temperature data collected in 2006 and 2007 met DEQ's 68 degrees F standard from June through October of both years. Photos were taken at the water temperature monitoring site in 2006. Photos show a steep draw with a narrow stream edged with early seral herbaceous vegetation. No shrubs can be seen. The vegetation type along this stream may have been influenced by the closed ponderosa pine and juniper canopy that was recently thinned. There is no other formal monitoring established on Lake Creek.

All other streams within Thousand Spring Creek – Silvies River 12<sup>th</sup> Field HUC on BLM-managed land within the Project Area are either intermittent or ephemeral. No data have been collected along these drainages.

### Upper Willow Creek 12<sup>th</sup> Field HUC

In the Project Area of Upper Willow Creek 12<sup>th</sup> Field HUC, streams on BLM-managed land are intermittent or ephemeral. No data have been collected along these drainages.

### Fenwick Canyon – Silvies River 12<sup>th</sup> Field HUC

In the areas of Fenwick Canyon – Silvies River 12<sup>th</sup> Field HUC affected by the Proposed Action, streams on BLM-managed land are intermittent or ephemeral. No data have been collected along these drainages.

b. Environmental Consequences

(1) Alternative I: No Action

The No Action Alternative would not change the current livestock grazing management or type. The current livestock rotation and timing of use are allowing for riparian conditions to improve because cattle are grazing in early and late spring (April 21 to June 10) and Boulder Springs and Lake Creek Pastures are rested every other year, which promotes riparian vegetation and bank stability resulting in fish habitat. Given trends observed, riparian conditions in the area are expected to improve or be maintained in good condition with the continuance of the existing livestock grazing management.

(2) Alternative II: Partial Livestock Conversion (Proposed Action)

The Proposed Action would allow sheep to graze the allotment in place of cattle for the 336 AUMs; however, it is unknown how often this would happen. If cattle or sheep graze the allotment, timing and AUMs used would remain the same. Proper grazing management of either type of livestock is expected to continue to improve or maintain riparian conditions. Because of the term and condition stating that sheep may not camp in riparian zones, and if sheep are grazed more often than cattle, riparian areas which need improvement may reach their PFC faster than with cattle grazing. Herd management would control sheep distribution and time spent grazing in riparian zones would decrease, therefore, utilization of key riparian plant species needed for streambank stabilization and instream fish habitat would decrease. Stabilization of streambanks occurs with the increase in deep rooted, sediment trapping hydric species. As desirable herbaceous and woody species establish, habitat conditions improve for the fisheries in the stream. As stated in Chapter II B, "Herding would be a key component in the success of sheep grazing management within the allotment to improve livestock distribution."

(3) Alternative III: Complete Livestock Conversion

Effects would be the same as those of the Proposed Action. Again proper sheep herding would be key to the success of improved conditions in riparian zones.

## 2. Upland Vegetation

### a. Affected Environment

Current discussion and analysis of potential effects to upland vegetation are tiered to the Three Rivers PRMP/FEIS (September 1991), and relevant information contained in the following sections is incorporated by reference: 3-3, 3-4, 3-7, and 3-15.

The following vegetation communities occur within Skull Creek Allotment:

#### (1) Sagebrush-Dominated Communities

##### *Wyoming and Basin Big Sagebrush Plant communities*

This community type is dominated by basin big sagebrush (*Artemisia tridentata* var. *tridentata*) or Wyoming big sagebrush (*Artemisia tridentata* var. *wyomingensis*). Other shrubs that are present but not dominant include rubber rabbitbrush (*Ericameria* sp.), green rabbitbrush (*Chrysothamnus viscidiflorus*), antelope bitterbrush (*Purshia tridentata*). Perennial herbaceous species make up less than 25 percent cover. Grass species include bluebunch wheatgrass (*Pseudoroegneria spicata*), Thurber's needlegrass (*Achnatherum thurberiana*), Sandberg's bluegrass (*Poa secunda*), basin wildrye (*Leymus cinereus*), bottlebrush squirreltail, and western wheatgrass (*Pascopyrum smithii*). Due to the elevation, only a small portion of the allotment is this community type.

##### *Mountain Big Sagebrush Plant Communities*

Mountain big sagebrush plant communities above approximately 4,500 feet are dominated by mountain big sagebrush (*Artemisia tridentata* ssp. *vaseyana*). These are some of the most productive plant communities within the Burns District. A number of other shrubs are often found within the mountain big sagebrush plant communities. Other common shrubs are antelope bitterbrush, mountain snowberry (*Symphoricarpos oreophilus*), wax currant (*Ribes cereum*), rubber rabbitbrush, green rabbitbrush, and snowbrush (*Ceanothus velutinus*). Dominant grasses are bluebunch wheatgrass, Idaho fescue (*Festuca idahoensis*), Thurber's needlegrass, western needlegrass (*Achnatherum occidentale*), Sandberg's bluegrass, Columbia needlegrass (*Achnatherum nelsonii*) and junegrass (*Koeleria macrantha*).

Mountain mahogany (*Cercocarpus ledifolius*) is also found in this plant community. Approximately half of the allotment is comprised of this plant community type.

#### *Low Sagebrush Plant Communities*

Low sagebrush (*Artemisia arbuscula*) plant communities are found on shallow soils or soils with a heavy clay layer within 16 inches of the soil surface. Antelope bitterbrush, rubber rabbitbrush, green rabbitbrush, and scabland sage (*Artemisia rigida*) are often found in association with low sagebrush. Mountain big sagebrush and bitterbrush are often found on slightly deeper soil islands within the low sagebrush plant community. Herbaceous vegetation is similar to the neighboring Wyoming or mountain big sagebrush plant communities. Sandberg's bluegrass, bottlebrush squirreltail, and Idaho fescue are the dominant perennial grasses. This plant community can be found on most of the benches and tabletops in the allotment.

#### (2) Forest

Ponderosa pine (*Pinus ponderosa*) and Douglas-fir (*Pseudotsuga menziesii*) are the dominant tree species in the forested areas. Ponderosa pine occurs throughout the Project Area while Douglas-fir occupies wetter areas on north slopes or protected areas with increased soil moisture due to snow accumulations or run in topography. Understory vegetation is dominated by pinegrass (*Calamagrostis rubescens*) and a number of perennial forbs. In more open areas mountain big sagebrush occurs intermixed with the ponderosa pine. A thick duff layer of pine and fir needles occurs in the understory of dense patches of trees.

#### (3) Western Juniper Woodlands

Western juniper (*Juniperus occidentalis*) woodlands occur throughout the Project Area. Western juniper is a long-lived conifer that historically occupied rocky ridgetops and shallow soil areas. However, over the past 130 years western juniper has encroached into more productive big sagebrush, quaking aspen, and riparian habitats. There is a mix of old growth stands (greater than 200 years old) and post-settlement stands in the Project Area. Old growth stands have an understory of low sagebrush and a mixture of perennial grasses and forbs. Species composition of the understory is similar to low sagebrush plant communities.

Post-settlement stands have an understory similar to the pre-encroachment plant community. In areas where western juniper has moved into mountain big sagebrush plant communities, the understory contains species similar to the mountain big sagebrush plant communities listed above. However, as western juniper density increases the shrub species are lost from the plant community and western juniper becomes the dominant woody plant. This plant community is associated with all of the other vegetation communities throughout the allotment.

b. Environmental Consequences

(1) Alternative I: No Action

Under the No Action Alternative current management would continue. The Skull Creek Allotment is currently meeting standards for upland vegetation. Under current management the northern ends of Boulder Springs and Lake Creek Pastures would continue to receive more use than the southern ends of the pastures. Cattle grazing would continue to be unevenly focused on the north ends of these two pastures, but trend monitoring and the allotment evaluation found that this management was within acceptable levels for upland vegetation.

(2) Alternative II: Partial Livestock Conversion (Proposed Action)

By authorizing use by sheep and cattle, the diet selection and different use patterns of the two types of livestock would spread the impacts of grazing across more herbaceous species and acres (Hanley and Hanley 1982). There would be more even utilization, especially in areas that were historically grazed less intensively by cattle. The overall use patterns in the allotment would be more uniform when sheep are used. In late spring and early summer in sagebrush steppe vegetation type, sheep primarily target grasses and forbs with light<sup>1</sup> utilization of shrubs, and little or no reduction in forage production by shrubs at the end of the growing season (Jensen et al. 1972 and Laycock 1967).

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<sup>1</sup> Light defined by BLM form (4412-12) range utilization/key forage plant method, 21-40% herbaceous removal

Moderate<sup>2</sup> levels of late spring sheep grazing can decrease numbers of reproductive culms in grasses, but enhance winter crude protein levels in bluebunch wheatgrass, Idaho fescue, and elk sedge that can improve winter forage quality on big game winter range (Clark et al. 2000 and Vavra 2005). During spring and early summer grazing by sheep, diets were found to primarily consist of forbs (Buchanan et al. 1972). However, sheep diets shifted to grasses in grass dominated communities or as palatable forbs declined in abundance (Buchanan et al. 1972). Palatable annual forbs may be pulled out by the roots and entirely consumed by sheep (Buchanan et al. 1972).

Continuous heavy<sup>3</sup> spring grazing by sheep can greatly reduce the production of grass and forbs in good condition rangelands, but light spring stocking made a substantial increase in grasses while forbs increased slightly in poor condition rangelands (Mueggler 1950).

The rest-rotation system is designed to provide periodic rest for grazed plants in Boulder Springs and Lake Creek Pastures. However, there is concern in the continuous early use dates for the Early Turnout Pasture, because of the effects of utilization on early developing forbs by sheep. Reoccurring use dates in Early Turnout Pasture could result in a decline in forb production. Trend and Utilization monitoring would determine if the sheep management such as frequency, duration, and intensity of grazing have decreased rangeland trend, and if a change in adaptive management would be required.

(3) Alternative III: Complete Livestock Conversion

Impacts to vegetation associated with sheep grazing under this alternative would be similar to Alternative II, but at a larger scale with more sheep AUMs as AUMs would only be allocated to sheep.

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<sup>2</sup> Moderate defined by BLM form (4412-12) range utilization/key forage plant method, 41-60% herbaceous removal

<sup>3</sup> Heavy defined by BLM form (4412-12) range utilization/key forage plant method, 61-80% herbaceous removal

Sheep numbers would be between 1,700 and 2,000 head (Table 4), and would increase grazing impacts to the forb and grass components of the allotment. The vegetation in the upland areas could expect increased use. The early use in Early Turnout and the rest-rotation in Boulder Springs and Lake Creek Pastures are designed to mitigate reduced vegetative vigor associated with livestock grazing. In the Early Turnout Pasture, under Alternative III, there would be greater risk of decreased early and annual forb production caused by sheep consumption. A benefit to Alternative III is the potential for greater control in the distribution of the 571 AUMs within Skull Creek Allotment by herding. This alternative would have similar benefits to nutritional quality for wildlife winter forage due to spring and early summer grazing by livestock as mentioned in Alternative II. Trend and Utilization monitoring would determine if the sheep management such as frequency, duration, and intensity of grazing have decreased rangeland trend, and if a change in adaptive management would be required.

3. Noxious Weeds and Invasive Nonnative Plant Species

a. Affected Environment

Current discussion and analysis of potential effects to noxious weeds and invasive nonnative plant species are tiered to the Three Rivers PRMP/FEIS (September 1991), and relevant information contained in the following sections is incorporated by reference: 3-4 and 3-7.

The BLM weed monitoring records indicate the following noxious weeds occur in Skull Creek Allotment.

Table 5: Weeds Occurring in Skull Creek Allotment (2009)

Noxious Weed	Approximate Acreage
Dalmation Toadflax	5.04
Medusahead Rye	2.22
Whitetop	0.45
Russian Knapweed	0.18
Bull Thistle	0.17
TOTAL	8.06

The majority of weed species occur along existing roads. Treatments occur on an annual basis.

b. Environmental Consequences

(1) Alternative I: No Action

Under this alternative, cattle grazing would continue as it has in the past. Areas typically avoided for grazing would continue to be avoided. Thus, concentrated livestock use where there has been historical concentration or heavier utilization would continue. These areas could be more susceptible to noxious weed introduction and spread.

Weed management activities in the allotment would continue as before but opportunities to impact noxious weeds by grazing with sheep would not occur.

(2) Alternative II: Partial Livestock Conversion (Proposed Action)

Unlike cattle, sheep typically are herded and move relatively quickly through the landscapes. Sheep have a high preference for forbs, including many noxious weeds and will be inclined to consume them, especially in the springtime (Thrift et al. 2008). This is a good time of year to adversely impact weeds to minimize their spread since they do not have seeds at this time of year. If sheep move quickly across the allotment, their adverse impacts to the native forbs would be minimized, particularly if the turnout pastures are rotated periodically when impacts are noticed. The sheep can be herded into areas of the pastures that the cattle do not typically graze, specifically the steeper sloped areas. This would help distribute grazing pressure better across the Project Area.

Sheep grazing may reduce weed vigor and be helpful in augmenting our weed management strategies since sheep prefer many of our noxious weed species (Olsen and Wallander 1998). Sheep typically do not graze heavily on grasses, reducing the competition for forage with cattle. Properly managed cattle grazing will complement the sheep grazing by maintaining vigorous and productive grasses, which would reduce opportunities for noxious weed establishment and spread.

Sheep can pack weed seeds in their wool and introduce weeds to new areas (Wallander et al. 1995 and Olson et al. 1997). However, in the springtime, the sheep have generally been recently shorn and would not have picked up new seeds yet since weeds would not be in the seed stage of development.

(3) Alternative III: Complete Livestock Conversion

Effects of a complete conversion to sheep would be similar to Alternative II. However, even at later times of the year, sheep digestive systems have an ability to reduce viable seeds coming through their digestive tracts to low percentages (5 percent to 26 percent viable) versus seed collected from individual plant seed stalks (41 percent to 68 percent viable) (Wallander et al. 1995 and Olson et al. 1997). This many sheep may reduce forb numbers to a noticeable extent, particularly annuals. If necessary alternating early spring pastures may offset the cumulative grazing effects on native forbs. Where forbs are heavily utilized, they may not be competitive with weeds so we may see some reduction in the ability of the native vegetation to deter new weed introductions. Alternating early spring pastures may offset this effect, if necessary.

Sheep grazing may reduce weed vigor and be helpful in augmenting our weed management strategies. Sheep typically do not graze heavily on grasses, which would help maintain or improve the vigor and productivity of the desirable grasses to compete with the weeds.

4. Livestock Grazing Management

a. Affected Environment

Current discussion and analysis of potential effects to livestock grazing management are tiered to the Three Rivers PRMP/FEIS (September 1991), and relevant information contained in the following sections is incorporated by reference: 3-2, 3-4, and 3-7.

There are four term grazing permits that authorize 1,959 AUMs of cattle use in Skull Creek Allotment. The Boulder Springs and Lake Creek Pastures are managed under a rest-rotation grazing system, with use occurring from approximately May 1 to June 10 during the graze year. The Early Turnout Pasture is used every year from April 20 to May 5. Other forage allocations include 386 AUMs for wildlife forage.

Table 6: Current Authorized Use in Skull Creek Allotment

Permittee	Dates	Active AUMs	Suspended AUMs	Total Grazing Preference	Livestock Type
3600216	04/21 to 06/10	571	435	1006	Cow/Calf
3601439	04/21 to 05/31	571	688	1259	Cow/Calf
3602818	04/21 to 05/31	383	142	525	Cow/Calf
3602334	04/21 to 05/31	434	161	595	Cow/Calf
Totals		1,959	1,426	3,385	

b. Environmental Consequences

(1) Alternative I: No Action

Under the No Action Alternative current management would continue. The Skull Creek Allotment is currently meeting standards for native plant communities in both upland and riparian areas. Under current management cattle would continue to use the northern ends of Boulder Springs and Lake Creek Pastures more than the southern ends of the pastures. Cattle grazing would continue to be unevenly focused on the north ends of these two pastures, but trend monitoring and the allotment evaluation indicate upland and riparian vegetation within the allotment are at acceptable levels.

(2) Alternative II: Partial Livestock Conversion (Proposed Action)

Under this alternative, sheep grazing management would be designed to achieve more even utilization patterns in the Boulder Springs and Lake Creek Pastures. The proposed grazing rotation is outlined in Table 3: Proposed Grazing Management. White face sheep will be used on the allotment because such breeds are easier to herd to produce desired vegetation management outcomes. The sheep would be herded the entire time they were on the allotment. They would be directed into areas receiving lighter cattle use, out of riparian areas, and into areas where sheep grazing preferences would help maintain or achieve desired vegetative conditions.

With herding, the Proposed Action would mitigate undesirable effects to plant communities resulting from uneven livestock distribution. Under the Proposed Action, sheep would be moved within the allotment as utilization levels are reached. The proposed rotation and targeted grazing would control timing of grazing and distribution of the sheep.

(3) Alternative III: Complete Livestock Conversion

This alternative would be similar to Alternative II, but with more sheep AUMs, as AUMs would only be allotted to sheep. Sheep numbers would be between 1,700 and 2,000 head (Table 4), and could increase grazing impacts to herbaceous vegetation. The vegetation in the upland areas could expect increased use. The early use in Early Turnout and the rest-rotation in Boulder Springs and Lake Creek Pastures are designed to mitigate for reduced vegetative vigor associated with livestock grazing. A benefit to Alternative III is the potential for greater control in the distribution of the 571 AUMs within Skull Creek Allotment by herding.

5. Wildlife

a. Affected Environment

Current discussion and analysis of potential effects to wildlife are tiered to the Three Rivers PRMP/FEIS (September 1991), and relevant information contained in the following sections is incorporated by reference: 3-3, 3-4, and 3-9.

The Skull Creek Allotment is comprised of several vegetation communities including sagebrush-grasslands, ponderosa pine and Douglas-fir forests, riparian, and juniper woodlands. Mountain mahogany is also common in some areas of the allotment. These habitat types support a diversity of wildlife, and range monitoring data indicates the uplands and riparian areas are in good condition or trending upward. A small percentage of this allotment is considered winter range for elk and mule deer, although use of the allotment varies with severity of winter and amount of snowfall accumulation. Individual or small bands of antelope are common in the allotment in the spring and summer. Allocations of forage for elk, mule deer, and antelope are established at 24, 354, and 8 AUMs respectively. This allotment is within the Oregon Department of Fish and Wildlife's Silvies Wildlife Management Unit. Deer numbers are well below the current population management objectives, while elk are near their management objective.

Other wildlife species that are known or likely to use the allotment for some portion of their lifecycle include mountain lion, badger, coyote, raptors, quail, resident songbirds, numerous small mammals, reptiles, and amphibians.

b. Environmental Consequences

(1) Alternative I: No Action

Grazing would continue under existing management, only authorizing cattle grazing in the allotment. The two largest pastures, Boulder Springs and Lake Creek, are alternated between graze and rest treatments each year. Early Turnout Pasture would be grazed early in the season each year. Cattle would likely continue to use the northern portions of Boulder Springs and Lake Creek Pastures disproportionate to the southern portions. Riparian areas adjacent to Skull Creek and Lake Creek would continue to be grazed by cattle. Cattle and elk diets are dominated by grasses and may overlap extensively during much of the year (Findholt 2004, Torstenson et al. 2006); however, there is less overlap between cattle and mule deer or pronghorn (McInnis and Vavra 1987, Hanley and Hanley 1982). Elk tend to avoid areas when cattle are present and mule deer avoid elk; therefore, presence of cattle may influence distribution of both elk and deer (Coe et al. 2001, Stewart et al. 2002). Elk may move to steeper slopes within the pasture being grazed or move to adjacent pastures without livestock, and deer will react and avoid elk. The current level of livestock grazing is not expected to reduce the cover and vigor of plants in these areas. Spring grazing may improve quality of elk winter range (Clark et al. 2000); however, depending on regrowth prior to winter, potential benefits may be outweighed by lowered quantity of forage available.

Scheduled rest of pastures and established target utilization levels on key forage species is expected to continue to maintain forage and cover for big game and a diverse array of wildlife species. Existing management has met and is expected to continue to meet the Standards for Rangeland Health, including the Standard for Native, Threatened and Endangered, and Locally Important Species except standards for the water quality and redband trout a locally important species.

(2) Alternative II: Partial Livestock Conversion (Proposed Action)

Cattle grazing would continue to occur, although fewer AUMs would be permitted for cattle if sheep are scheduled to graze. The effects of cattle grazing would be the same as those described in Alternative I.

Sheep are protected and herded through the allotment by a shepherd with dogs. Wildlife not disturbed or displaced by cattle or sheep may be affected by continual presence of shepherds and dogs. All big game would likely avoid the area until sheep and shepherds are no longer in the adjacent area or pasture. Smaller, less vagile wildlife species may remain in close proximity to the flock, but avoid the area of disturbance near or around the flock.

Sheep forage extensively on grass in the spring, but tend to utilize more forbs and browse than cattle (Jensen et al. 1972). Forb and browse use during this time would overlap more with mule deer and pronghorn diets (Hanley and Hanley 1982) rather than with elk and cattle. Bork et al. (1998) concluded that long-term heavy spring grazing with sheep reduced the perennial forb cover on their study site, but increased sagebrush and annual forb cover. Pronghorn graze extensively on forbs throughout the year (Hanley and Hanley 1982), and reductions in perennial forb cover may negatively affect their use of the allotment. Early Turnout Pasture is scheduled to be grazed early in the spring every year, which may affect cover of early growing forbs. Forbs emerging later in the spring and early summer would not be grazed by sheep in this pasture. Lake Creek and Boulder Spring Pastures would receive rest every other year, providing complete growing season rest and reducing potential impacts on forbs and browse. Sheep would be actively herded through the allotment, remaining in areas within the pasture for only a few days and utilizing steeper areas not frequented by cattle. Limiting time spent in areas and alternating rest of pastures is expected to maintain adequate forbs and other forage for pronghorn, mule deer and other wildlife. Moving livestock before target utilization levels on key grass species are exceeded would leave adequate cover throughout the year for small mammals and other wildlife.

Healthy riparian areas are productive habitat and are critical for many species of wildlife including big game, bats, and resident bird species (Thomas et al. 1979). Cattle would have free access to graze riparian areas, but sheep would be actively herded away from these areas except to meet watering needs. Habitat along riparian areas is improving, and is expected to continue to provide adequate vegetative diversity, structure, and cover for wildlife.

(3) Alternative III: Complete Livestock Conversion

Effects of sheep grazing would be similar to those described in Alternative II; however, converting the full 571 AUMs to sheep would increase numbers of sheep. Forb availability and production would be impacted to a greater extent than under the other alternatives. Early perennial forb production in the Early Turnout Pasture is most at risk due to lack of rest during this period. Early spring grazing would not impact later emerging perennials. Lake Creek and Boulder Spring Pastures would be rested annually, which would maintain perennial forb, shrub, and grass cover. Disturbances associated with herding would be similar to Alternative II, but would allow better control of where grazing occurs.

6. Migratory Birds

a. Affected Environment

Current discussion and analysis of potential effects to wetlands, riparian zones and water quality are tiered to the Three Rivers PRMP/FEIS (September 1991), and relevant information contained in the following section is incorporated by reference: 3-9.

Habitat for many migratory birds is present within the allotment. Common bird species of sagebrush-dominated habitats likely to be found in this allotment include Brewer's sparrow, loggerhead shrike, green-tailed towhee, and lark sparrow. Where juniper cover increases in sagebrush habitat, chipping sparrow, white-crowned sparrow, mountain bluebird, and Townsend's solitaire are often present. Pine forest associated species include warbler species, Cassin's finch, pine siskin, Oregon junco, thrushes, and this assemblage of species intergrades with nesting species from sagebrush and juniper woodland in mixed pine/juniper stands, and where sagebrush is common in the forest understory. In mountain shrubland, a habitat in which bitterbrush, snowberry, bitter cherry, and mountain mahogany may become dense, species such as spotted towhee, western and mountain bluebird, and warbler species may be common. Riparian habitat usually hosts a unique group of species that includes yellow warbler, yellow breasted chat, western kingfisher, and fly catcher species, although many species utilize riparian habitat for some portion of their life cycle. Several raptor species may also be found nesting and hunting in this allotment including red-tail hawk, Swainson's hawk, goshawk, Cooper's hawk, and sharp-shinned hawk. These birds prey upon a wide variety of small animals, although some specialize on a narrow range of prey.

As reflected by rangeland health standard assessments for upland and riparian areas in the allotment, habitat for birds is generally in good condition and in an upward trend. Riparian habitat provides critical nesting and foraging areas for many bird species and insect prey. Riparian areas on Skull Creek and Lake Creek were meeting Standards for Rangeland Health for riparian areas and wildlife.

b. Environmental Consequences

(1) Alternative I: No Action

Grazing would continue under existing management, only authorizing cattle grazing in the allotment. The two largest pastures, Boulder Springs and Lake Creek, are alternated between graze and rest treatments each year. Early Turnout Pasture would be grazed early in the season each year. Cattle would likely continue to use the northern portions of Boulder Springs and Lake Creek Pastures disproportionate to the southern portions. Riparian areas adjacent to Skull Creek and Lake Creek would continue to be grazed by cattle.

Grazing would occur in the spring and early summer when birds are first arriving on the allotment, selecting mates, building nests, and incubating eggs. Disturbance during this period could lead to temporary to long-term displacement from certain areas or even nest abandonment. Trampling of nests may occur, but would be unlikely to affect many nests or affect production of young due to low numbers of cattle spread over a large area.

Grazing would reduce herbaceous cover, potentially exposing nests and eggs. Loss of cover during this period would expose eggs and chicks to greater risk of predation. Diet for many birds during this period, especially chicks, consists primarily of insects. Reduced cover would also decrease forage and hiding cover for prey, including many insects. Although some nest loss may occur directly through trampling or indirectly through reduction in cover, many species are able to produce a second clutch (Ehrlich et al. 1988) after losing a nest which may help minimize loss of production. Greatest impacts from disturbance would be to ground nesting species or species that tend to nest low in shrubs, such as juncos and towhees. Tree nesters, cavity nesters, and species nesting higher in shrubs, such as loggerhead shrike and kestrels, would less likely be disturbed from cattle grazing.

Scheduled rest of pastures and established target utilization levels on key forage species is expected to continue to maintain forage and cover for ground nesting species in this allotment, and provide areas annually undisturbed by livestock grazing and associated impacts. Existing management has met and is expected to continue to meet the Standards for Rangeland Health, including the Standard for Native, Threatened and Endangered, and Locally Important Species except standards for the water quality and redband trout a locally important species.

(2) Alternative II: Partial Livestock Conversion (Proposed Action)

Cattle grazing would continue to occur, although fewer AUMs would be permitted for cattle if sheep are scheduled to graze. The effects of cattle grazing would be the same as those described in Alternative I.

Sheep are protected and herded through the allotment by a shepherd with dogs. Migratory birds not already disturbed or displaced by cattle or sheep, may be affected by continual presence of shepherds and dogs. Birds have different tolerances and flush distances depending on species affected and type of disturbance. In general, larger species such as raptors tend to have lower tolerance to disturbance and will flush at greater distances than smaller species. Towhees tend to stay low in the brush and flush short distances while remaining hidden by shrubs and other cover. Raptors would likely avoid the area disturbed by humans and dogs, but species such as towhees would likely be impacted the most when sheep, shepherds, and dogs are in the area. Trampling risk would increase compared to Alternative I due to higher numbers of animals grazing (5:1 ratio for sheep to cow conversion), and risk would be greatest in the continuous use of Early Turnout Pasture. Trampling would not affect too many birds because the Early Turnout Pasture is large, and the time spent will be relatively short (2 weeks) and early (April 21 to May 5) in the breeding season before many ground nesters have laid eggs.

Sheep forage extensively on grass in the spring, but tend to utilize more forbs and browse than cattle (Jensen et al. 1972). Bork et al. (1998) concluded that heavy long-term spring grazing with sheep reduced the perennial forb cover on their study site, but increased sagebrush and annual forb cover. Some insect species utilize specific host plants, often relying on a narrow number of forb species for food and depositing eggs (Bernays and Graham 1988).

Insects are an important nutritive food source for migratory birds and brood rearing. Early Turnout Pasture is scheduled to be grazed early in the spring every year, which may affect availability of early growing forbs. Reductions in forbs may impact prey availability for migratory birds through reduced insect production. Lake Creek and Boulder Spring Pastures would receive rest every other year, providing complete growing season rest and minimizing potential impacts on forbs and browse.

Sheep would be actively herded through the allotment, remaining in areas within the pasture for only a few days and utilizing steeper areas not frequented by cattle. Limiting time spent in areas and alternating rest of pastures is expected to maintain adequate herbaceous and shrub cover for migratory birds and their prey. Moving livestock before target utilization levels on key grass species are exceeded would leave adequate cover throughout the year for small mammals and other wildlife.

Healthy riparian areas are productive habitat and are critical for many species of wildlife including big game, bats, and resident bird species (Thomas et al. 1979). Cattle would have free access to graze riparian areas, but sheep would be actively herded away from these areas except to meet watering needs. Habitat along riparian areas is improving, and is expected to continue to provide adequate vegetative diversity, structure, and cover for wildlife.

(3) Alternative III: Complete Livestock Conversion

Effects of sheep grazing would be similar to those described in Alternative II; however, converting the full 571 AUMs to sheep would increase numbers of sheep. Risk of trampling nests would be greater due to the increase in numbers of animals (5:1 ratio of sheep to cows for conversion of AUMs). Disturbance from livestock would also be greatest under this alternative due to the increase in numbers. Forb availability and production would be impacted to a greater extent than under the other alternatives. Early perennial forb production in the Early Turnout Pasture is most at risk due to lack of rest during this period. Early spring grazing would not impact later emerging perennials. Lake Creek and Boulder Spring Pastures would be rested annually, which would help maintain perennial forb, shrub, and grass cover. Disturbances associated with herding would be similar to Alternative II, unless an additional shepherd or dogs is necessary. Herding would allow better control of where grazing occurs.

## 7. Special Status Species

### a. Affected Environment

Current discussion and analysis of potential effects to wetlands, riparian zones and water quality are tiered to the Three Rivers PRMP/FEIS (September 1991), and relevant information contained in the following section is incorporated by reference: 3-9.

There are no Federally listed Threatened or Endangered wildlife species known to occur in the area. Skull Creek Allotment does support populations of SSS.

Lewis' (*Melanerpes lewis*) and White-headed (*Picoides albolarvatus*) woodpeckers occur in the allotment, and are primarily found in ponderosa pine, Douglas-fir, and riparian areas. SSS bats, including fringed myotis (*Myotis thysanodes*), spotted bat (*Euderma maculatum*), and Townsend's big-eared bat (*Corynorhinus townsendii*) may utilize the allotment, especially the large ponderosa pine and Douglas-fir tree for day or night roosting and open water of reservoirs and stock ponds for foraging. Columbia spotted frogs (*Rana luteiventris*) are not known to occur in the allotment; however, riparian habitat and open water along Skull Creek may provide a limited amount of potential habitat for this species. Riparian areas are important to several of these SSS, and monitoring indicates these areas are meeting Standards for Rangeland Health for 1) watershed-riparian areas and 2) native and locally important species except for redband trout.

Greater sage-grouse is a species currently being reviewed by the U.S. Fish and Wildlife Service for listing under the Endangered Species Act. At this time, Oregon BLM considers sage-grouse as an SSS. Greater sage-grouse are sagebrush obligates, relying on the plant for food and cover throughout the year (Schroeder et al. 1999). Sage-grouse use a mix of sagebrush habitat types for breeding, nesting, brood rearing, and wintering. Sage-grouse generally locate leks in open areas near sagebrush-dominated plant communities.

Greater sage-grouse generally use big sagebrush for nesting habitat, although nests have been found in low sagebrush and other habitats (Connelly et al. 2004). For the brood-rearing stage and pre-nesting period for hens, areas rich in forbs are important (Drut et al. 1994, Sveum et al. 1998). Riparian areas, and low and stiff sagebrush flats provide forage areas during these life stages as these plant communities are generally rich in forbs. In winter, sage-grouse congregate in areas where sagebrush is available above the snow or on windswept ridges (Hanf et al. 1994).

By late fall, sage-grouse forage almost exclusively on sagebrush and do so until spring (Connelly et al. 1988).

The three pastures directly affected by the proposed conversion from cattle to sheep contain over 27,000 acres of potential habitat for sage-grouse. Approximately 6,950 acres are currently considered marginal habitat due to extensive juniper encroachment or recent fire. There are three active leks within 5 miles of the affected pastures. Two of the leks are within a mile of each other and are considered a single complex with birds using one or both leks during the season. These two leks are approximately 2.5 miles northeast of the allotment, and the other lek is approximately 3.7 miles east of the allotment. The majority of sage-grouse nest within 4 miles of leks; however, nests may be over 12 miles from the lek (*in* Hagen 2005).

b. Environmental Consequences

(1) Alternative I: No Action

Grazing would continue under existing management, only authorizing cattle grazing in the allotment. The two largest pastures, Boulder Springs and Lake Creek, are alternated between graze and rest treatments each year. Early Turnout Pasture would be grazed early in the season each year. Cattle would likely continue to use the northern portions of Boulder Springs and Lake Creek Pastures disproportionate to the southern portions. Open, low sagebrush flats are often used by sage-grouse during brood rearing, and extensive use by cattle during the growing season may reduce herbaceous vegetation, including forbs. Riparian areas adjacent to Skull Creek and Lake Creek would continue to be grazed by cattle. The current level of livestock grazing is not expected to reduce the cover and vigor of plants in these areas.

Sage-grouse are ground nesting birds, and nests may be trampled by cattle. Trampling of nests is unlikely to occur however, due to the large size of the pastures for cattle to disperse and the typical placement of grouse nests under sagebrush. Disturbance during the nest building and incubation period is more likely than loss of nests and eggs from trampling. Disturbance may lead to displacement or abandonment of nests. Loss of hiding cover during incubation and early brood-rearing periods may also occur, leading to predation and nest loss (Gregg et al. 1994).

Other SSS occurring in the allotment rely extensively on riparian or forested habitat. Monitoring indicates riparian vegetation is in good condition, providing diverse vegetation and structure important for cover and forage for SSS and their prey. Ponderosa pine and Douglas-fir forested habitat is more affected by restoration and fuels treatments and wildfire than by grazing, and nesting and roosting habitat for bats and woodpeckers would not be affected by grazing. Current grazing levels would likely maintain adequate habitat for insect prey in riparian and forest understory, and have little impact on woodpecker species dependent on insects and seeds in trees.

Scheduled rest of pastures and established target utilization levels on key forage species is expected to maintain forage and cover for sage-grouse and minimize the likelihood of disturbance to nesting grouse. Existing management has met, and is expected to continue to meet the Standards for Rangeland Health, including the Standard for Native, Threatened and Endangered, and Locally Important Species.

(2) Alternative II: Partial Livestock Conversion (Proposed Action)

Cattle grazing would continue to occur, although fewer AUMs would be permitted for cattle if sheep are scheduled to graze. The effects of cattle grazing would be the same as those described in Alternative I, although the extent of impact would be somewhat less due to lower numbers of cattle.

Sheep are protected and herded through the allotment by a shepherd with dogs. Sage-grouse not already disturbed or displaced by cattle or sheep, may be affected by continual presence of shepherds and dogs. Trampling risk would increase compared to Alternative I due to higher numbers of animals grazing (5:1 ratio for sheep to cow conversion), and risk would be greatest in the smaller pasture (Early Turnout). Trampling would not affect too many birds because the Early Turnout Pasture is large, and the time spent would be relatively short (2 weeks) and early (April 21 to May 5) in the breeding season before many ground nesters have laid eggs.

Sheep forage extensively on grass in the spring, but tend to utilize more forbs and browse than cattle (Jensen et al. 1972).

Bork et al. (1998) concluded that long-term spring grazing with sheep reduced the perennial forb cover on their study site, but increased sagebrush and annual forb cover. Drut et al. (1994) found that sage-grouse hens extensively utilize forbs during brood rearing and pre-nesting periods, which may improve sage-grouse productivity (Barnett and Crawford 1994). Some insects, especially butterfly and moth species, utilize specific host plants and often rely on a few forb species for food and depositing eggs (Bernays and Graham 1988). Insects are an important nutritive food source for migratory birds and brood rearing. Early Turnout Pasture is scheduled to be grazed early in the spring every year, which may affect availability of early growing forbs. Reductions in forbs may impact forage availability for sage-grouse hens and chicks through reduced forb cover and reduced insect production. Lake Creek and Boulder Spring Pastures would receive rest every other year, providing complete growing season rest and minimizing potential impacts on forbs and browse.

Sheep would be actively herded through the allotment, remaining in areas within the pasture for only a few days and utilizing steeper areas not frequented by cattle. Limiting time spent in areas and alternating rest of pastures is expected to maintain adequate herbaceous and shrub cover for sage-grouse forage and hiding needs. Moving livestock before target utilization levels on key grass species are exceeded will maintain adequate cover throughout the year.

Cattle would have free access to graze riparian areas, but sheep would be actively herded away from these areas except to meet watering needs. Habitat along riparian areas is improving, and is expected to continue to provide adequate vegetative diversity, structure, and cover for sage-grouse.

(3) Alternative III: Complete Livestock Conversion

Effects of sheep grazing would be similar to those described in Alternative II; however, converting the full 571 AUMs to sheep would increase numbers of sheep. Risk of trampling nests would be greater due to the increase in numbers of animals (5:1 ratio of sheep to cows for conversion of AUMs). Disturbance from livestock would also be greatest under this alternative due to the increase in numbers. Forb availability and production would be impacted to a greater extent than under the other alternatives, and would be most at risk in the Early Turnout Pasture due to lack of rest during this period. Early spring grazing would not impact later emerging perennials.

Lake Creek and Boulder Spring Pastures would be rested annually, which would help maintain perennial forb, shrub, and grass cover. Disturbances associated with herding would be similar to Alternative II, unless an additional shepherd or dogs is necessary. Herding would allow better control of where grazing occurs.

8. Soils and Biological Soil Crusts

a. Affected Environment

Current discussion and analysis of potential effects to soils and biological crusts are tiered to the Three Rivers PRMP/FEIS (September 1991), and relevant information contained in the following sections is incorporated by reference: 3-3 and 3-4.

Soil textures in the area are gravelly to very stony loams and silts; rock outcrops are also represented in the allotment boundaries.

The Project Area has not been inventoried to determine if Biological Soil Crusts (BSCs) are present. BSCs are a suite of organisms that occupy the first few inches of the soil surface. The major function of BSCs is to increase soil stability and facilitate nutrient cycling in the surface within a few inches of the soil surface. BSC data specific to the northern Great Basin has been lacking in the past.

For a discussion on how BSCs contribute to the functional, structural, and compositional parts of a functioning ecosystem see the technical reference TR-1730-2.

Common BSCs found in the Project Area are included in the following list of genera: Byrum, Cladonia, Collema, Lecanora, Peltigera, Psora, and Tortula. This is not an all inclusive list of potential genera as the allotment has the capacity for greater amounts of higher moisture dependent genera and species.

b. Environmental Consequences

(1) Alternative I: No Action

Current management would continue under the No Action Alternative. Impacts from cattle grazing would continue to occur in areas experiencing spring use. Future condition of soil and BSC resources would be dependent on the condition of other resources, primarily upland and riparian vegetation.

Continuation of current management would affect condition of these vegetation resources and would affect soils and BSCs. Due to slow soil recovery processes, disruption of soils can lead to long-term changes (exist for over 10 years) in soil ecology and productivity. Under this scenario, soils could experience greater impacts as the site-specific vegetation is modified by grazing thereby allowing for greater movement of soils (particularly in high wind or precipitation events).

(2) Alternative II: Partial Livestock Conversion (Proposed Action)

Under the Proposed Action control of sheep distribution through herding would potentially reduce impacts to soil resources. Fewer cattle would be permitted, reducing compaction and other impacts by herbivory in current high use areas and allowing for recovery in areas previously experiencing spring use. Recovery would allow current high use areas to increase the amount of vegetative cover, which would protect the soil from wind/rain erosion and increase soil stability. Implementation of the Proposed Action would help to protect and manage soils and BSCs by reducing erosion, protecting water quality, increasing vegetative cover, and preventing noxious weeds or undesirable plant introductions.

(3) Alternative III: Complete Livestock Conversion

Under this alternative sheep would be the only livestock grazing under this permit. Impacts to soils would be lessened in the northern ends of Boulder Springs and Lake Creek Pastures, which have historically been used more by cattle. Upland vegetation would experience increased use by sheep. This could increase the chance of terracing and soil compaction if the same areas are routinely used. The rest-rotation system, proper herding practices, and once over grazing would limit these impacts to soils.

9. Recreation and Visual Resources

a. Affected Environment

Current discussion and analysis of potential effects to recreation and visual resources are tiered to the Three Rivers PRMP/FEIS (September 1991), and relevant information contained in the following sections is incorporated by reference: 3-17.

The Proposed Action is in Class III/IV Visual Resource Management (VRM) categories. Objectives of VRM Class III category are to partially retain the existing character of the landscape. Level of change to the characteristic landscape should be moderate. Management activities may attract attention but should not dominate the view of the casual observer. Objectives of VRM Class IV category are to allow modification of the existing character of the landscape. Management activities may dominate the view and be the major focus of viewer attention.

The primary recreation activity in Skull Creek Allotment is big game (e.g., mule deer, pronghorn antelope, and elk) hunting. Livestock are not present in the allotment during any of the big game hunting seasons. Other recreation opportunities present include wildlife viewing, camping, hiking, horseback riding, and Off-Highway Vehicle use. Target shooting may also occur within the allotment.

b. Environmental Consequences

(1) Alternative I: No Action

Current vegetative conditions and livestock distribution would remain the same. Primary recreation in this area is hunting and fishing. Under the No Action Alternative, recreation would continue to be maintained.

(2) Alternative II: Partial Livestock Conversion (Proposed Action)

No changes to the types of recreation opportunities present in the Project Area would occur.

The Proposed Action is designed to improve livestock grazing management. This in turn would provide habitat for wildlife. Maintained or improved vegetation would benefit wildlife, which would continue to provide recreational activities.

(3) Alternative III: Complete Livestock Conversion

The recreational effects of this alternative would be comparable to those of the Proposed Action.

10. Social and Economic Values

a. Affected Environment

Current discussion and analysis of potential effects to social and economical are tiered to the Three Rivers PRMP/FEIS (September 1991), and relevant information contained in the following section is incorporated by reference: 3-25.

Skull Creek Allotment is located in Harney County, Oregon.

Livestock raising and associated feed production industries are major contributors to the economy of Harney County. The highest individual agricultural sales revenues in the county are derived from cattle production, which is inextricably linked to the commodity value of public rangelands. The cattle industry provided \$48,782,000 in sales in Harney County (Oregon State University, Extension Service 2007).

Those engaged in ranching and forage production make up a strong component of the fabric of the local societies. Livestock grazing operations on public and private lands can have a stabilizing influence on local employment and standards of living. Hunting, hiking, and other types of dispersed outdoor recreation also contribute to the local economies on a seasonal basis. The undeveloped, open spaces in the county are a tourist attraction and contribute to a share of revenue for local business.

b. Environmental Consequences

(1) Alternative I: No Action

Under the No Action Alternative the value of livestock in the allotment is expected to remain at current levels as rangeland conditions remain stable.

The Federal government would continue to collect grazing permit fees from the permittees and this commodity use on public lands would continue to generate revenues for the Federal government and private sector in each local economy.

At the same time, public lands in and around the Project Area would also continue to contribute social amenities such as open space, scenic quality, and recreational opportunities (including hunting). These amenities enhance local communities and tourism, though the specific contribution of the Project Area is not known.

(2) Alternative II: Partial Livestock Conversion (Proposed Action)

Economic effects from collection of grazing permit fees would be the same as the No Action Alternative.

Sheep grazing in combination with cattle grazing would provide for more even utilization patterns, which could maintain or increase forage quality and production for livestock and wildlife. Providing for sustainable grazing management that improves habitat conditions for wildlife would in turn increase economic opportunities and foster more desirable social opportunities such as hunting.

By maintaining viable ranching operations and improving rangeland conditions in Skull Creek Allotment, the traditions associated with the ranching community of Harney County would be maintained.

(3) Alternative III: Complete Livestock Conversion

The social and economic effects are expected to be the same as the Proposed Action.

11. American Indian Traditional Practices

a. Affected Environment

Current discussion and analysis of potential effects to American Indian traditional practices are tiered to the Three Rivers PRMP/FEIS (September 1991), and relevant information contained in the following section is incorporated by reference: 3-21.

The Skull Creek Allotment area is important to the Burns Paiute Tribe. Medicinal and edible plants are gathered there. Small and big game hunting is a major activity in this area as is obsidian collection for flint knapping by traditional tool makers. Spiritual activities are also practiced in the Skull Creek Allotment. The traditional practice most likely to be affected by any alternative in this EA is plant gathering. The Burns Paiute Tribe uses the Skull Creek Allotment area more than most geographic locations in the area around the reservation.

b. Environmental Consequences

(1) Alternative I: No Action

No change to plant gathering is expected under this alternative.

(2) Alternative II: Partial Livestock Conversion (Proposed Action)

According to discussion in Upland Vegetation section, forb use would be expected to increase with increased use by sheep. Target plant species used by the Burns Paiute people for medicine or food are forbs and would be affected to a greater extent by sheep grazing than cattle grazing. Cattle do not usually graze many of the root species except Allium. The Burns District Archaeologist has noted heavy utilization by cattle on Allium species in the Stinkingwater area east of Burns. Fortunately, Allium species are not a high priority plant for American Indian use food like certain species of biscuitroot and bitterroot. Many of the different biscuitroot species are differentiated by foliage form and flower color. These plants would be grazed at the wrong time (April 21 to June 10) of the year; the opportunity to gather them could be lost. The rest-rotation for Boulder Springs and Lake Creek Pastures would provide an area for forb collection, while the Early Turnout Pasture would be grazed at the beginning of the growing season. The early and short duration grazing use in Early Turnout Pasture should provide years (early versus late springs) of opportunity for forb growth and production.

(3) Alternative III: Complete Livestock Conversion

Effects to plant gathering success would be greater under this alternative than the Proposed Action. Even with herding, the target species of sheep would more likely be forbs and this species choice is in direct conflict with traditional plant gathering in the allotment.

B. Cumulative Effects Analysis

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

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

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

However, "experience with and information about past direct and indirect effects of individual past actions" have been found useful in "illuminating or predicting the direct and indirect effects" of the Proposed Action in the following instances: the basis for predicting the effects of the Proposed Action and its alternatives is based on the general accumulated experience of the resource professionals in the agency with similar actions.

Since 1990, wildfires burned approximately 14,684 acres within 2 miles of Skull Creek Allotment. Only 1,768 acres burned inside the allotment boundary during this period. The most recent fire burned across steep, ponderosa pine covered slopes along the eastern boundary of the allotment in 2008. Dense pine stands were killed in the fire.

Approximately 5,802 acres of aspen, mountain mahogany, ponderosa pine, Douglas-fir, and juniper woodlands were thinned in the last 10 years to maintain and restore healthy rangelands and reduce hazardous fuels. Additional treatments during this time include prescribed fires on 651 acres in ponderosa pine forest adjacent to the northern boundary of the allotment.

Reasonably Foreseeable Future Actions (RFFAs), also relevant to cumulative effects, include those Federal and non-Federal activities not yet undertaken, but sufficiently likely to occur, that a Responsible Official of ordinary prudence would take such activities into account in reaching a decision. These Federal and non-Federal activities that must be taken into account in the analysis of cumulative impact include, but are not limited to, activities for which there are existing decisions, funding, or proposals identified by the bureau. These RFFAs must fall within the geographic scope and timeframe of the analysis being prepared. Continued livestock grazing and the Slickear/Claw Creek Forest Restoration Project (EA OR-025-08-017) are known RFFAs.

Ongoing and RFFAs in the vicinity of the allotment include livestock grazing, thinning and other mechanical treatments, prescribed burning, tree planting, and recreational fishing and hunting. Approximately 700 acres of burned areas will be planted with ponderosa pine trees in the near future to stabilize slopes and facilitate recovery. Thinning and prescribed burning treatments will also take place within the next few years in the Slick Ear Project Area, which covers northern portions of Lake Creek and Boulder Spring Pastures. Approximate acres to be treated are unknown due to the early stages of planning, but the entire Slick Ear treatment boundary within the allotment is 7,045 acres.

Ongoing and RFFAs are not expected to lead to negative cumulative effects to wildlife. Fuels treatments and restoration projects may cause some disturbance and displacement of animals during implementation, but these treatments are likely to be beneficial overall once the vegetation begins to recover in the following two to three growing seasons.

Slicear/Claw Creek Forest Restoration Project will utilize various methods of prescribed fire and mechanical treatments to reduce western juniper and ponderosa pine densities in four dominant vegetative communities: forest areas (ponderosa pine stands), low/stiff sagebrush flats, mountain big sagebrush-bunchgrasses communities, and aspen stands. Mountain mahogany and bitterbrush communities are lumped in as inclusions with the mountain big sagebrush and ponderosa pine plant communities.

1. No Action:

With the Slicear/Claw Creek project occurring along with the current cattle management in Skull Creek Allotment trends in upland, riparian, water quality, wildlife habitat, and livestock management condition would improve. Mountain big sagebrush/bunchgrass plant communities and hydrological conditions within the Project Area would move toward historic conditions by reducing live western juniper density by 70 percent within treated areas (Miller et al. 2005). Reduction in western juniper encroachment into key wildlife habitat dominated by bitterbrush, mountain mahogany, aspen, or riparian hardwoods by 90 percent within the Project Area would increase forage available to domestic livestock and to big game and other wildlife. Removing ponderosa pine and juniper will move stand densities, structure, and composition toward historic conditions. By opening up the canopy of forested areas there would be an increase in shrub and herbaceous understory increasing forage availability and access by livestock and big game.

These tree management activities could bring more opportunities for weed introductions along roads and pile burning, which could have negative impacts on wildlife habitat and livestock forage. Weed treatments and surveys occur in wildfire and fuels Project Areas for 2 to 3 years post wildfire or project treatment.

Juniper and pine cutting, removal, burning, and livestock presence could reduce the quality of a recreational experience and American Indian traditional practices.

2. Partial Livestock Kind Conversion (Proposed Action):

This action would be similar to the No Action Alternative, but with more control in the distribution of livestock by herding sheep. With the implementation of the Slicear/Claw Creek project herbaceous plants would increase providing more available forage to livestock and big game. This trend would help balance potential impacts on forbs grazed by sheep. Forb reduction caused by sheep grazing would be a concern to sage-grouse forage in spring and early summer and to plant gathering by the Burns Paiute Tribe. A benefit by grazing sheep would be the ability to target locations colonized by invasive and noxious weeds.

3. Complete Livestock Kind Conversion:

All effects would be similar to the Proposed Action, except forb consumption by domestic sheep would increase.

#### CHAPTER IV: CONSULTATION AND COORDINATION

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Doug Linn, Natural Resource Specialist (Botany)  
Travis Miller, Lead Preparer, Rangeland Management Specialist  
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Scott Thomas, District Archaeologist

B. Persons, Groups or Agencies Consulted

Permittee #3600216  
Permittee #3601439  
Permittee #3602334  
Permittee #3602818  
Burns Paiute Tribe  
Oregon Department of Fish and Wildlife

C. Public Notification

Permittee #3600216

Permittee #3601439

Permittee #3602334

Permittee #3602818

Burns Paiute Tribe

Oregon Department of Fish and Wildlife

Oregon Natural Desert Association

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**Migratory Birds**

On January 11, 2001, President Clinton signed the Migratory Bird Executive Order 13186. This Executive Order outlines the responsibilities of Federal agencies to protect migratory birds. The United States has recognized their ecological and economic value to this country and other countries by ratifying international, bilateral conventions for the conservation of migratory birds. These migratory bird conventions impose substantive obligations on the United States for conservation of migratory birds and their habitats. The United States has implemented these migratory bird conventions through the Migratory Bird Treaty Act. President Clinton's Migratory Bird Executive Order directs executive departments and agencies to take certain actions to further implement the Migratory Bird Treaty Act. As defined in the executive order, "action" means a program, activity, project, official policy (such as a rule or regulation), or formal plan directly carried out by a Federal agency. The executive order further states that each Federal agency taking actions that have, or are likely to have, a measurable negative effect on migratory bird populations is directed to develop and implement, within 2 years, a Memorandum of Understanding (MOU) with the U.S. Fish and Wildlife Service that shall promote conservation of migratory bird populations. The term "action" would be further defined in this MOU as it pertains to each Federal agency's own authorities and programs.

A list of the migratory birds affected by the President's executive order is contained in 43 CFR 10.13. References to "species of concern" pertain to those species listed in the periodic report "Migratory Nongame Birds of Management Concern in the United States;" priority migratory bird species as documented by established plans, such as Bird Conservation Regions in the North American Bird Conservation Initiative or Partners in Flight physiographic areas; and those species listed in 50 CFR 17.11.

**BLM Special Status Species**

**Definitions of Special Status Species:**

Federally Threatened or Endangered Species: Any species that the U.S. Fish and Wildlife Service has listed as a threatened or endangered species under the Endangered Species Act throughout all or a significant portion of its range.

Proposed Threatened or Endangered Species: Any species that the Fish and Wildlife Service has proposed for listing as a Federally threatened or endangered species under the Endangered Species Act.

Candidate Species: Plant and animal taxa that are under consideration for possible listing as threatened or endangered under the Endangered Species Act.

BLM Sensitive Species: Species 1) that are currently under status review by the U.S. Fish and Wildlife Service, 2) whose numbers are declining so rapidly that Federal listing may become necessary; 3) with typically small and widely dispersed populations; or 4) that inhabit ecological refugia or other specialized or unique habitats.

**Identified Resource  
Conflicts/Concerns**

Water quality does not currently meet DEQ water quality standards for beneficial uses.

Active erosion occurs in the allotment.

No forage allocations for elk have been made.

Riparian or aquatic habitat is in less than good habitat condition.

At this time the following special species or its habitat is known to exist within the allotment: redband trout, sage-grouse. Current range condition, level or pattern of utilization may be unacceptable, or carry capacity (under current management practices) may be exceeded.

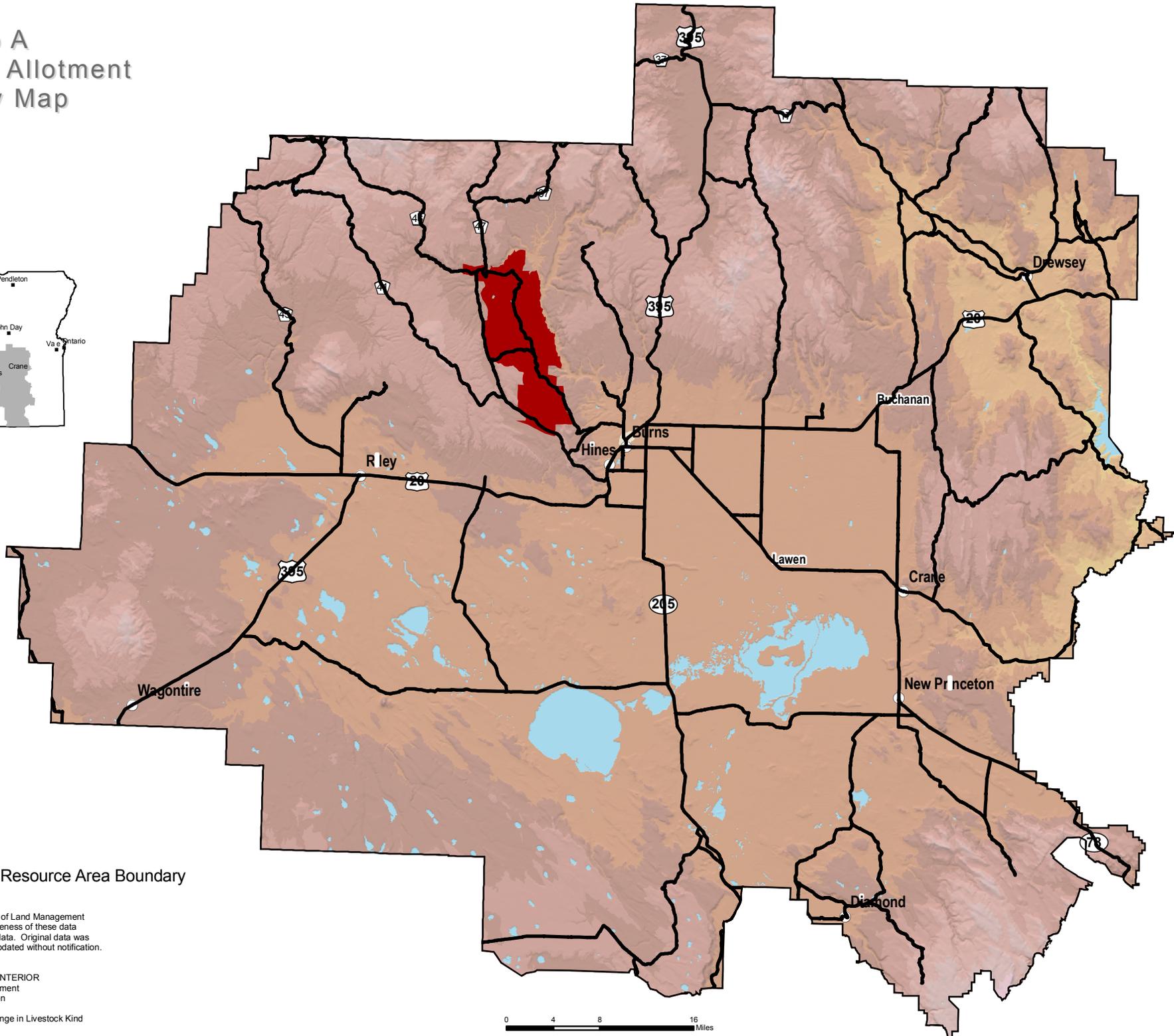
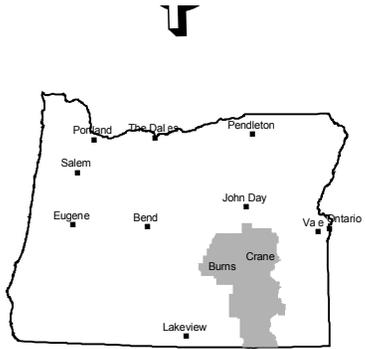
**Management  
Objectives**

Improve surface water quality on public lands to meet or exceed quality standards for all beneficial uses as established by the DEQ, where BLM authorizes actions are having a negative effect on water quality. Improve and maintain erosion condition in moderate or better erosion condition. Allocate forage to meet elk demands.

Improve and maintain riparian aquatic condition in good or better habitat condition. Protect SSS or its habitat from impact by BLM-authorized actions.

Maintain or improve rangeland condition and productivity through a change in management practices and/or reduction in active use.

# Map A Skull Creek Allotment Vicinity Map



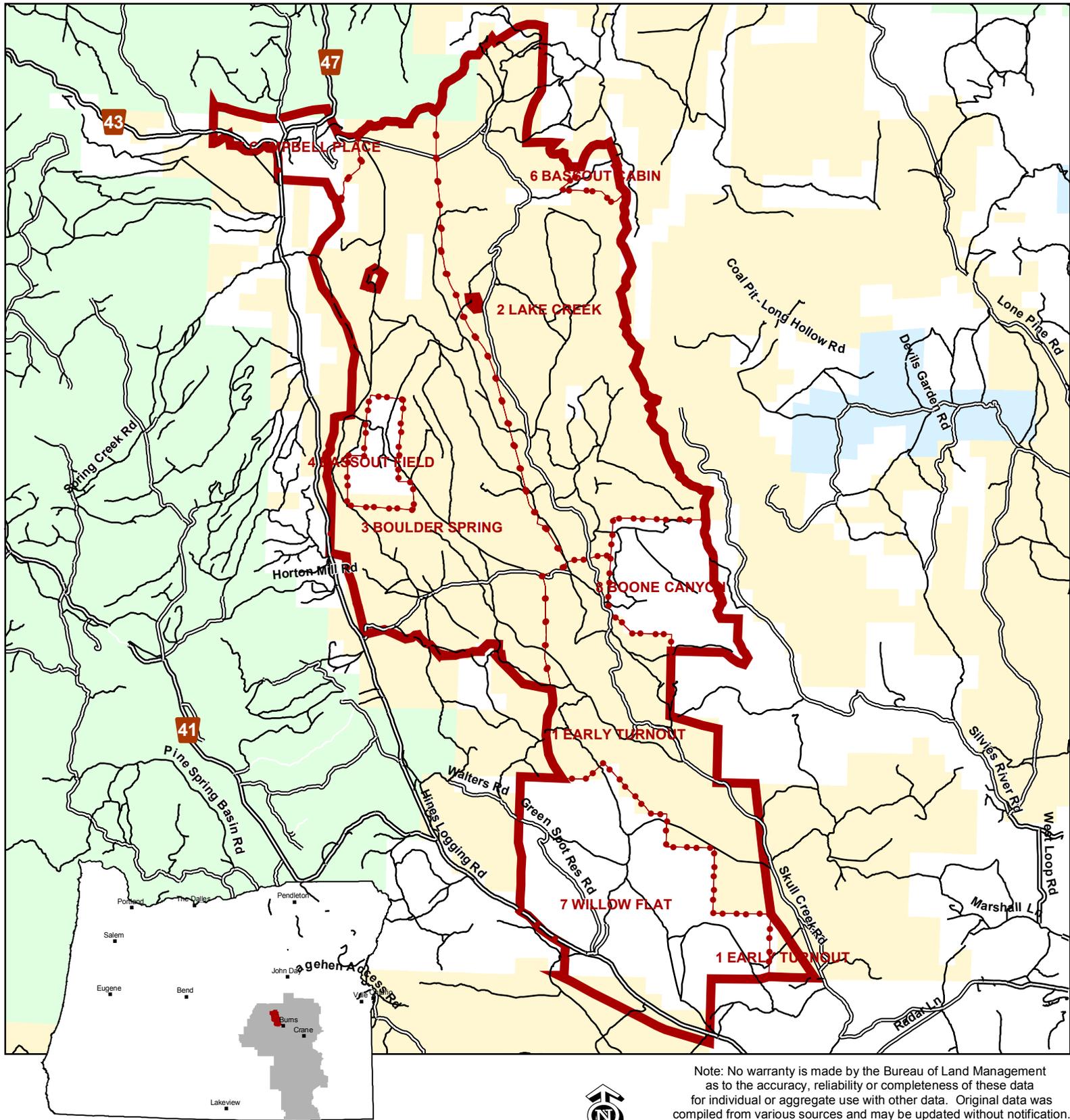
## Legend

-  Major Roads
-  Allotment
-  Three Rivers Resource Area Boundary

Note: No warranty is made by the Bureau of Land Management as to the accuracy, reliability or completeness of these data for individual or aggregate use with other data. Original data was compiled from various sources and may be updated without notification.

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

# Map B Skull Creek Allotment Land Status



Note: No warranty is made by the Bureau of Land Management as to the accuracy, reliability or completeness of these data for individual or aggregate use with other data. Original data was compiled from various sources and may be updated without notification.

**Legend**

Allotment Boundary	Bureau of Land Management	Paved Road
Pasture Boundary	Wilderness Study Area	Non-Paved Improved Road
Private (White)	State	Primitive or Unknown Road Surface
U. S. Forest Service		

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

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