



United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Medford District Office
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IN REPLY REFER TO:
1792/4120(116)

SEP 11 2009

Dear Interested Public:

The enclosed *Environmental Assessment* (EA) for the Cove Creek Grazing Lease Renewal project is available for public review. The public review period, advertised on the Medford Bureau of Land Management (BLM) Website, ends on September 28, 2009.

The BLM proposes to modify the existing livestock grazing lease for the Cove Creek Allotment to change the season of use and require additional terms and conditions for resource protection. The modified grazing lease would be issued authorizing 49 cattle (75 AUMs) to graze within the Cove Creek Allotment from June 1 through July 15. Additional terms and conditions would also be required such as restricting salt block placement to at least ¼ mile from streams (intermittent and perennial), wet areas, ponds, springs, seeps, and special status species, and using active herding to distribute cattle away from degraded riparian areas. These changes are proposed to reduce impacts to riparian areas and plant communities within the allotment in order to make progress towards meeting the Standards for Rangeland Health in the Cove Creek Grazing Allotment.

We welcome your comments on the content of the EA. We are particularly interested in comments that address one or more of the following: (1) new information that would affect the analysis, (2) information or evidence of flawed or incomplete analysis; (3) BLM's determination that there are no significant impacts associated with the proposed action, and (4) alternatives to the Proposed Action that would respond to purpose and need. Specific comments are the most useful. **Comments are due by 4:30 PM, September 28, 2009.**

Before including your address, telephone number, email address, or other personal identifying information in your comment, be advised that your entire comment, including your personal identifying information, may be made publicly available at any time. While you can ask us in your comment to withhold your personal identifying information from public review, we cannot guarantee that we will be able to do so.

All comments should be made in writing and mailed or delivered to Kristi Mastrofina, Ashland Resource Area, 3040 Biddle Road, Medford, OR 97504. Further information on this proposed project is available at the Medford District Office, 3040 Biddle Road, Medford, Oregon 97504 or by calling the Ashland Resource Area Planning Department. Contact Kristi Mastrofina at (541) 618-2384.

Sincerely,


John Gerritsma
Field Manager
Ashland Resource Area

Enclosure

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
MEDFORD DISTRICT OFFICE
ASHLAND RESOURCE AREA

ENVIRONMENTAL ASSESSMENT

for the

COVE CREEK GRAZING LEASE RENEWAL

(DOI-BLM-OR-M060-2009-0014-EA)

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CHAPTER 1 - PURPOSE AND NEED FOR ACTION

A. INTRODUCTION

The Bureau of Land Management (BLM), Ashland Resource Area proposes to renew the 10-year grazing lease on the Cove Creek Allotment. In accordance with the National Environmental Policy Act of 1969, this Environmental Assessment (EA) documents the environmental analysis conducted to estimate the site-specific effects on the human environment that may result from the renewal of this grazing lease.

B. WHAT IS THE BLM PROPOSING, AND WHY?

This section provides a brief description of BLM's proposal and explains the underlying need to which the agency is responding in proposing this action. The Medford BLM authorizes livestock grazing as a component of its multiple-use program under the Federal Lands Policy and Management Act of 1976 (FLPMA) (43 U.S.C. § 1701 et seq.). The objectives of the regulations set forth under 43 CFR 4100, Grazing Administration, are to "establish efficient and effective administration of public rangelands" so as to "provide for the sustainability of the western livestock industry and communities dependent upon productive, healthy, public rangelands."

Under existing law (Public Law 108-108, Section 325), grazing leases that were due to expire during fiscal year 2004-2008, prior to the completion of the lease renewal process, were temporarily renewed with existing terms and conditions. The Cove Creek grazing lease was temporarily renewed and there is now a need to conduct the required environmental analysis for renewal of this lease.

The BLM proposes to modify the existing livestock grazing lease for the Cove Creek Allotment to change the season of use and require additional terms and conditions for resource protection. The modified grazing lease would be issued authorizing 49 cattle (75 AUMs) to graze within the Cove Creek Allotment from June 1 through July 15. Additional terms and conditions would also be required such as restricting salt block placement to at least ¼ mile from streams (intermittent and perennial), wet areas, ponds, springs, seeps, and special status species, and using active herding to distribute cattle away from degraded riparian areas. These changes are proposed to reduce impacts to riparian areas and plant communities within the allotment in order to make progress towards meeting the Standards for Rangeland Health in the Cove Creek Grazing Allotment. The Cove Creek Allotment is located south of the Dead Indian Memorial Highway off of the Cove Road in T. 39 S., R. 2 E., Sections 2, 3, 4, 9, 10 and, 11.

Standards for Rangeland Health and Guidelines for Livestock Grazing Management for Public Lands in Oregon and Washington meets the requirements and intent of 43 CFR, Subpart 4180 (Fundamentals of Rangeland Health) and provide a basis for assessing the rangeland condition and trend. A Rangeland Health Assessment was completed for the Cove Creek Allotment in 2008, which assessed the conditions and trends of the Cove Creek Grazing Allotment against the Standards for Rangeland Health. A preliminary determination on the results of the assessment was made in November 2008, and is summarized below under the section "Relevant Assessments & Plans". The Rangeland Health Assessment for the Cove Creek Allotment is available on BLM's Website: <http://www.blm.gov/or/districts/medford/plans/inventas.php>. It is BLM's determination (although preliminary), based on the Rangeland Health Assessment, that only two of the five standards, Upland Watershed Function and Ecological Processes, are being met. The Standards for Riparian/Wetland Watershed Function, Water Quality, and Native, T & E, and Locally Important Species are not being met primarily due to current livestock grazing management practices.

There is a need to develop grazing management for the Cove Creek Allotment that is operationally and administratively feasible, and addresses the requirements of 43 CFR 4180.1, which is to make substantial progress towards meeting the Standards for Rangeland Health in the Cove Creek Grazing Allotment.

C. COVE CREEK ALLOTMENT RANGELAND HEALTH ASSESSMENT

Rangeland Health Assessments are completed on grazing allotments prior to the consideration of a grazing lease renewal. These assessments are conducted by an interdisciplinary team of resource specialists and are based on field visits to the allotments and evaluation of all available data. The Standards for Rangeland Health provide a basis for assessing and monitoring ecological and rangeland condition and trend. The five standards, listed below, were used to assess the condition and trend in the Cove Creek Grazing Allotment. Associated with each standard is a list of indicators that are used for completing an assessment of the standard. For each indicator the evaluators assign the degree of departure from the ecological site description and/or ecological reference condition. The evaluation of indicators provides a basis for making a determination as to whether each standard is, or is not being met. An evaluation of causal factors provides a basis for a determination as to whether the current grazing practices are contributing to meeting or not meeting the standards. Preliminary findings documented in the Draft Cove Creek Allotment Rangeland Health Determination provided a basis for formulating the agencies proposed action for renewing the Cove Creek Grazing Lease. The following is a brief summary of the Draft Cove Creek Rangeland Health Determination. More detailed information concerning resource conditions is contained under the Affected Environment Section(s) of this Environmental Assessment.

- **Standard 1 (Watershed Function-Uplands) is being met**

The main soil limitations affecting livestock grazing are erosion, compaction, the depth to bedrock, and the slope. This grazing system does not significantly diminish the health and function of the watershed. This is accomplished by maintaining adequate vegetative cover, healthy root systems, and soil moisture content. These factors aid in maintaining existing infiltration, percolation, runoff and erosion rates. The Rangeland Health Field Assessment (RHFA) indicators pertaining to Soil/Site Stability revealed that all 10 indicators were rated none to slight departure from the ecological site description.

- **Standard 2 (Watershed Function-Riparian/Wetland Areas) is not being met, current livestock grazing management practices are significant factors**

Surveys indicate that 3.0 stream miles (67%) within the allotment were found to be Functional at Risk with an upward trend (improving). The surveys indicate 0.5 stream miles (10%) as Functional at Risk with a downward trend (degrading). The surveys rated 0.8 miles (17%) of channels as Non-Functional. Streams classified as Proper Functioning made up 0.3 miles (6%). According to the BLM stream survey, actively eroding banks and fine sediment percentages were high in the surveyed reaches of the Cove Creek allotment. Within the allotment, 1.8 stream miles on BLM land (24%) were found to have actively eroding banks with the level of erosion greater than 30%. Surveys also showed that 2.6 miles (36%) of the stream reaches had fine sediment levels greater than 30%; this level is above the “desirable” benchmark set by Oregon Dept. of Fish and Wildlife. A one meter exclosure cage was established near a spring in T. 39 S., R. 2 E. in Section 3 to monitor vegetation condition. Photos were taken throughout the 2003 and 2004 grazing seasons to monitor riparian vegetation and soil conditions inside and outside the exclosure. Trampling, soil disturbance, and stubble heights below the recommended 6 to 8 inches were observed outside the exclosure and throughout the spring area. In 2007, extensive trampling, soil disturbance, and stubble heights below 6 inches were observed during stream surveys of riparian areas, wet meadows and springs in T. 39 S., R. 2 E. in Sections 3 and 11. During field visits in July and November 2008, hydrology staff documented excessive grazing impacts at these locations and the presence of cows in Section 11 five months beyond the permitted season of use.

- **Standard 3 (Ecological Processes) is being met**

The forested portion of this allotment supports a diverse mix of forest plant communities where the energy, nutrient, and hydrologic cycles are balanced and utilization is low enough to not disrupt these cycles. Invasive plant species are generally confined to some road-sides or localized disturbed areas. The dry meadows and oak woodland plant communities support a diverse mix of

plant species. However, invasive plant species are scattered in patches throughout the majority of the non-conifer areas, particularly annual grasses. In addition to reducing habitat quality for wildlife, annual grasses have shallower root systems and shorter life cycles than native perennial grasses, and thus have reduced capacity to hold the soil and retain water and nutrients. Introduction and establishment of exotic annual grasses occurred in past decades, and current livestock grazing is not intense enough to contribute to additional conversion of native plant communities to exotic annual grasslands.

- **Standard 4 (Water Quality) is not being met, current livestock grazing management practices are significant factors**

Within the Cove Creek Allotment, there are no streams listed on DEQs 2004/2006 303 (d) list. BLM stream surveys conducted in 2007 in the analysis area (USDI 2007) identify scattered locations in T. 39 S., R. 2 E., Sections 3 and 11 where livestock grazing is contributing to stream sedimentation through trampling of streambanks. In 2007, extensive trampling, soil disturbance, and stubble heights below 6 inches were observed during stream surveys of riparian areas, wet meadows and springs in T. 39 S., R. 2 E., Sections 3 and 11. During field visits in July and November 2008, hydrology staff documented excessive grazing impacts at these locations and the presence of cows in Section 11, five months beyond the permitted season of use. Concentrated livestock grazing is contributing to sedimentation, destabilization of streambanks, and acceleration of changes in channel morphology.

- **Standard 5 (Native, T&E, and Locally Important Species) is not being met, current livestock grazing management practices are significant factors**

The allotment is not meeting the Standards and Guidelines for protection of habitat for terrestrial and aquatic wildlife species. Current use levels on this allotment are light with small < 1acre patches of heavy use in semi-wet meadows and heavy use in riparian areas in T. 39 S., R. 2 E., Sections 3 and 11 therefore; the foothill yellow-legged frog is likely to be adversely affected by the grazing use in those areas. There are no effects to federally listed SONC coho salmon or their critical habitat as a result of grazing. There are no effects to federally listed Northern Spotted Owls or their critical habitat as a result of grazing. The allotment is also meeting the Standards and Guidelines for protection of habitat of special status vascular and non-vascular plant species. The allotment is outside the range of federally listed plants so there is no impact to any federally threatened plant species, there are four populations of sensitive species, and they occur in areas receiving slight-light or seldom use and are not impacted by the current authorized grazing.

D. DECISION FRAMEWORK

The Ashland Field Manager, as the responsible official, will make a decision based on the interdisciplinary teams analysis summarized in this Environmental Assessment. The decision will include a determination of whether or not the impacts of the Proposed Action are significant to the human environment. If the impacts are determined to be insignificant, a Finding of No Significant Impact (FONSI) can be issued and a decision implemented. If this EA determines that the significance of impacts are unknown or greater than those previously analyzed and disclosed then a project specific EIS must be prepared.

E. CONFORMANCE WITH EXISTING LAND USE PLANS

The lease renewal has been reviewed and found to be in conformance with the 1995 Medford District Proposed Resource Management and tiered to the 1994 Environmental Impact Statement (EIS) for the Proposed Resource Management Plan for BLM's Medford District (USDI 1994). The Medford District Resource Management Plan incorporates the 1984 Medford Grazing Management Program EIS and the Rangeland Program Summary ROD (USDI 1984). The Medford RMP, Medford Grazing Management Program EIS ROD, and the Rangeland Program Summary ROD are all programmatic documents. District/Region-wide Management Actions/Direction, Monitoring, and Environmental Consequences are discussed in those documents.

The proposed action and alternatives are compliant with the direction given for the management of public lands in the Medford District by the Oregon and California Lands Act of 1937 (O&C Act), Federal Land Policy and Management Act of 1976 (FLPMA), the Endangered Species Act (ESA) of 1973, the Clean Water Act of 1987, Safe Drinking Water Act of 1974 (as amended 1986 and 1996), Clean Air Act, the Archaeological Resources Protection Act of 1979, the Taylor Grazing Act (TGA) of 1934, the Public Rangelands Improvement Act of 1978, the Wild Free-Roaming Horses and Burros Act of 1971, and the National Environmental Policy Act of 1969.

F. SCOPING AND ISSUES

Scoping is the name for the process used to determine the scope of the environmental analysis to be conducted. It is used early in the NEPA process to identify (1) the issues to be addressed, (2) the depth of the analysis, and (3) potential environmental impacts of the proposed action.

A scoping letter was sent February 27, 2009 to interested parties notifying them of the BLMs intention to conduct an environmental analysis for the renewal of the 10-year grazing lease on the Cove Creek Allotment. The letter sought to gather comments and issues based on a range of options seeking to satisfy the needs described above. Three letters were received.

An interdisciplinary (ID) team of resource specialists reviewed the proposal and all pertinent information, including public input received, and identified relevant issues to be addressed during the environmental analysis. These issues will be used to identify required project design features and to focus the analysis of environmental effects that may result from the implementation of BLM's proposed action or alternatives. Grazing is proposed at varying levels by alternative in the Cove Creek Grazing Allotment. The following questions frame the issues determined to be relevant to the Cove Creek Grazing Lease Renewal proposal.

- What is the potential for effects to riparian and wetland areas and associated aquatic habitat?
- What is the potential for effects to water resources?
- What it the potential for effects to fish?
- What is the potential for effects to botanical resources?
- What is the potential for effects to wildlife?
- What is the potential for effects to soils and site productivity?

CHAPTER 2 - ALTERNATIVES

A. ALTERNATIVES ANALYZED IN DETAIL

This chapter describes the Proposed Action Alternative, and alternatives to the proposed action, developed by the ID Team to achieve objectives identified in the Purpose and Need statement in Chapter 1. A no-action alternative, which assumes a continuance of the existing lease, is presented to form a base line for analysis. Lease Terms and Conditions, included as required features of Alternatives 1 and 2 are important for reducing impacts of grazing and considered in the analysis of anticipated environmental impacts.

Alternative 1- No Action

Under the No Action Alternative, the grazing lease on the Cove Creek Allotment would be issued at the same animal unit month (AUM) level, season of use and with the same terms and conditions currently in effect. One AUM is the amount of forage necessary for the sustenance of one animal unit, i.e. one cow/calf pair or one cow, heifer, steer, or bull for a period of one month. Total AUMs represent the number of animal units (or cattle) multiplied by the number of months included in the season of use.

Grazing Management

The grazing lease would be issued for a term of 10 years continuing livestock grazing during the permitted season with 49 cattle from May 1 to June 15 totaling (75 AUMs). The entire allotment is approximately 2,985 acres and the BLM-managed portion of the allotment is 1,207 acres.

Terms and Conditions of the Current Lease

The following terms and conditions are specified by the authorized officer in accordance with 43 CFR 4130.3-1 and 4130.3-2, and are intended to assist in achieving management objectives, provide for proper range management, or assist in the orderly administration of the public rangelands.

- Turn-out will be based upon range readiness as determined by BLM*.
- Actual use reports are to be returned within 15 days of off-date.
- Maintenance of assigned range improvements is a requirement of lease.
- Billings are due upon receipt and must be paid prior to turn-out.
- Late payment may result in unauthorized use and/or interest penalty.
- BLM approved ear tags may be a requirement of lease.

*Range readiness is generally determined to be when the soil moisture is low enough to prevent impacts from livestock hooves and damage to soils, and the stage of plant growth has progressed enough to where grazing may begin without damage to vegetation. Therefore, the turn-out dates described in this EA could potentially be adjusted slightly by the BLM based on range readiness.

Range Improvements & Maintenance

There are currently five rangeland improvement projects in the Cove Creek Allotment. Under the No Action Alternative, the BLM would continue to maintain four of the improvement projects, and the lessee would be responsible for maintaining one of the projects (Table 2-1). Maintenance consists of the timely repair through the input of sufficient labor and materials to keep improvements in usable condition for the purposes intended over the normal expected and extended life span (based on required inputs of new materials or updates to design over time). In the event that repairs would no longer be effective in maintaining the proper function of range improvements, the lessees would notify the BLM to determine replacement needs.

Existing enclosure fences would be maintained to exclude livestock at all times. Fence maintenance includes: periodic inspection for functionality, keeping wire tight and properly attached to posts with approved materials, keeping stays functional, repairing gates, repairing drainage crossings, splicing broken wire, replacing segments of wire when worn out, and any other work necessary to keep fences functional.

Maintenance for springs, pipelines, and troughs, includes: periodic inspection, repair or replacement of worn or damaged parts, repair of leaks, removing trash or silt, winterizing the facility, and maintaining wildlife escape ramps.

Failure of the lessee to maintain assigned range improvements to BLM standards could result in an evaluation for damages and compensation to cover maintenance deficiencies based on non-compliance with lease Terms and Conditions and other penalties defined in 43 CFR 4170 *Penalties*, which may include withholding the annual use authorization, temporary or permanent reductions in AUMs, or lease cancellation.

Alternative 2 - Proposed Action

This alternative would modify the existing livestock grazing lease to change the season of use in the Cove Creek Allotment. Under this alternative a modified grazing lease would be issued authorizing 49 cattle (75 AUMs) to graze within the Cove Creek Allotment. The season of use would be changed to June 1 through July 15. This alternative is proposed to reduce impacts to riparian areas and plant communities within the allotment.

The following terms and conditions are specified by the authorized officer in accordance with 43 CFR 4130.3-1 and 4130.3-2, and are intended to assist in achieving management objectives, provide for proper range management, or assist in the orderly administration of the public rangelands.

- Turn-out will be based upon range readiness*.
- Actual use reports are to be returned within 15 days of off-date.
- Maintenance of assigned range improvements is a requirement of lease.
- Billings are due upon receipt and must be paid prior to turn-out.
- Late payment may result in unauthorized use and/or interest penalty.
- BLM approved ear tags may be a requirement of lease.
- Lessee would conduct active management practices such as herding to promote livestock distribution to avoid sensitive areas and site damage from overuse.
- Lessee would limit use of riparian areas accessible by livestock that are functioning at risk or non-functional in Sections 3 and 11 by herding and salting the livestock.
- Lessee shall provide reasonable administrative access across private and leased lands to the Bureau of Land Management for the orderly management and protection of the public lands.
- Salt blocks would be placed at least ¼ mile from streams (intermittent and perennial), wet areas, ponds, springs, seeps, and special status species.
- All livestock would be removed from the allotment on the schedule off-date.

Range Improvements & Maintenance

Under this alternative, maintenance of the five range improvement projects would become the responsibility of the lessee, as noted in Table 2-1 below. A more detailed description of maintenance requirements is included under Alternative 1, above.

The existing water development (project #750080) in T. 39 S., R. 2 E. in Section 11 would be redesigned to install an off-site trough and construct an enclosure around the pond. This would include adding additional pipe to install a trough.

Alternative 3 - No Grazing

Under the no grazing alternative the grazing lease would not be renewed on the Cove Creek Allotment. In accordance with 43 CFR 4110.3-3, active use of the allotments would terminate at the close of the 2009 grazing season.

Terms and Conditions

None.

Maintenance of Range Improvements

Under the Alternative 3, the BLM would continue to evaluate and maintain or remove the five rangeland improvement projects (Table 2-1). The lessees would not be responsible for maintaining any range improvement projects.

B. COMPARISON OF ALTERNATIVES

Table 2-1. Rangeland Improvement Projects by Maintenance Responsibility by Alternative

Project Name	Range Improv. No.	Project Description	Alt. 1 Maint. Resp. (current lease)	Alt. 2 Maint. Resp.	Alt. 3 Maint. Resp.
Cove Creek Detention Dam #1	750083	Water Development	BLM	Lessee	BLM
Cove Creek Detention Dam #2	750082	Water Development	BLM	Lessee	BLM
Cove Creek Detention Dam #3	750081	Water Development	BLM	Lessee	BLM
Cove Creek Pipe Pump Chance	750080	Pump Chance, Trough, and Fence	BLM	Lessee	BLM
Cove Creek Spr. #2	750262	Water Development & Trough	Lessee	Lessee	BLM

Table 2-2. Proposed Level of AUMs and Season of Use by Alternative

Comparison Factor	Alternative 1 No Change	Alternative 2 Modify to Decrease Intensity	Alternative 4 No Grazing for Ten years
Numbers of Cattle	49	49	0
Season-of-Use	May 1 to June 15	June 1 to July 15	No grazing for 10-years
Total AUMs	75	75	0
Days on the Allotment	46	45	0
Rangeland Improvements	BLM Maintained: 4 Lessee Maintained: 1	BLM Maintained: 0 Lessee Maintained: 5	BLM Maintained: 5 Lessee Maintained: 0

CHAPTER 3-AFFECTED ENVIRONMENT AND ENVIRONMENTAL IMPACTS

A. INTRODUCTION

The Affected Environment describes the existing conditions of the project planning area and associated analysis areas, and sets the environmental baseline for comparing the effects of the alternatives, including the No-Action Alternative. This chapter describes the present conditions of each affected resource (soils, water, vegetation, wildlife, etc.) within the proposed Cove Creek Lease Renewal planning and analysis areas, followed by the estimated environmental effects of implementing the alternatives. The affected environment is described to the level of detail needed to determine the significance of impacts to the environment of implementing the Proposed Action or alternatives.

The impact analysis addresses direct, indirect, and cumulative effects of implementing each of the alternatives on all identified affected resources. Because no new management is proposed under Alternative 1, the no-action alternative, the effects described reflect the direct and indirect impacts shaped by ongoing management including the current Cove Creek Allotment grazing lease. Discussion for Alternative 2, the proposed action alternative, reflects the direct and indirect impacts of authorizing the new version of the Cove Creek Allotment grazing lease. Discussion of Alternative 3, the no-grazing alternative, evaluates the direct and indirect consequences of eliminating grazing on the Cove Creek Allotment.

The analysis areas for actions proposed under this EA vary by resource. For all resources it includes the project area, which encompasses the areas where actions are proposed for the Cove Creek Lease Renewal.

B. CONSIDERATION OF CUMULATIVE EFFECTS

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.” 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.” The importance of “past actions” is to set the context for understanding the incremental effects of the proposed action. This context is determined by combining the current conditions with available information on the expected effects of other present and reasonably foreseeable future actions.

The analysis of the effects of other present and reasonably foreseeable actions relevant to the effects of the proposed action is necessary. How each resource analysis uses the information concerning other present and reasonably foreseeable actions is dependent on the geographic scale of concern and attributes considered during each resource analysis. Reasonably foreseeable actions are considered and analyzed as appropriate specific to each affected resource.

Silvicultural Management

Pre-commercial thinning is planned for several units over the next 2-5 years with manual pruning of the lower branches for improved wood quality, dependent on funding.

Table 3-1. Silvicultural Treatments within the Cove Creek Allotment

Unit	Location	Silviculture Prescription Proposal			
		Vascular/Non-vascular Botany Surveys	Hand Pruning *	Pre-commercial Thinning	Acres
Cove Creek #4	T39S-R2E-11	Summer-2010	Fall-2010/2011	Completed	25
Cove Creek #5	T39S-R2E-11	No Treatment	No Treatment	Completed	29
Cove Creek #6	T39S-R2E-03	No Treatment	No Treatment	Completed	18
Cove Creek #7	T39S-R2E-03	No Treatment	No Treatment	Completed	15
Cove Creek #8	T39S-R2E-9/10	Summer-2010	Fall-2010/2011	Completed	08
Cove Creek #9	T39S-R2E-09	Summer-2010	Fall-2010/2011	Completed	20
Cove Creek #10	T39S-R2E-09	Summer-2009	No Treatment	Fall-2010	13

*Manual pruning will be dependent on funding for 6320 silviculture program in Fiscal Year 2010/2011.

Sampson Cove Timber Sale

Approximately 150 acres of the upcoming Sampson Cove timber sale area is within the Cove Creek grazing allotment. Although the future project can be associated with a general geographic area, and would be designed to implement forest health a timber resource management actions/objectives of the Medford District RMP, the exact proposal is not completed at this time. Once a project proposal has been developed, scoping would be initiated along with an environmental analysis process in compliance of the National Environmental Policy Act (NEPA). Public scoping is anticipated to begin in the fall of 2009 with project activities possible in the summer of 2010. The cumulative effects analyses completed for this future timber sale project would consider past, present, and reasonable foreseeable actions at the time of the analysis, including this Cove Creek Grazing Lease Renewal project. The resulting Sampson Cove Timber Sale EA would be subject to public and administrative review once completed.

C. PROPOSED MITIGATION MEASURE

Two years of rest is recommended to allow for improvement of the function of the streams, wetlands, springs and seeps. This proposed mitigation measure is not considered in the resource effects analyses detailed below. However, if selected by the Responsible Official, the Ashland Resource Area Field Manager, this proposed mitigation would allow for some modest recovery of vegetation on streambanks and in the hotspots in Section 3 and 11. The WQRP recommends improving riparian rooting strength and streambank roughness by allowing historic streambank failures to revegetate. The lessee elected non-use during the 2009 grazing season, therefore one year of rest has occurred. Monitoring of riparian vegetation and bank condition could evaluate the results of the first year of rest and potentially a second year of rest to determine readiness of the allotment to support grazing use with lower potential for effects to riparian conditions than disclosed below.

D. HYDROLOGY

1. Affected Environment

This allotment is in the upper reaches of the Bear Creek Watershed near the divide between the Rogue and Klamath basins in the southern Cascade Range. Mild, wet winters and hot, dry summers characterize the Upper Bear Creek Watershed. Elevation within the allotment ranges from 2500 feet to 4900 feet. Rain predominates in the lower elevations (below 3,500 feet) with the majority occurring in the late fall, winter, and early spring. A mixture of snow and rain occurs between approximately 3,500 feet and 5,000 feet and this area is referred to as either the rain-on-snow zone or transient snow zone (USDI 2000:19). This allotment includes riparian meadows, springs and headwater tributaries to Cove Creek and a section of the mainstem of Dosier Creek. Within the allotment boundary, on BLM land there are 2.0 miles of perennial streams, 6.1 miles of intermittent streams, and 4.3 miles of dry draws.

a. Water Quality

The Oregon Environmental Quality Commission has adopted numeric and narrative water quality standards to protect designated beneficial uses. In practice, water quality standards have been set at a level to protect the most sensitive uses. Cold-water aquatic life such as salmon and trout are the most sensitive beneficial uses in Bear Creek and its tributaries (ODEQ 2004:5). The Oregon Department of Environmental Quality (DEQ) is required by the federal Clean Water Act (CWA) to maintain a list of stream segments that do not meet water quality standards for one or more beneficial uses. This list is called the 303(d) list because of the section of the CWA that makes the requirement. DEQ's 2004/2006 303(d) list is the most recent listing of these streams (ODEQ 2006a).

The BLM is recognized by Oregon DEQ as a Designated Management Agency for implementing the Clean Water Act on BLM-administered lands in Oregon. The BLM and DEQ have a Memorandum of Agreement (MOA) that defines the process by which the BLM will cooperatively meet State and Federal water quality rules and regulations. In accordance with the MOA, the BLM in cooperation with the Forest Service, DEQ, and the Environmental Protection Agency is implementing the *Forest Service and Bureau of Land Management Protocol for Addressing Clean Water Act Section 303(d) Listed Waters* (USDA and USDI 1999). Under the Protocol, the BLM will protect and maintain water quality where standards are met or surpassed, and restore water quality limited waterbodies within their jurisdiction to conditions that meet or surpass standards for designated beneficial uses. The BLM would also adhere to the State Antidegradation Policy (OAR 2005; 340-041-0004) under any proposed actions. The DEQ has determined the Total Maximum Daily Load (TMDL) for Upper Bear Creek. A water quality restoration plan (WQRP) for BLM-administered lands in the Upper Bear Creek Analysis Area (USDI 2008) was prepared by the BLM and approved by the DEQ. Recovery goals focus on protecting areas where water quality meets standards and avoiding future impairments of these areas, and restoring areas that do not currently meet water quality standards.

There are no 303(d) listed streams within the Cove Creek Allotment. However, Cove Creek is a tributary to Walker Creek, a stream listed for exceeding the 55.0°F 7-day statistic for spawning salmonids during October 1- May 31. Walker Creek remains a category 4A stream, water quality limited, TMDL approved. BLM collected summer stream temperature data on Dosier Creek, a tributary to Cove Creek, in 1999 as part of a coordinated effort with DEQ for the Bear Creek TMDL. The 7-day statistic for Dosier Creek of 63.7°F at the section 34/3 border did not exceed either the 1996 or the 2004 temperature criteria. However, the proximity of this single year statistic to the temperature criteria warrants acknowledgement. Stream temperature and sedimentation can be affected by grazing.

Sedimentation associated with channel erosion is ongoing in some portions of the allotment. During BLM stream surveys (USDI 2007), the tendency for streambank failure was evaluated with a "slump potential" rating (Table 3-2). Cove Creek has a high number of slumps present. In general, channel stability on BLM-managed lands is expected to improve as Riparian Reserves mature and additional

structural material enters the channel area. BLM stream surveys conducted in 2007 in the analysis area (USDI 2007) identify scattered locations in T. 39 S., R. 2 E., Sections 3 and 11 where livestock grazing is contributing to stream sedimentation through trampling of streambanks and springs. In November and December 2008, cows were documented in the riparian areas on private lands within the allotment. The BLM land in the adjacent section (11) is not fenced out. As a result, the riparian areas, wetlands, and springs in Section 11 were heavily over-grazed and hoof-churned during 2008 when cows were on the allotment five months more than permitted.

Table 3-2. Slump Potential Ratings and Slump Presence on BLM-Administered Lands for Stream Reaches Surveyed by BLM (USDI 2008)

Analysis Area	Stream Miles Surveyed for Slump Presence and Potential	Slump Potential Ratings			Number of Stream Reaches with Slumps Present
		Low (% of miles surveyed)	Medium (% of miles surveyed)	High (% of miles surveyed)	
Dosier Creek	.31		100%		none
Cove Creek	7.8	6%	40%	54%	11

Water withdrawals have the potential to greatly impact surface water temperatures within the Bear Creek Watershed (ODEQ 2007a). There are numerous diversions from Dosier Creek and the tributaries to Cove Creek within the allotment area. There are three authorized diversions within the allotment on BLM land. Oregon Water Resources Department records indicate a point of diversion in section 3 NE ¼ NE ¼ for domestic and livestock use. BLM has two water rights to store water in NW ¼ NW ¼ and SE ¼ SW ¼ of Section 11 for livestock, wildlife, fire suppression, and road operations. The management of water withdrawals is within the jurisdiction of the Oregon Water Resources Department and as such the BLM has no authority in this area.

Riparian Reserves establish protection for all fish-bearing streams as well as nonfish-bearing perennial and intermittent streams, wetlands, lakes, ponds, and unstable areas. Riparian Reserves are adequate to maintain riparian conditions necessary to protect stream shade and restore water temperature over time (USDA and USDI 2005). Over the past 10 years, road construction has declined and road decommissioning and upgrading has increased. Implementation of best management practices during road and logging operations have reduced impacts on water quality. Water quality on federal lands is on an upward trend with reductions in summer stream temperatures and sediment input.

Management measures used to limit the presence of livestock in stream channels or riparian zones in order to reduce sedimentation (USDI 2006a) will also minimize the amount of bacterial contamination in surface water from BLM-managed lands.

Current conditions resulting from past and present actions are summarized as follows. Mass wasting processes such as landslides and debris torrents continue to be the dominant sediment sources in the allotment. Surface erosion from existing roads on all lands contributes to low levels of sediment input primarily at road-stream crossings and where fill slopes closely parallel streams. Streambank trampling from livestock grazing continues to contribute sediment to streams.

Livestock access and concentration in streams or riparian zones continues to allow bacterial contamination in surface water from BLM-managed lands in some locations within the allotment.

Stream temperatures are on an upward trend (decreasing) on federal land as previously harvested riparian vegetation recovers. However, roads built in riparian areas and livestock grazing that damages shade-producing vegetation in riparian areas will continue to contribute to temperature increases. On non-federal lands, near-stream vegetation disturbance/removal and water withdrawals continue to adversely affect stream temperatures (ODEQ 2004).

b. Watershed Analysis Recommendations

The allotment falls within the source water areas for the cities of Gold Hill, Rogue River, and Grants Pass. The surface water source for these four public water systems is the Rogue River. Cove Creek is a tributary to Walker Creek, a tributary to Bear Creek. Bear Creek is a tributary to the Rogue River. The allotment is located over 38 miles upstream from the closest public water system intake.

A source water assessment is in progress for the Medford Water Commission and assessments have been completed by the DEQ and the Oregon Department of Human Services for the cities of Gold Hill, Rogue River, and Grants Pass. The completed assessments include an inventory of potential contaminant sources within the source water areas. Grazing animals were identified as a potential contaminant source for the Gold Hill, Rogue River, and Grants Pass drinking water protection areas. No other potential contaminant sources that could occur within the allotment were identified in the state source water assessments.

The *Water Quality Restoration Plan for the Upper Bear Creek Analysis Area* (USDI 2008:22) identified several nonpoint source factors that may result in increased thermal loads including: near-stream vegetation disturbance/removal, channel modifications and widening, dams, diversions, and irrigation districts, and hydromodification–water rights.

The *Water Quality Restoration Plan for the Upper Bear Creek Analysis Area* (USDI 2008:25) identifies percent-effective shade targets for major perennial and fish-bearing streams on BLM-administered lands (Table 3-3). Streams are considered recovered where current shade achieves the target shade or is 80 percent or greater. Dosier Creek is considered recovered (Table 3-3). Current shade is less than the target on BLM-administered lands for Cove Creek (Table 3-3).

Table 3-3. Percent-Effective Shade Targets for BLM-Administered Lands in the Cove Creek Allotment (USDI 2008)

Stream Name	Current Shade ¹ (%)	Target Shade ¹ (%)	Years to Recovery
Cove Creek	70	91	64
Dosier Creek	84	97	0

^{1/} Current shade and target shade refer to percent-effective shade defined as the percent reduction of solar radiation load delivered to the water surface. Shade values are averages for all BLM stream miles assessed.

The *Water Quality Restoration Plan for the Upper Bear Creek Analysis Area* (USDI 2008:23) identifies the effect of channel morphology on stream temperature. Wide channels tend to have lower levels of shade due to simple geometric relationships between shade producing vegetation and the angle of the sun. Channel widening is often related to degraded riparian conditions that allow increased streambank erosion and sedimentation of the streambed. Natural erosion processes occurring in the Upper Bear Creek watershed such as landslides, surface erosion, and flood events contribute to increased sedimentation (USDI 2000:80). Sediment sources resulting from human activities include roads; logging (tractor skid trails, yarding corridors, and landings); concentrated livestock grazing in riparian zones; residential clearing of riparian zones; irrigation ditch blowouts; and poor irrigation practices (USDI 2000:80).

c. Riparian Condition

Riparian areas (streams, wetlands, springs, and seeps) within the allotment were inventoried in 2007 using BLM's *Process for Assessing Proper Functioning Condition*, Technical Reference 1737-9 (Prichard et al. 1993). The process used an interdisciplinary evaluation to rate riparian areas as either "Proper Functioning Condition", "Functioning at Risk", or "Nonfunctional". The ratings are defined as:

Proper Functioning Condition (PFC) – Riparian-wetland areas are functioning properly when adequate vegetation, landform, or large woody debris is present to dissipate stream energy associated with high

waterflows, thereby reducing erosion and improving water quality; filter sediment, capture bedload, and aid floodplain development; improve flood-water retention and ground-water recharge; develop ponding and channel characteristics to provide the habitat and the water depth, duration, and temperature necessary for fish production, waterfowl breeding, and other uses; and support greater biodiversity. The functioning condition of riparian-wetland areas is a result of interaction among geology, soil, water, and vegetation.

Functional—At Risk (FAR) – Riparian-wetland areas that are in functional condition but an existing soil, water, or vegetation attribute makes them susceptible to degradation.

Nonfunctional – Riparian-wetland areas that clearly are not providing adequate vegetation, landform, or large woody debris to dissipate stream energy associated with high flows and thus are not reducing erosion, improving water quality, etc., as listed above. The absence of certain physical attributes, such as a floodplain where one should exist, is an indicator of nonfunctioning conditions.

The Cove Creek Allotment has an estimated 22 miles of stream channels on private and federal lands with 8.1 miles on BLM land (GIS data). Of these, 4.5 miles have been assessed for PFC. The surveys indicate that 3.0 stream miles (67%) within the allotment were found to be Functional at Risk with an upward trend (improving). The surveys indicate 0.5 stream miles (10%) as Functional at Risk with a downward trend (degrading). The surveys rated 0.8 miles (17%) of channels as Non-Functional. Streams classified as Proper Functioning made up 0.3 miles (6%).

According to the BLM stream survey, actively eroding banks and fine sediment percentages were high in the surveyed reaches of the Cove Creek allotment. Within the allotment, 1.8 stream miles on BLM land (24%) were found to have actively eroding banks with the level of erosion greater than 30%. Surveys also showed that 2.6 miles (36%) of the stream reaches had fine sediment levels greater than 30%; this level is above the “desirable” benchmark set by Oregon Dept. of Fish and Wildlife. A one meter enclosure cage was established near a spring in T. 39 S., R. 2 E., in Section 3 to monitor vegetation condition. Photos were taken throughout the 2003 and 2004 grazing seasons to monitor riparian vegetation and soil conditions inside and outside the enclosure. Trampling, soil disturbance, and stubble heights below the recommended 6 to 8 inches were observed outside the enclosure and throughout the spring area. In 2007, extensive trampling, soil disturbance, and stubble heights below 6 inches were observed during stream surveys of riparian areas, wet meadows and springs in T. 39 S., R. 2 E., in Sections 3 and Section 11. During field visits in July and November 2008, hydrology staff documented excessive grazing impacts at these locations and the presence of cows in Section 11 five months beyond the permitted season of use.

2. Environmental Consequences

The potential changes to hydrologic processes and water quality from implementing Alternative 1 (No Action) and Alternative 2 (Proposed Action) are summarized below in Table 3-4 and Table 3-5.

Table 3-4. Potential Changes to Hydrologic Processes due to Grazing

Potential Changes to Hydrologic Processes that Affect Streamflow	Potential Changes to Streamflow
Peak Flows	
<ul style="list-style-type: none"> Reduced infiltration due to compaction: increases surface run off, decreases groundwater, and reduces time to reach peak. 	<ul style="list-style-type: none"> Reduced time to hydrograph peak. Increased frequency of peak flows. Increased magnitude of peak flows.
Low Flows	
<ul style="list-style-type: none"> Decreased summer streamflow due to water withdrawals for livestock. Lowered water table due to riparian vegetation removal. 	<ul style="list-style-type: none"> Decreased magnitude of low flows

Table 3-5. Potential Changes to Water Quality due to Grazing

Potential Changes to Processes that Affect Water Quality	Potential Changes to Water Quality
<ul style="list-style-type: none"> Riparian vegetation removal: reduced stream shade, increased erosion, and increased channel width-depth ratio. Streambank disturbance: increased erosion and increased channel width-depth ratio. Water quality contamination due to livestock in streams. 	<ul style="list-style-type: none"> Increased temperature. Decreased dissolved oxygen. Increased turbidity/sediment. Increased bacteria/pathogens.

Table 3-6 shows a comparison between alternatives of the potential for cumulative effects on stream flows, water quality, and riparian functioning condition.

Table 3-6. Comparison of Alternatives for Cumulative Effects on Streamflows, Water Quality and Riparian Condition

Resource Value Affected	Potential for Cumulative effects on Hydrology by Alternative		
	ALT 1. (No Action)	ALT 2. (Proposed Action)	ALT 3. (No Grazing)
Peak Flows	Low Negative	Low Negative	Slight Positive
Low Flows	Low Negative	Low Negative	Slight Positive
Temperature	Mod. Negative	Low-Mod. Neg.	Slight Positive
Bacteria/ Pathogens	Low Negative	Low Negative	None
Turbidity/ Sediment	Mod. Negative	Low-Mod. Neg.	Slight Positive
Riparian Condition	Mod. Negative	Low-Mod. Neg.	Slight Positive

a. Alternative 1 - No Action

Under the No Action Alternative, the grazing lease on the Cove Creek Allotment would be issued at the same animal unit month (AUM) level, the same season of use, and with the same terms and conditions currently in effect.

Grazing animals were identified as a potential contaminant source for the Gold Hill, Rogue River, and Grants Pass drinking water protection areas. This allotment is within the source water areas for the cities of Gold Hill, Rogue River and Grants Pass; however, given the numbers of cattle grazed on this allotment is low and the grazing seasons are short, it is unlikely that this allotment grazed as prescribed under this alternative is a significant contributor to the identification of grazing as a potential contaminant source.

This analysis assumes the season of use is May 1- June 15, unlike 2008, when utilization continued into December. Long-term consequences of continued grazing at current levels (pre-2008) would mean the “hot spots” identified in the BLM 2007 stream surveys would continue to have heavy compaction, eroding banks, and reduced productivity of riparian vegetation. These hotspots include but are not limited to NE corner of Section 3 and the intermittent stream reach (and associated perennial springs) that follows road 39-2E-3.2 road above the quarry in section 3. Soil disturbance, post-holing, churning and compaction from cattle loitering in these areas would continue, threatening the water holding capacity of these ecosystems. The intermittent stream and associated perennial springs would continue to be grazed at the current level of use and would continue to be nonfunctional. Downcutting would continue in the sections of the channel that are unarmored by bedrock and cobble. The stability of the few low gradient areas where sediment is being retained by pieces of large wood, woody riparian species, and riparian groundcover would continue to be compromised. Under this alternative, impacts to riparian soils would continue to compromise the soil’s ability to retain moisture. The extensive post holing, trampling, and degradation to the hillside, seeps and wetlands below the pump chance in SE ¼ SW ¼ of Section 11 would likely continue.

b. Alternative 2 - Proposed Action

Under this alternative the existing cattle grazing operations would continue but the release date would be changed from May 1 through June 15 to June 1 through July 15. In addition, the existing water development (#750080) in section 11 would be redesigned to install an off-channel trough and construct an enclosure around the pond.

Grazing animals were identified as a potential contaminant source for the Gold Hill, Rogue River, and Grants Pass drinking water protection areas. This allotment is within the source water areas for the cities of Gold Hill, Rogue River and Grants Pass; however, given the numbers of cattle grazed on this allotment is low and the grazing seasons are short, it is unlikely that this allotment grazed as prescribed under this alternatives is a significant contributor to the identification of grazing as a potential contaminant source.

This alternative slightly increases recovery potential for the riparian areas of the allotment. It is possible that a later season-of-use will allow more of the riparian and wetland soils to dry out before the grazing season starts which would minimize soil disturbance. Historic "hot spots" where livestock congregate every year often exhibit soil compaction and hoof prints in areas of high soil moisture where it can be especially detrimental. This alternative would allow more time for soils to recover after a season of grazing. This recovery could include increased riparian species in some areas and increased vigor of streamside vegetation.

Soil compaction from grazing reduces soil porosity, and therefore, the water-holding capacity of soils. Soil water-holding capacity is particularly important in the wet areas and seeps. These areas provide groundwater storage. Cattle use in these areas has changed the fragile soil composition and structure. Trampling by cattle reduces the porosity in wetlands, springs, and seeps and thus reduces the volume of water that can be contained in the macropores. The indirect effect of this compaction is less water storage capabilities and reduced contribution to late-season streamflows. By pushing the season of use forward one month under this alternative, a slight reduction in soil compaction in the wetlands, springs, and seeps may improve late-season streamflows. Streamflow influences stream temperature. The temperature change produced by a given amount of heat is inversely proportional to the volume of water heated (USDA and USDI 2005). A stream with less flow will heat up faster than a stream with more flow given all other channel and riparian characteristics are equal.

The enclosure of the water development in Section 11 and installation of the off-channel watering trough on road 39-2E-11.1 will decrease trampling of the water source itself and potentially reduce the degradation of the hillside wetland below the water source.

The increase of herding efforts may reduce the impacts to the hotspots in Section 3 and 11 riparian and wetland hotspots. However, as the allotment dries out livestock will continue to concentrate in the wettest areas of the allotment. It is unlikely that this alternative would result in stream bank stabilization and erosion in the riparian area would continue at near current rates. Based on field observations after cattle trespass in 2008, only removing the cattle from the riparian area for a few growing seasons would stabilize the current conditions.

The long-term goal of the WQRP is compliance with water quality standards for the 303(d) listed streams in the Upper Bear Creek Analysis Area. The WQRP identifies TMDL implementation strategies to achieve this goal. Recovery goals focus on protecting areas where water quality meets standards and avoiding future impairments of these areas, and restoring areas that do not currently meet water quality standards. The recovery of water quality conditions on BLM-administered land in the Upper Bear Creek Analysis Area is dependent upon implementation of the BLM *Medford District Resource Management Plan* (USDI 1995). The RMP (Appendix D:172) includes best management practices (BMPs) that are intended to prevent or reduce water pollution to meet the goals of the CWA.

c. Alternative 3 - No Grazing

The elimination of grazing on this allotment would not change the identification of grazing as a potential contaminant in the source water areas for the cities of Gold Hill, Rogue River, and Grants Pass.

The singular action of eliminating grazing in this allotment is not likely to change the water quality listing for Walker Creek. The long-term goal of the *Water Quality Restoration Plan for the Upper Bear Creek Analysis Area (WQRP)* is compliance with water quality standards for the 303(d) listed streams in the Upper Bear Creek Analysis Area. The WQRP identifies TMDL implementation strategies to achieve this goal. Recovery goals focus on protecting areas where water quality meets standards and avoiding future impairments of these areas, and restoring areas that do not currently meet water quality standards. This allotment has both. As stated in the *Water Quality Restoration Plan for the Upper Bear Creek Analysis Area (WQRP)*, current shade is less than the target on BLM-administered lands for Cove Creek.

As identified in the WQRP (USDI 2008:23), stream temperature is affected by both shade and channel modification. For achievement of shade targets, the WQRP recommends allow riparian vegetation to grow up to reach target values. The WQRP also recommends improving riparian rooting strength and streambank roughness by allowing historic streambank failures to revegetate. Removing grazing from the allotment would achieve both these goals.

Streamflow also influences stream temperature. The temperature change produced by a given amount of heat is inversely proportional to the volume of water heated (USDA and USDI 2005). A stream with less flow will heat up faster than a stream with more flow given all other channel and riparian characteristics are equal. Trampling by cattle reduces the porosity in wetlands, springs, and seeps and thus reduces the volume of water that can be contained in the macropores. The indirect effect of this compaction is less water storage capabilities and reduced contribution to late-season streamflows. In the absence of grazing, the storage capacity of the trampled wetlands, seeps, and springs would improve and could improve late-season streamflows and influence stream temperature.

Both the mainstem of Dosier Creek and the tributaries to Cove Creek that flow through have the potential to improve the quality of water in Walker Creek. While Dosier Creek at the section 34/3 border did not exceed either the 1996 or the 2004 temperature criteria, the proximity of this single year statistic to the temperature criteria warrants acknowledgement. This stream system is borderline. Stream temperature is driven by the interaction of many variables. The principal source of heat energy for streams is solar energy striking the stream surface (USDA and USDI 2005). Stream surface shade is dependent on riparian vegetation height, location, and density. The ability of riparian vegetation to shade the stream throughout the day depends on vegetation height and the vegetation position relative to the stream. The woody riparian vegetation and groundcover provide a necessary component of shade for the riparian areas in this allotment, especially in the meadow and wetland areas.

The elimination of grazing on this allotment would allow riparian vegetation to thrive in the perennial and intermittent streams, and the springs and wet meadow areas associated with these systems. Over time, hoof impacts along the streams and at the springs would heal over. Soil disturbance and churning associated with cattle use in these areas would heal, protecting the water holding capacity of these ecosystems. Increases in riparian vegetation where there is sufficient water to support these species would be expected. Improved riparian vegetation will contribute to rooting strength and floodplain/streambank roughness that dissipates erosive energies associated with flowing water.

E. BOTANY

1. Affected Environment

Conifer communities create a landscape matrix within which the riparian areas and meadows grazed by livestock are embedded. Riparian areas include open wetland areas incorporating sedges and grasses. Shallow soils define open meadows that may be dominated by California oatgrass on clayey sites or Roemer's fescue on soils with more sand or silt. There are also areas dominated by oak woodland which are comprised primarily of Oregon white oak (*Quercus garryana*) with a smaller component of California black oak (*Quercus kelloggii*). The shrub component is a mixture of buckbrush (*Ceanothus cuneatus*), serviceberry (*Amelanchier alnifolia*), and deer brush (*Ceanothus integerrimus*). Ground cover consists of an assortment of grass and forbs including; blue wild rye (*Elymus glaucus*), Lemmon's needlegrass (*Achnatherum lemmonii*), Idaho fescue (*Festuca idahoensis*), California oatgrass (*Danthonia californica*), squirrel tail (*Elymus elymoides*), prairie junegrass (*Koeleria macrantha*), California Brome (*Bromus carinatus*), Secund's bluegrass (*Poa secunda*), Western buttercup (*Ranunculus occidentalis*), yampah (*Perideridia sp.*), harvest brodiaea (*Brodiaea elegans*), slender phlox (*Microsteris gracilis*), tarweed (*Madia sp.*), lupine (*Lupinus sp.*), and paintbrush (*Castilleja sp.*) The dry meadows are generally less productive and vulnerable to invasive plant influences from species such as; medusahead (*Taeniatherum caput-medusea*), soft brome (*Bromus mollis*), cheatgrass (*Bromus tectorum*), bristly dogtail (*Cynosurus echinatus*), bulbous bluegrass (*Poa bulbosa*) and a variety of other weedy species.

The forested portion of this allotment supports a diverse mix of forest plant communities, where invasive plant species are generally confined to road-sides or localized disturbed areas. Utilization is low enough to not disrupt the energy, nutrient, and hydrologic cycles. The dry meadows and oak woodland plant communities support a diverse mix of plant species. However, invasive plant species are scattered in patches throughout the majority of the non-conifer areas, particularly annual grasses. In addition to reducing habitat quality for wildlife, annual grasses have shallower root systems and shorter life cycles than native perennial grasses, and thus have reduced capacity to hold the soil and retain water and nutrients. Furthermore, annual grassland often accumulates a layer of thatch where decomposition and nutrient cycling are different than in native plant communities (Ehrenfeld 2003; D'Antonio and Vitousek 1992). Introduction and establishment of exotic annual grasses occurred in past decades, and current livestock grazing is not intense enough to contribute to additional conversion of native plant communities to exotic annual grasslands.

a. Threatened, Endangered, and Bureau Special Status Species

The allotment was surveyed for Bureau Sensitive Status, and federally listed plants in the spring of 2007. The allotment is outside the range of federally listed plants (*Limnathes floccosa*, *Lomatium cookii*, and *Arabis macdonaldiana*). The entire allotment is within *Fritillaria gentneri* habitat defined by the U.S. Fish and Wildlife Service (USDI Fish and Wildlife Service, 2003) however there are no known occurrences.

Table 3-7. Special Status Species (Vascular Plants)

Species	Status	Occurrences
rhizome bluegrass (<i>Poa rhizomata</i>)	BS	3
twotooth sedge (<i>Carex Serratodens</i>)	BS	1

BS - Bureau Sensitive

Livestock generally seek out grasses and grass-like plants (graminoids) to form the bulk of their diet (Holechek et al. 1982). *Poa rhizomata* and *Carex serratodens* are both graminoids. The *Poa rhizomata* populations occur in areas that receive slight-light utilization. The *Carex serratodens* population occurs in an area seldom visited by livestock, and thus remains generally unaffected by grazing. Because of its wet habitat and its growth of fibrous root masses, *Carex* species generally recover well from herbivory, but severe repeated grazing and trampling would impact the population.

Fungi, lichens, and bryophytes: Currently there are no known occurrences of Bureau Special Status fungi, lichens, or bryophytes within the allotment area.

b. Noxious Weeds

The allotment was surveyed for state listed noxious weeds in the spring of 2007. The following species from the Oregon Department of Agriculture Noxious weed list were found.

Table 3-8. Noxious weeds

Species	Occurrences
yellow starthistle (<i>Centaurea solstitialis</i>)	22
Canada thistle (<i>Cirsium arvense</i>)	6
Himalayan blackberry (<i>Rubus discolor</i>)	1
medusahead (<i>Taeniatherum caput-medusae</i>)	Not surveyed

Taeniatherum caput-medusae (medusahead) was not surveyed because of its wide distribution on clayey soils within the allotment. In the non-conifer habitats, medusahead and other exotic annual grasses are present in most meadows, and dominant in some areas. Exotic annual grass infestations are of concern because they alter the ecological functioning of native plant communities, reduce the value of wildlife habitat, and provide inferior forage for wildlife and livestock (D’Antonio and Vitousek, 1992). The areas most likely to experience conversion from native perennial grasslands to exotic annual grasslands have already undergone conversion, and current stocking rates are unlikely to convert additional areas of remnant native grassland. Due to their invasive nature, noxious weeds present on the allotment continue to spread when left untreated. Field visits to the allotment and BLM monitoring data in surrounding areas suggests exotic annual grasses are not spreading rapidly under current grazing regimes. However, areas that experience soil and vegetation disturbance within the allotment are at risk for weed colonization. The BLM weed control program uses herbicides, biological control agents, and hand pulling to treat infestations across the landscape as time, budget, and availability of personnel allow.

Yellow star-thistle (*Centaurea solstitialis*) occurs adjacent to roads and in highly disturbed areas. It occurs throughout the 48 contiguous United States and Canada with a few exceptions in the South and Northeast states. Yellow star-thistle can produce dense stands that displace native species and deplete soil moisture. Yellow star-thistle is listed by the Oregon State Weed Board as a “B” and a “T” noxious weed.

Canada thistle (*Cirsium arvense*) is a perennial with an extensive root system. This prickly rose-purple flowered plant can produce up to 1500 wind transported seeds per flowering shoot. Seed can remain viable in the soil for 20 years. Vegetative reproduction contributes to local spread and persistence. The large fibrous taproot can send out lateral roots as deep as three feet below the ground, from which shoots sprout up at frequent intervals. It also regenerates from root fragments less than one inch in length. There are 6 sites within the Cove Creek grazing allotment. This weed is a native of Eurasia. Detrimental effects include displacement of native species, decrease of plant diversity, reduced forage, and it serves as an alternate host for insects and pathogenic microorganisms that attack various crops. Successful control methods include biological, chemical, and some limited success with mechanical methods.

Medusahead (*Taeniatherum caput-medusae*) is found throughout the project area and adjacent private lands. This grass is common in disturbed, open grasslands but also invades oak woodlands and chaparral communities. It ranges throughout the western states and also in the northeast region. Medusahead prevents germination and survival of native species, ties up nutrients, and contributes to fire danger in the summer. Medusahead is unpalatable to livestock and wildlife except in the short window of its growing cycle prior to seed head formation. This generally occurs early in the spring or in the fall if moisture and temperature allows a second period of germination.

Himalayan blackberry (*Rubus armeniacus*) is found in the project area generally associated with ditches and other waterways but also frequents other disturbed areas. It is found throughout the western US and is used by humans and wildlife mostly for food. Himalayan blackberry forms dense thickets that decreases usable pasture area for wildlife and livestock.

2. Environmental Consequences

a. Alternative 1 - No Action

Grazing occurs from May 1- June 15, many of the perennial plant species have not produced seed by May 1 however; much of the allotment is not grazed prior to seed set and the stocking rate is low enough to still allow 40-80% of the plants to produce seed every year. Grazing by livestock can be used as a method to control the spread of noxious weeds. The early season of use that occurs on this allotment allows livestock to graze invasive species such as annual grasses and yellow starthistle before they set seed and become unpalatable. The current grazing is having little effect on the allotments botanical condition. Plant community health will slowly increase or persist in its current state if grazing is continued under the current grazing authorization. Herbivory of and damage to the wetland vegetation, hydrologic cycle, and soil structure due to trampling and churning in riparian areas would continue. Continued grazing at the current level does not pose a threat to the persistence of Bureau Sensitive plants *Carex serratodens* and *Poa rhizomata* loss of some individuals would not contribute to the need to list these species.

Areas within this allotment that are overly dense would be susceptible to intense stand replacement fires. While this may be a natural process for most plant communities occurring in this allotment, it would open up some areas to weed invasion. Rare plant populations and uncommon oak woodland communities could be lost.

Localized site disturbance would continue to produce conditions favoring noxious weeds and invasive introduced species. These introduced species are superior competitors for available resources thereby displacing and excluding native plants. Livestock would continue to spread weed seed that passes through their bodies or becomes stuck on their hair and hooves. The level at which livestock grazing on this allotment occurs would not significantly change the composition, structure, and rate of weed spread. These weedy species would continue to spread or maintain their current levels particularly roadsides and open areas.

b. Alternative 2 - Proposed Action

The grazing lease would be renewed with a changed season of use. Grazing would occur from June 1- July 15, most plants have produced seed by June 1 and the stocking rate is low enough to allow 40-80% of the plants to produce seed every year. A detriment that grazing will have to plants and their reproductive success would be from trampling of the vegetation. Plant community health will slowly increase or persist in its current state if grazing is continued under this system. Removing cattle July 15 would allow plants to restore carbohydrate reserves for growth in the spring.

Delaying turn-out until June 1 would reduce impacts in locations where soils generally remain wet later in the season and it would increase vegetative growth and seed head production before grazing occurs. Herbivory of and damage to the wetland vegetation, hydrologic cycle, and soil structure due to trampling and churning in riparian areas would continue but to a lesser extent than in Alternative 1. The pond in T. 39 S., R. 2 E., in Section 11 would be protected by fencing. Botanical conditions in the fenced area would be expected to improve with an increase in the percent ground cover by riparian species.

Grazing at the reduced level does not pose a threat to the persistence of Bureau Sensitive plants *Carex serratodens* and *Poa rhizomata* loss of some individuals would not contribute to the need to list these species. This alternative would have the same concerns with fire and noxious weeds as alternative one.

c. Alternative 3 - No Grazing

This alternative would not have any direct effects on botanical resources within the allotment. However, eliminating grazing on the allotment would allow plant community restoration to occur at a slightly faster rate than would occur with the current grazing allocation. In areas where there is a slight to moderate departure from the ecological reference condition it is expected that positive effects to the plant community composition and structure would be visible within 3-10 years depending on climate conditions. Slow displacement of annual grasses (and other introduced invasive species) by native perennial grasses would improve the condition of the natural plant communities, especially the oak woodlands and open meadows. In areas with an extreme departure from the ecological reference condition, no visible benefits from removing livestock grazing would occur because livestock do not use these areas as there is no suitable forage. Furthermore, in expansive areas of non-native grasses there would be little to no seed source for the establishment of native perennial grasses.

Dominance of the grass and forb layer by noxious weeds and invasive introduced species in some plant communities is a result of introduction of non-native species coupled with historic overgrazing by livestock. These introduced species are superior competitors for available resources thereby displacing and excluding native plants. Riparian vegetation would expand without the annual herbivory and physical trampling. This alternative would have the same concerns with fire and noxious weeds as alternative one and two.

F. AQUATIC HABITAT & FISH

1. Affected Environment

The Cove Creek Allotment occurs in the Cove Creek 7th field watershed which is in the upper Bear Creek 5th Watershed. The major streams in the allotment are a perennial tributary to Cove creek and Dosier Creek. Streams are moderate to high in gradient, and substrate is composed mainly of bedrock, cobble and silt. Generally stream banks have vegetation of alder, willow and other shrubs.

a. Aquatic Habitat

Fish production is in large part dependent on habitat quantity and quality (Meehan, 1991). Fine sediment in excessive amounts degrades both stream and aquatic organism health. Excessive sediment can fill in pools, cover spawning gravels, and smother eggs (Meehan et al. 1991). Streams within the Cove Creek Allotment are high in sediment.

Stream temperature is important to salmonids because they have evolved with temperature patterns of streams they use for migration and spawning, and deviations from the normal pattern could adversely affect their survival. Walker Creek is identified by the Oregon Department of Environmental Quality (303d List) for exceeding the 55.0°F 7-day temperature standard for spawning salmonids during October 1 - May 31. Fish habitat in Walker Creek is influenced by the upland conditions of the Cove Creek Allotment.

Comprehensive riparian surveys were conducted in 2007 by the Bureau of Land Management within the Cove Creek Allotment. Surveys indicated that the majority of streams were in a Functional at Risk state and with an upward trend. The surveys indicated major deficiencies in aquatic habitat including elevated sediment levels, high number of eroding banks and in some areas low stream shade. Additionally, the surveys identified a non functioning section of stream in T. 38 S., R. 3 E., in Section 3 that had high sediment and eroding banks. The surveys mentioned very few instances of cattle grazing impacts. These surveys were conducted before the unauthorized extended cattle grazing season of 2008.

Stream Stabilization and Woody Species Utilization surveys were completed in September 2008 on Dozier Creek and the main tributary to Cove Creek within the allotment. Monitoring techniques included stream bank stabilization assessment and stream side shrub and hardwood consumption (Cowley and Burton 2004, See appendix A). Both monitoring techniques indicated heavy use on the perennial tributary to Cove Creek (T. 38 S., R. 2 E., Section 3) and moderate use on Dozier Creek. Much of Dozier Creek was protected by dense vegetation; however, in places where cattle could access the creek, the surveys found heavy utilization on streamside vegetation and stream banks. Bank stabilization surveys for the tributary to Cove Creek found 35 percent of the reach had unstable stream banks. Bank sheering, channel widening and active erosion were documented in the surveys. These surveys indicated that the 2008 unauthorized extended grazing season added to the existing high sediment levels within the survey reaches. The Woody Species Utilization surveys showed moderate to heavy consumption of the one to three year growth of the streamside woody species vegetation. In some areas, riparian woody vegetation was completely consumed. The surveys indicated that within the survey reaches, the shade had decreased following the 2008 grazing season. These surveys conclude that since the 2007 riparian survey, aquatic habitat within these reaches is not being maintained due to increase in high sediment and a loss of shade.

No studies have been conducted on the mainstream fish bearing channels to determine if and how much sediment may be contributed to CCH as a result of grazing on this allotment, but it can be reasonably presumed that displaced and mobilized sediment from the heavy grazing areas with high sediment loads is eventually deposited into CCH during high flow events. Normally, the majority of sediment generated and stored in upland and tributary reaches would likely only be transported and released into CCH along with pulses of elevated turbidity during periods of high stream flow.

b. Special Status Species

Coho, Coho Critical, and Essential Fish Habitat

In 1997, the Southern Oregon/Northern California (SONC) Evolutionary Significant Unit (ESU) of coho salmon (*Oncorhynchus kisutch*) was listed as “threatened” with the possibility of extinction under the Endangered Species Act (ESA) by the National Marine Fisheries Service (NMFS). There are no coho salmon within the allotment area.

On May 5, 1999, NMFS designated Coho Critical Habitat (CCH) for SONC coho salmon. Critical habitat includes “all waterways, substrate, and adjacent riparian zones below longstanding, naturally impassable barriers.” It further includes “those physical or biological features essential to the conservation of the species and which may require special management considerations or protection...”, including all historically accessible waters (F.R. vol. 64, no. 86, 24049). The nearest CCH is approximately 3.5 miles downstream of the Allotment.

Essential Fish Habitat (EFH) has been defined by NOAA fisheries as “those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity.” This definition includes all waters historically used by anadromous salmonids of commercial value. There is no EFH within the allotment.

Approximately 3.5 miles downstream of the allotment, Walker Creek supports populations of steelhead, listed as Sensitive under the State Director’s Special Status Species list (2008). Coho salmon, a threatened species under the Endangered Species Act, have not been observed in Walker Creek but Walker Creek is considered, by the National Marine Fisheries Service, Coho Critical Habitat (CCH) for the Southern Oregon/Northern California (SONC) Evolutionary Significant Unit. Emigrant Creek supports populations of coho salmon and steelhead approximately 3.7 miles downstream of the allotment boundary. These habitats are also considered CCH and are designated Essential Fish Habitat (EFH) under the Magnuson Stevenson Fisheries Act.

Pebblesnails

Survey data shows that Keene Creek pebblesnails (*Fluminicola* n. sp. 16), a Strategic Species on the Special Status Species list (2007), occur upstream of this allotment in both the Sampson and Cove Creek drainages. All populations of pebblesnail are considered at risk because of their endemism, their sensitivity to habitat disturbance, and their life history trait of only breeding once in a lifetime. Pebblesnails are associated primarily with cold springs and headwaters of streams. Pebblesnail surveys have not been conducted on this allotment; however, there is high potential that they exist in the allotment because of the large number of springs found within T39S R2E section 11. Furthermore, this allotment is within one of the four major centers of pebblesnail endemism (Frest and Johannes 2005).

Aquatic mollusk habitat in T. 39 S., R. 2 E, Section 11 was evaluated in 2007 and reported to be in good condition. The riparian survey summaries made no mention of cattle impacts on these springs in 2007. In 2008, following the unauthorized grazing activities, several of the springs were documented as being in poor condition due to cattle impacts. Subsequently, several monitoring sites established by BLM hydrology staff have documented areas of post holing and bank erosion in T. 39 S., R. 2 E., Section 11 following the grazing season of 2008.

2. Environmental Consequences

a. Alternative 1 - No Action

The current aquatic condition, resulting from previous activities, would likely persist under the No-Action Alternative. It is unlikely that streambank recovery by revegetation has occurred in the heavy use areas. Streams in the allotment would continue to have high sediment and poor stream shade and would continue to contribute to high temperatures downstream in Walker Creek. If unchanged, the grazing regime would most likely maintain the current negative trend in stream sediment and shade (See Soils, Hydrology Section). It can be reasonably assumed that displaced and mobilized sediment from the un-vegetated, heavily grazed stream segments would continue to be transported and released into CCH at low levels. However, this amount would not be detectable above back ground levels because of the high sediment levels that are already present in the allotment streams.

b. Alternative 2 - Proposed Action

Under the proposed action, the effects to fish and aquatics would be the same as outlined above except for the following aspects. This alternative may improve vegetative growth conditions by turning out cows 30 days later (depending on soil moisture conditions) when riparian and wetland conditions may be dryer than under the current lease season of use (May 1 to June 15). However, cows tend to return year after year to areas that provide water, shade, ample vegetation, and easy walking. If the same cows are turned out in 2010 that were present during the 2008 grazing season, when the riparian areas experienced heavy utilization past the authorized season, it is likely they will return to these areas. It is anticipated that herding will improve this situation. It is highly unlikely that this alternative would result in stream bank stabilization and erosion in the riparian area would continue at near current rates (See hydrology and soils sections). In the short term, the aquatic environment will not improve to the base level observed prior to 2008 grazing season because cattle will continue to negatively impact the same areas that showed negative trends in aquatic conditions. These impacts will continue in the long-term until vegetation and stream banks are permitted to recover.

The proposed fencing project will improve aquatic habitat for pebblesnails and other aquatic organisms in the short and long term. It will most likely take several years for the aquatic habitat to reach conditions found before the 2008 unauthorized grazing season.

c. Alternative 3 - No Grazing

Aquatic habitat conditions would improve in the short and long-term. Shrub recovery can be dramatic following the elimination of livestock grazing (Platts and Rinne 1985, Elmore and Beschta 1987). Removing all cattle from the allotment will lead to improvement in the condition of seeps, springs, and streams on and downstream of the allotment area. Macroinvertebrate habitat would improve, including and the Keene Creek Pebblesnail habitat. In the short term, sedimentation would continue as it will take time for vegetation to reestablish on the stream banks. Under this alternative, it would most likely take one to three years for the aquatic conditions to reach the 2007 benchmark levels. Over the long term (over 5 years), riparian vegetation would reestablish, filling in areas of bare ground, stabilizing banks, and increasing shade. Stream temperatures would eventually lower in the allotment and would eventually contribute to lower stream temperatures downstream in fish-bearing streams. Riparian and aquatic habitat conditions in the allotment would improve as trampling and associated fine sediment would decrease while riparian vegetation density would increase. In the long term, sedimentation levels contributing to CCH would decrease, however, the amount would not be detectable due to the high sediment levels that present in the allotment streams.

G. TERRESTRIAL WILDLIFE

1. Affected Environment

The diverse plant communities that support wildlife in the allotment are influenced by two major ecoregions that converge in the southern Rogue Valley, the Cascade and Klamath Mountains. The Cascade Mountains support extensive and productive coniferous forests. While the Klamath Mountains are not as productive because of lengthy summer droughts, they remained unglaciated after the Pleistocene epoch and served as a refuge for many plant and animal species. The Klamath Mountains contain some of the highest biodiversity and number of endemic species in North America. Table 3-9 below lists some of the representative plant communities associated with two sub-ecoregions (Thorson et al., 2003) encompassing the allotment.

Table 3-9. Plant communities in the Cove Creek allotment

Ecoregion	Sub-Ecoregion	Representative Plant Communities
Cascade Mountains	South Cascades	Mixed Douglas-fir and Ponderosa Pine Forest; Mixed Fir and Hemlock Forest; Subalpine Meadows at Higher Elevations
Klamath Mountains	Oak Savanna Foothills	Dry Oak woodlands; Pine/Fir/Oak Woodlands; Grassland Savanna; Willow and Cottonwood Riparian Areas.

Grazing occurs throughout all of the plant communities found in the Cove Creek Allotment. The impacts of grazing in the mixed-conifer communities are most notable in the meadows and riparian areas that are interspersed throughout the more dominant conifer matrix. Grazing impacts in the grassland savanna areas are more widespread due to the abundant grasses found in this zone; but, as in the other communities, grazing tends to be concentrated in the meadows and riparian areas.

Livestock grazing primarily affects wildlife by changing vegetation composition, structure, and function. Grazing can result in a reduction of forage available to native herbivores (e.g. deer and elk), as well as reductions in vegetative ground cover for ground-nesting birds, rodents, and other wildlife species dependent on ground cover for protection, food, and breeding sites. Grazing also reduces water quality in seeps, springs, and streams used by native wildlife. The presence of livestock can also change local distribution and habitat use by native species due to interspecific behavioral traits. Generally, the extent of impacts to individual T&E species and their habitats are unknown.

a. Threatened, Endangered, and Bureau Sensitive Terrestrial Wildlife

Special and unique habitat features that support various wildlife species occur within the Cove Creek Allotment. These habitats include seeps and springs, meadows and snags. (USDI 1995). Special Status species that are known or suspected to occur in the allotment are listed in Table 3-10.

Table 3-10. Special Status Species (Terrestrial Wildlife)

Species	Status
northern spotted owl (<i>Strix occidentalis caurina</i>)	FT
Lewis' woodpecker (<i>Melanerpes lewis</i>)	BS
pallid bat (<i>Antrozous pallidus</i>)	BS
fringed myotis (<i>Myotis thysanodes</i>)	BS
northwestern pond turtle (<i>Actinemys marmorata marmorata</i>)	BS
foothill yellow-legged frog (<i>Rana boylii</i>)	BS
coronis fritallary (<i>Speyeria coronis coronis</i>)	BS
mardon skipper (<i>Polites mardon</i>)	BS, FC
Siskiyou short-horned grasshopper (<i>Chloealtis aspasma</i>)	BS
Franklin's bumblebee (<i>Bombus franklini</i>)	BS

BS - Bureau Sensitive
 FT - Federal Threatened
 FC - Federal Candidate

b. Bird Species of Conservation Concern

BLM recently issued interim guidance for meeting BLM's responsibilities under the Migratory Bird Treaty Act and Executive Order (EO) 13186. Both the Act and the EO promote the conservation of migratory bird populations. The interim guidance was transmitted through Instruction Memorandum (IM) No. 2008-050. The IM relies on two lists prepared by the U.S. Fish and Wildlife Service in determining which species are to receive special attention in land management activities. The lists are *Bird Species of Conservation Concern* (BCC) found in various Bird Conservation Regions and *Game Birds Below Desired Condition* (GBBDC). Table 3-11 displays those species that are known or likely to present on the allotment.

Table 3-11. Bird Species of Conservation Concern

Species	Species Status
black-throated gray warbler (<i>Dendroica nigrescens</i>)	BCC
flamulated owl (<i>Otus flammeolus</i>)	BCC
golden eagle (<i>Aquila chrysaetos</i>)	BCC
Lewis' woodpecker (<i>Melanerpes lewis</i>)	BCC
olive-sided flycatcher (<i>Contopus cooperi</i>)	BCC
rufous hummingbird (<i>Selasphorus rufus</i>)	BCC
mourning dove (<i>Zenaida macroura</i>)	GBBDC
band-tailed pigeon (<i>Columba fasciata</i>)	GBBDC

BCC - Birds of Conservation Concern
 GBBDC - Game Birds below Desired Condition

c. Wildlife Species Not Negatively Affected By Grazing

Some of the special status species found in the allotment are not affected by grazing. The suite of species that would not be affected or affected only to a negligible degree includes the following: **golden eagle, flamulated owl, Lewis's woodpecker, black-throated gray warbler, olive-sided flycatcher, mourning dove, pallid bat, fringed myotis and northern spotted owl.** Grazing has little or no impacts on these species because it does not physically reduce their numbers nor does it reduce feeding, breeding and sheltering opportunities. These species are primarily associated with the mixed-conifer communities except for Lewis's woodpecker which is more closely associated with the oak woodland communities.

There is one known location for **northern spotted owls** within the Cove Creek allotment but it was not determined if the pair were nesting. Approximately 35% of this allotment contains nesting, roosting and foraging habitat for this species. Northern spotted owls are unlikely to be affected by the current livestock grazing because their preferred habitat is dense forest where livestock seldom forage.

d. Wildlife Species That May Be Affected By Grazing

Some species of special interest are susceptible to the physical aspects of grazing, e.g., trampling, rubbing, and water quality degradation, while other species are sensitive to the removal of forage that is required for feeding or breeding.

The **foothill yellow-legged frog** depends on aquatic environments for their entire life cycle. Foothill yellow-legged frogs are associated with low gradient streams. This species is impacted by issues of degraded water quality and habitat. Habitat degradation caused by cattle occurs through streambank trampling; wading in shallow ponds, springs, and streams; and defecation/urination in springs and seeps. Foothill yellow-legged frogs have been documented in the Cove Creek drainage and suitable habitat exists in this allotment.

The **northwestern pond turtle** is known to occur at several locations adjacent to the Cove Creek allotment and potential habitat occurs within the allotment. Pond turtles inhabit ponds, marshes, and slow moving portions of creeks and rivers, which have rocky or muddy bottoms, but must leave the water to dig terrestrial nests and lay their eggs (Brown 1985). These turtles often overwinter in upland settings and have been known to travel up to 500 meters to find a site. Both of these activities are impacted by heavy grazing, and post-holing by livestock.

Livestock grazing impacts the **Mardon skipper** (butterfly) through direct trampling of eggs, larvae, pupae, and adults (Black et al. 2002). Larval and adult nectaring food sources are destroyed by consumption and trampling by livestock. The native bunch grasses, essential to Mardon skippers, regenerate by seeds that are likely consumed during grazing. Soil disturbance and grazing can facilitate the invasion of non-native species (Xerces 2007). **Coronis fritillaria**, another butterfly, is likely affected by similar impacts of grazing. *Coronis fritillaria* are, to a great degree, reliant on various species of *Viola* (violets) for several of its life stages. Although no surveys have been conducted for these species in the allotment, suitable habitat occurs and it's within the range of both species.

Rufous hummingbirds are affected by grazing due to the removal of plants and degradation of shrubs used for nectaring.

The **Siskiyou short-horned grasshopper** is known to occur within 3 miles from this allotment and suitable habitat does exist here. It's thought to be dependent on Elderberry for the egg-laying phase of its life cycle, but has been located in areas without elderberry. Suitable habitat occurs within the Cove Creek allotment. Cattle have been documented to impact elderberry and other vegetation through browsing and use as rubbing objects. Siskiyou short-horned grasshoppers are actively feeding and reproducing from July through September and are likely to be impacted by reduction of Elderberry vegetation and by grass and forb resources upon which they depend for food and protective cover. As with the Siskiyou short-horned grasshopper, **band-tailed pigeon** are adversely affected by grazing due to the impact to blue elderberry which is a preferred food for this species during migration.

The **Franklin's bumblebee** was once locally common throughout the Rogue and Klamath Basins in southern Oregon. Now known to only one site confirmed active in 2006 (Thorp 2008), the species is in steep decline. This bee species favors open areas with abundant flowering shrub and forb species and rodent burrows used for nesting. Consumption of such shrubs and forbs, and trampling of suitable nesting sites limits the ability of this species to successfully maintain a population at formerly suitable sites. Although no surveys have been conducted for this species in the allotment, suitable habitat occurs and the allotment is within the range of the Franklin's bumblebee.

e. Big Game Winter Range Area

Most of the Cove Creek allotment is within an area designated by the Medford RMP as Big Game Winter Range for **deer and elk**. This designation is meant to identify areas to promote forage, and hiding and thermal cover for deer and elk (USDI BLM 1995). Grazing has little influence on hiding and thermal cover conditions, but it can affect forage conditions. The effect of grazing in this allotment will have minimal impact to designated Big Game Winter Range; however, heavy grazing during the spring can reduce the availability of high quality forage in the winter because the region's summer droughts encumber regrowth.

High quality forage is important to both deer and elk, especially on winter ranges. Forage conditions are declining in areas inhabited by introduced noxious herbaceous species, such as yellow star thistle, bristly dogtail, and medusa head. These species displace native grasses and herbs which generally provide high quality forage. Also, due primarily to fire suppression, large acreage of important browse species such as wedgeleaf ceanothus have become decadent and are not providing the quality forage that younger plants provide. Proper livestock grazing management can help to avoid negative impacts to native plants and provide quality forage for deer and elk.

2. Environmental Consequences

a. Alternative 1- No Action

Livestock grazing has the potential to indirectly impact wildlife by changing vegetation composition, structure, and function. Livestock grazing results in a reduction of forage available to native herbivores (e.g. deer and elk), as well as reductions in vegetative ground cover for ground nesting birds, burrowing rodents, and other wildlife species dependent on ground cover for protection, food, and breeding sites. These effects would be especially prevalent in areas of heavy-severe utilization. Proper livestock grazing management has helped to avoid negative impacts to these habitats, which can be disturbed by heavy utilization and excessive hoof/soil impacts.

Some of the special status species present in the allotment area could be directly or indirectly adversely affected by poor grazing practices and heavy-severe utilization levels. Proper livestock grazing management can help to maintain natural ecosystems and sensitive habitats such as meadows and riparian areas.

b. Alternative 2 - Proposed Action

Delaying turn-out until June 1st would enhance vegetative growth and seed head production before grazing occurs. Removing cattle by July 15th would reduce the impacts of hot season grazing in riparian areas, and provide a greater opportunity for fall green-up that elk and deer depend on for winter forage.

c. Alternative 3 - No Grazing

This alternative would be expected to be more neutral or to benefit wildlife species in some areas. Vegetative succession would occur without impact from grazing, and wildlife populations and distributions would change in response to these habitat conditions. Areas previously impacted by higher

utilization of livestock would recover and re-vegetate over time. However, many non-native grasses and noxious weeds would continue to out-compete native species and so vegetative conditions would not necessarily return to native plant communities.

This alternative has the potential to improve habitat conditions for some special status wildlife species. The possibility for livestock damage to riparian habitat from trampling and loss of vegetation would be removed to the potential benefit of the northwestern pond turtle and frog species.

H. SOILS

1. Affected Environment

Soils consist primarily of the Bybee, Carney, Heppsie, Medco, McMullin, Tatouche, and Woodseye soil series. The Bybee soil is very deep and somewhat poorly drained. It formed in colluvium derived dominantly from andesite, tuff, and breccia. Permeability is very slow in the Bybee soil. Available water capacity is about 9 inches. The effective rooting depth is limited by a dense layer of clay at a depth of 10 to 20 inches. Runoff is medium, and the hazard of water erosion is moderate. The water table, which is perched above the layer of clay, is at a depth of 1 to 3 feet from December through May.

The Carney soil is moderately deep and moderately well drained soil is on alluvial fans and hillslopes. It formed in alluvium and colluvium derived dominantly from tuff and breccia. Permeability is very slow in the Carney soil. Available water capacity is about 4 inches. The effective rooting depth is 20 to 40 inches. Runoff is slow or medium, and the hazard of water erosion is slight or moderate. The water table fluctuates between depths of 3.0 and 3.5 feet from December through April.

The Heppsie soil is moderately deep and well drained soil is on hillslopes. It formed in colluvium derived dominantly from tuff, breccia, and andesite. Permeability is slow in the Heppsie soil. Available water capacity is about 4 inches. The effective rooting depth is 20 to 40 inches. Runoff is rapid, and the hazard of water erosion is high.

The McMullin soil is shallow and well drained. It formed in colluvium derived dominantly from andesite, tuff, and breccia. Permeability is moderate in the McMullin soil. Available water capacity is about 2 inches. The effective rooting depth is 12 to 20 inches. Runoff is medium or rapid, and the hazard of water erosion is moderate or high.

The McNull soil is moderately deep and well drained. It formed in colluvium derived dominantly from andesite, tuff, and breccia. Permeability is slow in the McNull soil. Available water capacity is about 4 inches. The effective rooting depth is 20 to 40 inches. Runoff is medium, and the hazard of water erosion is moderate.

The Medco soil is moderately deep and moderately well drained. It formed in colluvium derived dominantly from andesite, tuff, and breccia. Permeability is very slow in the Medco soil. Available water capacity is about 4 inches. The effective rooting depth is limited by a dense layer of clay at a depth of 6 to 18 inches. Runoff is medium or rapid, and the hazard of water erosion is moderate or high. The water table, which is perched above the layer of clay, is at a depth of 0.5 foot to 1.5 feet from December through March.

The Tatouche soil is very deep and well drained. It formed in colluvium derived dominantly from andesite, tuff, and breccia. Permeability is moderately slow in the Tatouche soil. Available water capacity is about 8 inches. The effective rooting depth is 60 inches or more. Runoff is medium, and the hazard of water erosion is moderate.

Areas of concern for livestock are primarily localized areas of compaction and disturbance in riparian meadows.

2. Environmental Consequences

The main effects that livestock grazing has on the soil resource is disturbance leading to increased erosion and increase in bulk density when cattle grazing occurs during wet soil conditions. Cattle can exert both beneficial and detrimental effects on a grazed field. The greatest detrimental concerns, perhaps, are the physical effects of treading. The interaction of several factors will determine the amount of potential damage that may result. Soil moisture content, soil physical properties, type of forage, stocking rate, and number of days grazed all interact greatly in managing to minimize treading damage. The most basic concept is that the application of weight (cattle) to soil which is wet, will compress more soil into smaller volumes, thereby increasing bulk density of soil (weight per unit volume). The effect of compaction is that it diminishes the volume of soil in the plant rooting zone that can store oxygen and water (pore space), thereby limiting rooting volume of the plants. Because the effect of treading is greatest at the soil surface, this can lead to decreased soil permeability of both air and water. Lowered rates of water infiltration may lead to higher rates of surface runoff during heavy rains and to greater soil erosion, a problem often related to overgrazing.

The nature of the forage can also affect the rate at which treading damage occurs. Established forage that has a prolific rooting system in the top 6 to 10 inches of soil (form a good sod), can absorb more treading energy than forage that does not form a dense rooting mass, thereby slowing the rate at which soil damage can occur. Annual grasses have shallower root systems and shorter life cycles than native perennial grasses, and thus have reduced capacity to hold the soil and retain water and nutrients. Annual grassland furthermore often accumulates a layer of thatch where decomposition and nutrient cycling are different than in native plant communities (Ehrenfeld 2003; D'Antonio and Vitousek 1992).

From the positive standpoint, large quantities of dung and urine are deposited within paddocks as a result of intensive grazing management. In addition to nutrient recycling, organic matter in the dung will increase the rate of organic matter buildup in the soil, which also leads to improved soil physical properties. One of the obvious consequences of using cattle to harvest forages is that nutrient content of ingested forages may be transported from some parts of a field to other parts and re-deposited in urine and feces. Most estimates indicate that about 25%, 20%, and 15%, respectively, of nitrogen (N), phosphorus (P), and potassium (K) contained in forages consumed by grazing cattle is retained in their bodies for support of their various metabolic processes. This means that about 75%, 80%, and 85%, respectively, of N, P, and K passes through the animal and are excreted in urine and feces. Most of the nutrients ingested are, thereby, recycled by the animals, perhaps many times. On grazed fields, these recycled animal nutrients are, or can become, available as plant nutrients. One point of concern, though, is that urination and defecation patterns of grazing cattle do not result in recycling of nutrients uniformly over the field. Grazing practices affect the distribution of recycled nutrients.

The cattle turn out date is dependent on range readiness which is primarily determined by soil moisture content being low enough to prevent trampling, soil compaction, decreases in vegetative cover and erosion. The affects to the soil resource as a result of cattle grazing assumes the range readiness is being met.

a. Alternative 1 - No Action

Under this alternative the existing cattle grazing operations would continue. Field observations revealed that impacts to the soil resource such as trampling and an increase in soil erosion were occurring near the watering areas where the cattle congregate. In these areas, forage is reduced at a higher level than across the general landscape and soil disturbance is very apparent near the water sources. The lack of vegetation and the cattle activity in riparian areas is the main contributing factor to the streambank slumping and associated erosion.

The riparian areas have been substantially impacted by cattle grazing in the recent years resulting in elevated amounts of soil erosion from stream banks. It is highly unlikely that the stream banks will stabilize under this proposed alternative.

b. Alternative 2 - Proposed Action

Under this alternative the existing cattle grazing operations would continue but the release date would be pushed back one month to allow the soil moistures to decrease. This will decrease the disturbance leading to increased erosion and increase in bulk density when cattle grazing occurs during wet soil conditions. This alternative would also allow the vegetation to grow longer before grazing occurs. The length of the grazing period would not change and herding efforts may reduce the impacts to the riparian area. It is highly unlikely that this alternative would result in stream bank stabilization and erosion in the riparian area would continue at near current rates. This alternative would slightly aid in reducing the bank slumping and above normal erosion rates in the riparian areas. Only removing the cattle from the riparian area for a few growing seasons would stabilize the current conditions (see Proposed Mitigation above).

c. Alternative 3 - No Grazing

This alternative would allow the vegetation to mature, produce seed and contribute organic material to the soil. The increase plant material and addition of organic matter would aid in stabilizing the soil across the landscape and particularly in the riparian areas where grazing has caused increased disturbance. This alternative would allow the riparian areas to stabilize and erosion rates in these areas would decrease.

I. CULTURAL RESOURCES

This project would not result in restricting access to, and ceremonial use of, Indian sacred sites by Indian religious practitioners or adversely affect the physical integrity of such sacred sites. No sites have been identified in the project area.

This project would have no effect on Indian Trust Resources as none exist in the project area.

This project was determined to have no adverse effects on properties listed or eligible for listing on the National Register of Historic Places. This includes Native American religious or cultural sites, archaeological sites, or historic properties. The proposed project would have no adverse effects on known cultural resources.

J. RECREATION AND VISUAL RESOURCES

The grazing allotment is not near any established or developed recreation areas or within a Visual Resource Management Area. Recreation that might occur in the project area would be of a limited and dispersed nature such as people on foot passing through while hunting, exploring the area for wild flowers or mushrooms and activities of this nature. Some limited off-road vehicle recreation, which is currently a legal permitted activity, may occur within the allotment.

K. OTHER EFFECTS

1. Potential Effects to Public Health and Safety.

No aspects of the grazing operation have been identified as having the potential to significantly and adversely impact public health or safety.

2. Environmental Justice

This project was reviewed for the potential for disproportionately high or adverse effects on minority or

low income populations; no adverse impacts to minority or low income populations would occur.

3. Ecologically Important Areas

The allotment does **not** involve any ecologically significant areas such as significant caves, National Monuments, Wilderness Study Areas, Research Natural Areas, or areas listed on the National Register of Natural Landmarks.

PUBLIC PARTICIPATION

Public notice of the availability of this EA was provided through BLM's Medford District website. Notification of the availability of this EA was also mailed to the following agencies, organizations, and tribes.

Organizations and Agencies

Association of O&C Counties
Audubon Society
Dead Indian Stockman Assoc.
Friends of the Greensprings
Jackson County Stockmen's Association
Jackson County Commissioners
Jackson Co. Soil and Water Conservation District
Klamath Siskiyou Wildlands Center
Northwest Environmental Defense Center
Oregon Department of Forestry
Oregon Wild
Oregon Department of Fish and Wildlife
Oregon Department of Environmental Quality
The National Center for Conservation Science and Policy
Siskiyou Project
Little Butte Watershed Council
Southern Oregon University Library
Southern Oregon Timber Industries
Pacific Legal Foundation

Federally Recognized Tribes

Cow Creek Band of Umpqua Indians
Confederated Tribes of Grand Ronde
Confederated Tribes of Siletz
Klamath Tribe
Quartz Valley Indian Reservation (Shasta Tribe)
Shasta Nation

Other Tribes

Confederated Bands [Shasta], Shasta Upper Klamath Indians
Confederated Tribes of the Rogue-table Rock and Associated Tribes

References

- Cowley, E.R. and T. Burton. 2004. Monitoring streambanks and riparian vegetation: multiple indicator monitoring. Available at the Medford District BLM, Medford, Oregon.
- D'Antonio, C. M. and Vitousek, P. M. 1992. Biological Invasions by Exotic Grasses, the Grass/Fire Cycle, and Global Change. *Annual Review of Ecology and Systematics*, 23:63-87.
- Ehrenfeld, J. G. 2003. Effects of Exotic Plant Invasions on Soil Nutrient Cycling Processes. *Ecosystems* 6:503-523.
- Oregon Department of Environmental Quality (ODEQ). 2006b. Oregon administrative rules, chapter 340, division 41, internet address [<http://www.deq.state.or.us/wq/wqrules/wqrules.htm>]. DEQ, Portland, Oregon.
- Oregon Department of Environmental Quality (ODEQ). 2006a. *Oregon's 2004/2006 integrated report*. Internet address: [<http://www.deq.state.or.us/wq/303dlist/wq2004intgrrpt.htm>]. DEQ, Portland, Oregon.
- Oregon Department of Environmental Quality (ODEQ). 2004. Draft Rogue basin riparian condition assessment report. DEQ, Medford, Oregon.
- US Department of Agriculture, U.S. Department of the Interior, Bureau of Land Management, and the Oregon Agricultural Exper. Sta.. 1993. Soil survey of Jackson County area, Oregon.
- US Department of the Interior, Bureau of Land Management and USDA Forest Service, 1994. Final Supplemental Environmental Impact Statement on Management of Habitat for Late-Successional and Old Growth Related Species Within the Range of the Northern Spotted Owl.
- US Department of the Interior, Bureau of Land Management, Medford District. 1998 and 1995. Stream and Riparian Survey Data. Medford, OR.
- US Department of the Interior, Bureau of Land Management. Portland, OR 1997. 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.
- US Department of the Interior, Bureau of Land Management, Medford District 1995. Record of Decision and Resource Management Plan.
- US Department of the Interior, Bureau of Land Management 1994. Medford District Proposed Resource Management Plan/ Environmental Impact Statement.
- US Department of the Interior, Bureau of Land Management 1994. Record of Decision for Amendments to Forest Service and Bureau of Land Management Planning Documents Within the Range of the Northern Spotted Owl: Standards and Guidelines for Management of Habitat for Late-Successional and Old Growth Related Species within the Range of the Northern Spotted Owl.
- US Department of the Interior, Bureau of Land Management, Medford District 1993. Medford Grazing Management Program Environmental Impact Statement.